Industrial Designers in UX Practice: Motivations, Professionalization, and the Construction of Designer Identity

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Introduction

The journey through the designerly ways of "knowing" and "being" encompasses learning how to fulfill the requirements of a professional designer role within a given establishment. In light of the ambiguity, fluidity, and multiplicity surrounding design activities, the expected role of a designer is neither universally agreed upon nor static. As one of these blurred designing territories, user experience (UX) has gained popularity as a field of design specialization.[1] The field is known to welcome professionals with diverse academic backgrounds, manifesting a truly multidisciplinary outlook. However, novelty and diversity come with a price: There is no consensus as to what constitutes disciplinary knowledge, hence informal learning emerges within a community of practice for the development of professional UX competence.[2]

The traces of UX work can be found as early as the 1950s, although the term was not coined until the 1990s by Donald Norman.[3] Those in academia were eager to define what it is, with little consensus, except that it requires going beyond the instrumental interaction between the user and technology. The immaterial aspects that users bring to the interaction are central in conceptualizing UX.[4] Naturally, psychology has taken a central role in the design field's study of user experience.[5] However, in today's job market, UX is used almost solely in relation to digital products that offer screen-based interaction. Norman notably criticized this view, reminding designers of the non-instrumental and holistic nature of the experience.[6]

Industrial design (ID) is one of the many fields that relate to UX. Apart from the user focus, its holistic nature is believed to be inspirational for UX practitioners as a means to broaden their understanding of the design scope and principles and to avoid the risk of design fixation.[7] Although adapting to change is a requirement for most professions (e.g., how artificial intelligence relates to one's domain of practice), the change in design can be dramatic because of the conflicting essence of what is accepted as proper

1 Muhammet Ramoğlu and Aykut Coşkun, "Scientific Craftsmanship: The Changing Role of Product Designers in the Digital Era," *The Design Journal* 20, no. sup1 (2017): 4497–508, https://doi.org/10.1080/14606925.2017.1352946.

2 Yubo Kou and Colin M. Gray, "Towards Professionalization in an Online Community of Emerging Occupation," in *Proceedings of the ACM Conference on Supporting Groupwork* (New York: ACM, 2018), 322–34, https://doi.org/10.1145/3148330.3148352.

3 Jakob Nielsen, "A 100-Year View of User Experience," *Nielsen Norman Group*, https://www.nngroup.com/articles/100-years-ux/ (accessed April 4, 2022).

4 Marc Hassenzahl, "User Experience and Experience Design," in *The Encyclopedia of Human-Computer Interaction*, 2nd ed. (Online Publication: Interaction Design Foundation, 2014), https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed.

5 An explicit mark of this turn is the Design and Emotion international conference series, which began in 1999. Norman's following book also can be considered a milestone: Don Norman, *Emotional Design: Why We Love (or Hate) Everyday Things* (New York: Basic Books, 2004).

6 Don Norman, "Don Norman: The Term UX" in *Nielsen Norman Group Youtube Channel*, https://www.youtube.com/watch?v=9BdtGjoIN4E (accessed April 4, 2022).

7 See, e.g., Simon King and Kuen Chang, *Understanding Industrial Design: Principles for UX and Interaction Design* (Boston: O'Reilly, 2016); and Anna Thies et al., "Beyond ICT: How Industrial Design Could Contribute to HCI Research," *Swedish Design Research*

https://doi.org/10.1162/desi_a_00715

knowledge, method, and skills across design domains.[8] Although UX practice has been alluring for ID graduates, with its rich employment opportunities, the UX job market can demand skills (e.g., visual interface design, digital prototyping, coding, and usability testing[9]) that are not among the traditional ID skills focusing on physical products.

Acknowledging the dubious nature of design practice(s), we scrutinize a case of professional transition between two neighboring design fields—namely, ID and UX design—to seek answers to the following questions: (1) What are the motivations of industrial designers to continue their UX positions instead of taking jobs characterized more directly by their educational background? (2) And how does adaptation to UX practice mediate (re)construction of their professional designer identities? For this purpose, we conducted semi-structured interviews with 14 industrial design graduates working in diverse UX positions in Turkey. The ways they legitimize their motivations and perceived competence for UX hint at their construing of the UX as a field and their narratives on the formation of designer identity.

Competence and Professional Identity in Design Work

Professional identity and competence are intertwined. However, the knowledge, skills, and values that make a "good designer" are hardly agreed upon. In his seminal work, Nigel Cross outlines the major milestones in the association and dissociation of design and science, as well as the evolution of design as a discipline with its particular ways of knowing, thinking, and acting.[10] The distinctive character of design as a discipline can be grounded on the "wicked" nature of the problems it deals with.[11] Also distinctive is the nature of design as *reflective conversation* with the design situation, which leads to actively (re)framing the problem and planning and executing a solution.[12] Therefore, decision making and methodology in design are acknowledged as having a distinct character, but there are no universally established design methods, knowledge, or skills.

More effectively than attempting to describe universal design knowledge and skills, we can focus on how one *becomes* a designer (i.e., *professionalization* in design).[13] Gloria Dall'Alba's framework of *professional ways of being* proves to be useful to understand this process.[14] Drawing on Martin Heidegger's notions of learning, she holds an ontological understanding of professionalization by focusing on becoming rather than simply *knowing*. She suggests that the ambiguous nature of becoming a professional can be understood on the basis of several dichotomies experienced in the community of practice, in which we continuously transition into our professional selves. The embodied understanding of professional practice suggests that becoming a professional is open-ended and incomplete because it is constantly refined through experience.[15]

Journal 13, no.1 (2016): 22–29, https://doi.org/10.3384/svid.2000-964X.15122.

8 Jon Kolko, "The Conflicting Rhetoric of Design Education," *Interactions* 18, no. 4 (July/August 2011): 88–91, https://doi.org/10.1145/1978822.1978840.

9 Ruoxu Wang et al., "User Experience (UX) Matters: What Are the Most Desired Skills in the UX Designer and UX Researcher Job Ads," *Journal of Communication Technology* 4, no. 2 (2021): 82–105, https://doi.org/10.51548/joctec-2021-011.

10 Nigel Cross, "Designerly Ways of Knowing: Design Discipline Versus Design Science," *Design Issues* 17, no. 3 (Summer 2001): 49–55, http://www.jstor.org/stable/1511801.

11 Horst W. J. Rittel and Melvin M. Webber, "Dilemmas in a General Theory of Planning," *Policy Sciences* 4 (June 1973): 155–69, https://doi.org/10.1007/BF01405730.

12 Donald A. Schön, *The Reflective Practitioner: How Professionals Think in Action* (New York: Basic Books, 1984).

13 For example, works of Cross and Nelson and Stolterman investigate the journey from being novices to expert designers. See Nigel Cross, "Expertise in Design: An Overview," *Design Studies* 25, no. 5 (September 2004): 427–41, https://doi.org/10.1016/j.destud.2004.06.002; and Harold G. Nelson and Erik Stolterman, *The Design Way: Intentional Change in an Unpredictable World*, 2nd ed. (London: MIT Press, 2012).

14 Gloria Dall'Alba, "Learning Professional Ways of Being: Ambiguities of Becoming," *Educational Philosophy and Theory* 41, no. 1 (February 2009), 34–45, https://doi.org/10.1111/j.1469-5812.2008.00475.x.

15 Robin S. Adams et al., "Being a Professional: Three Lenses into Design Thinking, Acting, and Being," *Design Studies* 32, no. 6 (November 2011): 588–607, https://doi.org/10.1016/j.destud.2011.07.004.

David Wang and Ali Ilhan introduce a sociological perspective for understanding the group identity of designers.[16] They suggest that this perspective is key to understanding the distinctive nature of the profession and that the epistemological approach had been ineffective because of the absence of a definitive and uniform body of design knowledge. Lucila Carvalho, Andy Dong, and Karl Maton have a similar take by emphasizing that the broadness and complexity of design work make it difficult to describe what constitutes legitimate design knowledge.[17] They identify diverse designer identities based on how designers themselves legitimize their work through personal discourses on the possession of specialized knowledge.[18] Research that focuses specifically on industrial designers dealt with how company culture affects self-identity. For example, Tom Fisher's survey demonstrates that teamwork fosters the adoption of a pragmatic approach to creativity, bringing out communication and synthesis as prominent aspects of design, rather than individualistic creativity.[19] Lei Liu and Pamela Hinds' ethnographic study, with in-house designers, illustrates the multiplicity of designer identities constructed by the occupational rhetorics of art, engineering, and business.[20]

Previous work helps in the understanding of identity descriptions and categorizations concerning professional designer roles. Expanding on these categories, we aim to understand how professional identities are actively constructed and adapted by designers as they step into a neighboring design domain—in our case, industrial designers in UX-affiliated occupations. We use *identity work* to explore how designers shape, negotiate, and restructure the boundaries of their professional identity based on their organizational roles.[21] Identity work is largely discussed in occupational contexts to acknowledge the agency of individuals in consciously controlling their professional identity, relative to the work environment, by "forming, repairing, maintaining, strengthening, revising, or rejecting collective, role, and personal self-meanings within the boundaries of their social contexts."[22]

We particularly focus on *narrative identity work*—a concept referring to "social efforts to craft self-narratives that meet a person's identity aims."[23] To understand the identity work efforts arising during the professional transition into UX practitioners, we investigate and elicit the narratives of industrial designers through interviews. In the rest of the article, we introduce our study and discuss the motivations, perceived competence, and professionalization of designers regarding the formation of the designer identity.

16 David Wang and Ali O. Ilhan, "Holding Creativity Together: A Sociological Theory of the Design Professions," *Design Issues* 25, no. 1 (Winter 2009), 5–21, https://doi.org/10.1162/desi.2009.25.1.5.

17 Lucila Carvalho et al., "Legitimating Design: A Sociology of Knowledge Account of the Field," *Design Studies* 30, no. 5 (September 2009), 483–502, https://doi.org/10.1016/j.destud.2008.11.005.

18 Ibid. The authors use legitimation code theory to elucidate the social structuring of knowledge in design. Based on respondents' accounts, they allocated design into the professional roles of knowledge (engineering design), elite (architecture), and knower (fashion design).

19 Tom Fisher, "The Designer's Self-Identity—Myths of Creativity and the Management of Teams," *Creativity and Innovation Management* 6, no. 1 (March 1997): 10–18, https://doi.org/10.1111/1467-8691.00044.

20 Lei Liu and Pamela Hinds, "The Designer Identity, Identity Evolution, and Implications on Design Practice," in *Design Thinking Research: Measuring Performance in Context*, ed. Hasso Plattner et al. (Berlin: Springer, 2012), 185–96.

21 See Tony J. Watson, "Managing Identity: Identity Work, Personal Predicaments and Structural Circumstances," *Organization* 15, no. 1 (January 2008): 121–43, https://doi.org/10.1177/1350508407084488.

22 Brianna Barker Caza et al., "Identity Work in Organizations and Occupations: Definitions, Theories, and Pathways Forward," *Journal of Organizational Behavior* 39, no. 7 (September 2018): 895, https://doi.org/10.1002/job.2318.

23 Herminia Ibarra and Roxana Barbulescu, "Identity as Narrative: Prevalence, Effectiveness, and Consequences of Narrative Identity Work in Macro Work Role Transitions," *The Academy of Management Review* 35, no. 1 (2010): 137, https://doi.org/10.5465/AMR.2010.45577925.

Research: Industrial designers in the UX practice

When Pelle Ehn wrote the article, "Manifesto for a Digital Bauhaus," design disciplines were in the midst of a transformation.[24] Ehn interpreted the transition from material and solid to virtual and fluid as a new confrontation, but also as an opportunity for a "second" reconciliation of art and technology—a Bauhaus for the twenty-first century. This transformation was the manifestation of a necessity resulting from the convergence of the design of computed artifacts with other design fields (e.g., industrial design and graphic design)—a convergence that transcends the boundaries between "soft" and "hard."[25] Industrial design has had its share of such blurring of boundaries. As in many parts of the world, UX has become a popular job alternative among ID graduates in Turkey.[26]

Design education in Turkey is highly specialized, which can make the transition among design professions potentially challenging.[27] Focusing on the process of "becoming" UX professionals, we aimed at surfacing how designers manage the potential identity conflicts by accommodating and negotiating legitimate design competence in UX work. We conducted semi-structured interviews with 14 ID graduates and asked open-ended questions about their organizational roles, motivations to work in UX, and experiences in adapting to this new professional role. We used a purposive sampling strategy to include designers in different occupational roles and with varying degrees of experience (see Table 1).[28] Because we have been involved in undergraduate ID teaching in Turkey for more than ten years, we started with acquaintances and then snowballed to access designers that have diverse backgrounds. We interviewed those who occupy UX positions, as well as two new graduates who were actively searching for UX jobs at the time.

Each interview lasted approximately one hour, was voice-recorded, transcribed word-for-word, and imported to Atlas.ti for content analysis.[29] We adopted an inductive approach to identify narrative themes using open-coding statements. The descriptions and frequencies of codes and sample quotations are presented in the supplement file.[30] The emergent themes of occupational motivations and design professionalization are discussed in the following sections using the theoretical structure from the literature.

Motivations for Working in the UX Field

The way work motivations are described by participants indicates how they legitimize the fitness of the UX work to their designer self. To interpret the proclaimed motivations, we relied on self-determination theory (SDT), which has extensive applications in the study of occupational motivation.[31] According to SDT, intrinsic motivation can be cultivated through the satisfaction of three human needs:

24 Pelle Ehn, "Manifesto for a Digital Bauhaus," *Digital Creativity* 9, no. 4 (1998): 207–17, https://doi.org/10.1080/14626269808567128.

25 Pelle Ehn and Lone Malmborg, "The Design Challenge," *Scandinavian Journal of Information Systems* 10, no. 1&2 (December 1998): 211–18.

26 Pınar Kaygan et al., "Change in Industrial Designers' Jobs: The Case of Turkey, 1984–2018," *The Design Journal* 23, no. 6 (2020): 821–41.

27 Undergraduate design programs in Turkey are largely characterized by the focus on specific "objects" of design, instead of generalist design curriculums. Programs that were available in 2020 (and the number of them) are: Interior Architecture and Environmental Design (46), Visual Communication Design (36), Industrial Design (31), Communication Design (23), Fashion/Textile Design (14), Graphic Design (8), Film Design (5), Digital Game Design (5), Urban Design and Landscape Architecture (4), Jewelry Design (3), Ship and Yacht Design (1), and Footwear Design and Manufacturing (1). See Higher Education Council of Turkey, "Undergraduate Preference Wizard," *Higher Education Programmes Atlas*, https://yokatlas.yok.gov.tr/tercih-sihirbazi-t4.php (accessed September 20, 2021).

28 On purposive sampling strategies, see, e.g., Michael Q. Patton, *Qualitative Research & Evaluation Methods*, 4th ed. (Thousand Oaks, CA: Sage, 2014), 264–72.

29 Klaus Krippendorf, *Content Analysis An Introduction to Its Methodology*, 4th ed. (Thousand Oaks: Sage, 2018).

30 Sedef Süner-Pla-Cerdà et al., "Supplement File for the Article Titled: 'Industrial Designers in UX Practice: Motivations, Professionalization, and Construction of Designer Identity," *Aperta Türkiye Open Archive*, doi:10.48623/aperta.228316, https://aperta.ulakbim.gov.tr/record/228317#.Yq9Dd3ZBxPZ.

31 Richard M. Ryan and Edward L. Deci, "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being," *American Psychologist* 55, no. 1 (2000): 68–78, https://doi.org/10.1037/0003-066X.55.1.68.

Table 1 | Occupational Profiles of the Participating Designers

P#	Gender	Years after Graduation	Professional Experience in UX	Type of Firm	Job Title
D1	Female	3-5 years	2-3 years	Consultancy	UX Researcher & Designer
D2	Female	1-2 years	1-2 years	Consultancy	UX Designer Assistant
D3	Male	2-3 years	2-3 years	Consultancy	Service & Interaction Designer
D4	Female	3-5 years	1-2 years	In-house	UX/UI Designer
D5	Male	1-2 years	1-2 years	In-house	UX Specialist
D6	Female	0-1 year	-	-	Unemployed
D7	Female	0-1 year	0-1 year	In-house	UX Researcher
D8	Female	0-1 year	-	-	Unemployed
D9	Female	5-10 years	3-5 years	Consultancy	Project Manager
D10	Male	1-2 years	2-3 years	Consultancy	UX Team Lead
D11	Female	5-10 years	5-10 years	In-house	Senior UX Designer
D12	Male	3-5 years	3-5 years	In-house	UX/UI Designer
D13	Male	3-5 years	2-3 years	Consultancy	Project Manager
D14	Male	10+ years	10+ years	In-house	UX/UI Design Manager

autonomy, *competence*, and *relatedness*.[32] Likewise, the personal accounts of the interviewed designers indicate that their job motivation is maintained through the satisfaction of these needs.

First, job *autonomy* is construed as a sense of freedom and versatility. Working on two-dimensional interfaces (as opposed to physical products) and the openness of the design process to trial and error through iterative cycles are deemed favorable because the combination gives designers room for experimentation, because they can take the initiative, and because they have a sense of power in the decision-making process. The flexibility attributed to UX is sometimes explained in comparison with the purportedly rigid ID process[33]:

> I was bored of ID. It was like you are under siege; there is marketing, and then the factory, you try to explain yourself, but you can't.... It is not like I didn't like my job—I did. But I was not happy with the process because it was not well defined. Like you need to do whatever the marketing tells you. Or whatever you do has to be approved by the marketing first; only then can they start considering production. (D9)

The perceived *competence* demanded by the job is another reason for motivation. The belief of the individual possession of the required knowledge and skills is a factor, but the main source of fulfillment appears to be the appreciation of the designerly contribution within

32 Edward L. Deci and Richard M. Ryan, "The 'What' and 'Why' of Goal Pursuits: Human Needs and the Self-Determination of Behavior," *Psychological Inquiry* 11, no. 4 (2009): 227–68, https://doi.org/10.1207/S15327965PLI1104_01.

33 Although some of the respondents (D1, D4, D7, D8, D9) made this comparison explicit by pointing to the rigidity of the ID process, others implicitly considered the contrast between the two by suggesting that UX is *more* flexible.

the company, as opposed to the primarily technical expectations that accompany industrial designer roles. Receiving affirmation has a positive effect on the satisfaction of the need for competence, which consequently fosters intrinsic motivation.[34] One designer explains how positive feedback from the product development team enhances the designerly confidence:

> While working with software developers, I feel very confident because they are aware of the difference a designer can make.... They told us that the difference between graphic designers and industrial designers shows. Graphic designers just show them the screen, but industrial designers explain why they did what they did, plus they document the process. So everyone [in the team] can be aligned. (D4)

The product development cycle in the software industry is much faster than in the manufacturing industry, where industrial designers are mainly employed. Seeing the immediate results of their efforts also functions as external validation of their work.[35] It allows them to experiment and to learn by doing. Even novices are given significant responsibilities, so "you make it up as you go along" (D10) and "learn by stumbling" (D4). The tolerance for error and openness to experimentation can create a safe and encouraging environment for professional growth, fostering both *autonomy* and *competence*, as suggested by one designer: "My motivation is to keep learning new stuff because UX never ends" (D5).

The need for *relatedness* is fulfilled in a supportive environment where individuals feel connected to others. Social acceptance, the sense of belonging, meaningful connection with others, and a non-judgmental work environment are important enablers of creative and innovative work behavior.[36] For designers, the multidisciplinary teamwork culture in UX fosters a sense of relatedness. Because the number of UX degree programs is limited, the sector is perceived to be welcoming and appreciating contributions from diverse fields of expertise, and it encourages constant learning:

> We have [social scientists from two different fields] in the team. The company wanted to give it a try because they have different perspectives and know different research methods—so that we have more diversity. It is part of the job anyway: different perspectives and empathy. It is nice to hear different ideas, like "we can try this and that." I like it. (D7)

Satisfaction of autonomy, confidence, and relatedness needs is interrelated. Feeling respected and accepted in an amicable work environment naturally boosts confidence in the creative self as designer

34 Deci and Ryan, "The 'What' and 'Why,'" 234.

35 One participant (D10) said he led more than 20 projects in approximately two years that he worked in the company.

36 Toon Devloo et al., "Keep the Fire Burning: Reciprocal Gains of Basic Need Satisfaction, Intrinsic Motivation and Innovative Work Behaviour," *European Journal of Work and Organizational Psychology* 24, no. 4 (2015): 491–504, https://doi.org/10.1080/1359432X.2014.931326.

identity gets developed. An additional motivational factor noted by the participants is user-centeredness and having a positive effect on people's lives. *Beneficence* (i.e., the sense of making a positive contribution), along with autonomy, confidence, and relatedness, is proven to be an important factor underpinning meaningful work.[37] Many interviewees mentioned this outcome as a source of motivation, even if it means remaining "invisible" behind the design work:

> Our goal is to always be on the invisible side.... Being the invisible hero, having an impact on [users'] lives. This motivates me. This is the foundation of design, whether you design a building or product, or an app.... "Human" is an organic being with changing decisions and moods, sometimes with no good reason. It is an organism. It is nice to understand this organism and ponder over it. (D14)

The focus on the aesthetics of form in ID remains in the background in UX work, where the emphasis is on meeting user needs: "...[I]t is not just about making pretty things; focusing on what kind of problems it solves… helps me find meaning in design work" (D11). Although industrial products also have functional value, UX work is differentiated by its interactive nature:

> One does not interact with a flowerpot on a daily basis. But in UX, the whole point is about how the user will interact with it. That's why you have to deal with psychology and so on. This is more appealing to me, to be honest. Touching the lives of others through design. This is why I chose to be a designer in the first place: How can I contribute to people's lives? (D12)

Industrial design education in Turkey is largely user-centered.[38] However, the industry's demands from an industrial designer are mostly technical, such as digital modeling and drawing skills, as well as knowledge of production, mechanisms, and detail analysis.[39] Meanwhile, part of the legitimate design methodology in UX is regular contact with users, which makes the user focus a more tangible, day-to-day experience for designers. They often refer to these aspects of their work as sources of motivation.

Construing the Designer Identity and Professional Competence (or Lack Thereof)

UX job motivation was largely described by the participants in comparison with ID practice, and the main focus was on how different UX is from ID. However, they represented designer identity mostly in terms of design competence and how their competence makes them a good fit for UX work—this time by virtue of the similarities between ID and UX and partially through comparisons with

37 Frank Martela and Tapani J. J. Riekki, "Autonomy, Competence, Relatedness, and Beneficence: A Multicultural Comparison of the Four Pathways to Meaningful Work," *Frontiers in Psychology* no. 9 (2018): 1157, https://doi.org/10.3389/fpsyg.2018.01157.

38 In a recent review of the ID curricula in Turkey, Süner-Pla-Cerdà et al. found that all of the 15 reviewed departments have Ergonomics as a compulsory course; the majority offer UX-related courses, such as UX Design, Service Design, Interaction Design, and Inclusive Design; and project-based design studios have a user-centered focus. See Sedef Süner-Pla-Cerdà et al., "Industrial Design Students' Perceptions Towards a Career in User Experience Field in Turkey," *International Journal of Technology and Design Education* (2021), https://doi.org/10.1007/s10798-021-09666-6.

39 Onder Erkarslan et al., "Comparative Analysis of Recruitment Qualifications of Industrial Designers in Turkey Through Undergraduate Education Programs and Online Recruitment Resources," *International Journal of Technology and Design Education* 23 (2018): 129–45, https://doi.org/10.1007/s10798-011-9164-6.

"others" who may be inside or outside the design fields. Notably, the relationship between the "designer self" and the "others" does not evidently bear the antagonistic features that typically are seen within design practice, such as "designer vs. engineer" or "designer vs. industry."[40] However, there are hints of legitimizing industrial designers' fitness for UX positions because of their knowledge in design and methodology compared to other disciplines:

> When we work on a project, we can tell what the logical course of action is and what it is not. Because we are not just a "UX person" who only does UX.... Some people are self-educated, they have backgrounds in fields like child development. I find it a bit bizarre…. Completely unrelated, like they didn't study design at all, yet they try to do UX.... Those who come from atypical backgrounds are "made," not "born." (D5)

Personal experiences are presented as justifications for the eligibility of industrial designers for the job. For example, one participant expressed a designerly contribution to the work culture, such as introducing the "design crit" to the project cycle by convincing the team engineers to give constructive feedback in between design iterations (D4). Nevertheless, in addition to a general acceptance of disciplinary diversity, even the most distant categories of expertise (e.g., economics, educational science, child development) are not explicitly alienated.

The designer identity was largely construed and validated by interviewees through the depiction of what counts as legitimate design competence in UX, and that it is naturally embodied in the schooled industrial designers (i.e., themselves). The participants described three strong identifiers of UX-relevant design competence: methodology, mindset, and grounded approach. *Design as methodology* refers to the designerly ways of "doing" things: Participants believed that various ID process skills are almost effortlessly transferred into UX practice. These skills include user research, benchmarking, requirements gathering, managing iterative cycles by building mock-ups and prototypes, testing, and making revisions. This list shows parallels with the first two of the four levels of design activity proposed by Bryan Lawson and Kees Dorst: project, process, practice, and profession.[41] The project is the concrete level of the design activity, where one optimizes the design performance within the specific requirements of the project. The process level refers to an awareness of how the project progresses and involves managing this process by using particular methods—in this case, the conception of design as "methodology."

40 For a discussion of how Turkish industrial designers use "negative others" (or antagonists) to shape collective identities, see Ali O. Ilhan and Alpay Er, "Existential Antagonisms: Boundary Work and the Professional Ideology of Turkish Industrial Designers," *Design Issues* 32, no. 1 (Winter 2016): 19–31, https://doi.org/10.1162/DESI_a_00361.

41 Bryan Lawson and Kees Dorst, *Design Expertise* (Oxford: Elsevier, 2009), 60–67.

Design as mindset is a product of high-order thinking that is associated with designerly ways of thinking and knowing. According to the participants, this mindset engenders a broader approach to design in reference to general knowledge of design concepts, orientation toward problem solving, a holistic perspective on design that stems from being able to think independently from the subject of design, and awareness and self-confidence in reflecting these skills and knowledge. This mindset aligns well with the "practice" level suggested by Lawson and Dorst, which focuses on the assumed role of the designer, as well as acquiring principles that govern design work and knowledge and experiences that lead to specialization.[42] Experience in UX appears to affect professional identity, transforming and expanding it, along with the view of the profession: "I can design both physical and digital products. I am a multidisciplinary designer because industrial design covers everything from A to Z" (D5). One participant (D11) links this holistic design competence to the ID background, where one learns to deal with and synthesize diverse issues (e.g., manufacturing, materials, marketing, management) into a unified solution. In this sense, having a designer's mindset is believed to help ease adaptation to UX practice.

Grounded approach to design is another construct of the claimed designer identity and is best characterized by well-reasoned design decisions. Participants emphasized through repetition the importance of being able to "know the user" and of grounding design decisions on meaningful user needs:

> We are more adaptive in terms of form, function, and user relationship. I trace that user focus to behavioral psychology. I mean, there is a reason for a particular behavior, and then there is the *core* reason. We put more effort to get to the bottom of the core reason. Questioning like peeling off the layers, going deeper, achieving the form *through* the behavior. I think it comes from our design education (D3, emphasis added).

Participants differentiated themselves from non-designers, and sometimes from designers with different educational backgrounds, by emphasizing their ID background. The underlying reason for the latter comparison is related to a so-called "surface" and "deep structure" dualism, attributed to *user interface* (UI) and *UIX*. Few companies try to differentiate the UI and UX roles, so the boundaries are still blurred for many. Because the UX sector is dominated by digital product and service design, the visual and graphic design expectations often are automatically attached to the UX role.[43] Such expectations are seen as favoring designers who have a background

42 Ibid.

43 Because the disciplinary boundaries and definitions of UX are blurred, we often encountered perceived distinctions and overlaps of UX positions with other professions, such as graphic design and web design. See, e.g., Ana Dalila Butiurca and Massimo Zancanaro, "What Is It Like to Be a UX Designer in Italy? An Initial Analysis of Job Advertisements to Improve Training and Education in HCI," in *Proceedings of CHItaly 2021: 14th Biannual Conference of the Italian SIGCHI Chapter*, ed. Antonella De Angeli et al. (New York: ACM, 2021), Article 29, 1–5.

in graphic, visual communication, or web design and who "reaped the benefits of it the most" by occupying the leading creative positions; meanwhile, industrial designers, as latecomers, lack this advantage, although one participant noted that UX titles "could as well be automatically attached to industrial designers since they know users best." (D9)

The claims of "groundedness" in UX are clearly different from the groundedness of a scientific methodology. Although issues of rigor, validity, and reliability were implicitly mentioned, we found no evidence participants favored scientific certainty.[44] Instead, they emphasized the designerly abilities of asking the "right" questions; doing research; framing the problem before moving to the design solutions; and therefore, making well-grounded decisions and valuing user needs over personal judgments. Hence, we found a conscious dissociation of designers' identity in the UX context from the romantic portrayal of the individualistic, creative subjectivism that is traditionally attributed to creative professions.

The participants emphasized the broad descriptions of designerly ways of doing and knowing to justify the fitness of their ID background for UX work, together with additional ID-specific competencies. Yet, lack of UX-specific knowledge and technical skills was considered a problem that damages their professional image. For example, one participant (D14) emphasized the importance of professional communication with proper interface concepts and terminology, at a depth that is similar to how industrial designers are taught material qualities of common types of plastics used in products (e.g., ABS, silicon, polycarbonate). In this sense, the feeling of insufficiency is a significant *barrier to design confidence*:

> It's funny; we are formally trained, yet we feel self-taught. I am still trying to learn the terminology—so many terms that I don't know. I still need to improve. Which is fine, I would need improvement anyway; but sometimes I feel like I don't know the fundamentals. I don't always have time to spare for learning while working full time. That feeling of insufficiency… I try to make up for it. (D1)

Fundamentals of UI/graphic design and coding/digital prototyping—skills that are particularly associated with digital product design—are seen as a major challenge. The former aligns with the challenges of realizing the "surface" qualities of the designed interaction structure between user and product. The similarities of the process and reasoning behind decision making in ID and UX do not translate as directly to UI. A lack of fundamental knowledge in visual design (e.g., color theory and layout strategies) lowers self-confidence and restricts participants from creating original work. On

44 Participants believed the biggest strength is also the biggest weakness and emphasized that independently planning and implementing user research is a skill they wish they had gained prior to their current positions. User research is fundamental to educational design projects but is sometimes conducted hastily as a pragmatic step of the design process. In UX practice, proficiency in diverse research methods—considered common industry practice—is expected. The most mentioned problematic issues are the lack of interviewing skills and knowledge of quantitative methods and the use of moderated testing and sampling. We found no evidence of the effect on designer identity and design confidence; hence, these issues were not included.

the divide between UX and UI, they separate the behavioral and aesthetic aspects of design by describing what happens after the "user flow" and the "wireframe": "UI designer [should also consider] the corporate brand identity, UI trends of the day… We need to separate at that point." (D13)

Emphasizing the lack of coding/digital prototyping knowledge is a reflection of experiences with developers. Participants compared the need to familiarize themselves with the logic of coding in UX design with the need to have knowledge of manufacturing in ID. Both coding knowledge and manufacturing knowledge are required to effectively communicate with the engineers, as it is necessary to know the boundaries and possibilities when planning design interventions and to increase the designers' control over the product development process.

Such capabilities enhance their design confidence. For one participant, this empowered view of UX was partly related to a claimed managerial role in the product development process: "... moderation, process development, the change of the designer role into a facilitator who connects different departments—it is part of this world." (D11)

The Role of Professional Communities in Developing Professional Identity and Design Competence

The multidisciplinary structure and dynamic nature of the UX field lead to a lack of disciplinary boundaries, which brings challenges to the professional development of the newcomers in particular.[45] However, they can maximize their independent UX learning opportunities using online sources and standalone courses on specific topics. Almost all the participants indicated that they benefit from semi-academic content and social media platforms, such as Medium and Twitter, to keep up with the current trends and discussions in the global professional community.[46] Most participants mentioned different levels of engagement with newly forming professional communities, from event organizing to community building to simply attending. In Turkey, we have two well-known UX communities: UX Folks, based in İstanbul, and UX Minimal, based in Ankara.[47]

The functions of a community of practice are manifold. For example, they mediate the informal exchange of experience between peers, where they learn from each other and keep updated about new trends, tools, and methods. Community networks also allow practitioners to connect with a diverse set of professionals in the field. Event-based gatherings appear to be the most prominent community-building activities, functioning as platforms to collectively negotiate, define, and promote what counts as "good" UX practice. One participant emphasized the importance of community networks

45 Yubo Kou and Colin M. Gray, "'What Do You Recommend a Complete Beginner Like Me Practice?' Professional Self-Disclosure in an Online Community," *Proceedings of the ACM on Human-Computer Interaction* 2, Computer-Supported Cooperative Work and Social Computing (November 2018), Article 94, 1–24, https://doi.org/10.1145/3274363.

46 Commonly mentioned platforms for semi-academic sources included Nielsen and Norman Group, Interaction Design Foundation, Udemy, Coursera, IDEO-U, and Rosenfeld Media.

47 See the UX Folks community website: https://www.uxfolks.co/ and the UX Minimal community website: https://www.uxminimal.com/.

for addressing shared concerns about "maintaining quality work," about "UX becoming a marketing term rather than genuinely valuing the user," and about "the need for creating a safe design environment" (D3). Interactions with like-minded peers improve the sense of belonging and emphasize professional group identity. However, community interactions also provide opportunities both to observe different perspectives on the professional practice and to legitimize their own:

> The event moderators asked the participants whether or not there is a usability or UX standard in their firms. Many answered yes. When asked to explain, everybody described the design process; nobody talked about standards. It got me thinking; they are so unaware of the philosophy behind this work. They think it is just digital design. They work as UI designers, but they identify as UX designers. There are problems like that. (D4)

Seminars, workshops, and design-a-thons are seen as particularly helpful for the newcomers, even before they graduate or have any professional experience. These forums facilitate awareness by revealing the parallels between ID and UX processes, which are "more or less the same as what is done in [educational] projects" (D6). In addition, for those who are curious about the field, these events could be "stepping stones," where they gain a general understanding of UX (D2). Furthermore, they provide venues for testing their UX-relevant skills:

> I wasn't aware until the design-a-thon that we had been doing UX all along. The organizers told us to do research; there were students from other universities, too. Our team was grouping the research findings when [one organizer] came to tell us that we are probably learning proper UX at our department. Only after that did it hit me: UX is what I was trying to do the whole time. (D8)

Lawson and Dorst define the fourth level of design activity, the design profession, as adapting to rapid changes by redefining the nature of the profession within a community of practice.[48] In this case, both formal and casual encounters and engagements with the UX communities helped designers to observe, negotiate, and claim the characteristics of a good UX practitioner.

48 Lawson and Dorst, *Design Expertise*, 66–67, n 36.

Conclusion

We investigated the narrative evidence of the identity work of industrial designers to understand how they actively form and assume a new professional identity as they adopt their roles in UX-affiliated positions. Narrative identity work is known to play a central role in managing work role transitions.[49] Therefore, we discussed the self-declared motivations and perceived design (and UX) competence of industrial designers in the context of seeking and maintaining a UX career.

Identity work was useful as a framework for identifying how industrial designers could form, negotiate, and revise their professional identities as they transition into a new occupational role as a UX professional. However, our findings are based on limited narrative evidence reflecting personal experiences in particular work contexts and cannot be generalized. The characteristics of the industrial design education in Turkey and the specific conditions of the professional design environment have a fundamental influence on the experiences of design professionals, and thus on their personal narratives.

Designers framed what makes a model UX practice and established a natural connection between the job requirements and their educational background by emphasizing the favorable characteristics of the UX work. Their sense of autonomy, competence, and relatedness created a safe environment where they could experiment, fail, succeed, and learn the specifics of the work, and hence could "become" a UX professional. These opportunities were often compared with the traditional work environments in which ID occurs, the latter of which was portrayed as having a rigid process and less appreciation for a designerly contribution (i.e., less designer control over the process).

As participants embraced the "UXer" identity, they adopted an umbrella definition of design by accentuating a general design methodology and mindset. Sometimes, this focus meant trading their specialized ID know-how for UX-relevant aspects of design. However, particular UX skills were attributed to the ID background as a conscious effort toward self-endorsement for UX positions. The identity work observed in narratives of a grounded approach to design was particularly aimed at differentiating themselves from others by construing a group identity of "designers with an ID background." Conversely, a lack of perceived competence in certain UX-relevant

49 Ibarra and Barbulescu, "Identity as Narrative," 137–38, n 25.

skills lowered their design confidence. As a result, they tried to define and draw lines between UX sub-territories to claim and reinforce their chosen identities based on organizational roles. Nevertheless, such claims did not bear a strong antagonistic manner toward outgroups. Arguably, the absence of a universally ideal UX professional profile leads to a lack of clear disciplinary boundaries in claims of the profession because everyone is an "outsider" to some extent.

Despite UX's being such a young profession, a community of UX practitioners that has both an online and offline presence has emerged. These groups of UX professionals are fairly open to novices and practitioners with different backgrounds, relative to other professional communities. They have become sites for identity work because they provide social contexts for designers to form, negotiate, and strengthen their collective role identities in comparison with other community participants (the loosely identified outgroups). The lack of strict norms and of professional "elites" in the field leaves room for observing and navigating through the multiplicity of UX practices. Practitioners thus are then able to tailor an identity that is most suitable for them. Such opportunities endorse the incomplete, open-ended, and continuous nature of the *professional ways of being a designer*.

How the professional heterogeneity in UX practice is handled by different design domains in the future depends on one important issue: whether the disciplinary boundaries remain ambiguous, or a process of professionalization starts to set occupational norms and standards. Either way, how designers cope with the dynamic nature of the employment conditions will be an interesting journey to observe.