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Rethinking UX Education

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ABSTRACT

The field of User Experience (UX) has evolved rapidly, driven by technological advances, the normalization of Agile methodologies in software design, and the rise of AI. Despite this growth, UX education struggles to keep pace, often prioritizing static concepts or specific tools over the adaptable skillsets required in today's industry. The gap between classroom learning and real-world application leaves graduates ill-equipped to navigate a dynamic landscape where expectations for UX professionals are broader and more integrated than ever. This paper critiques the current state of UX education and presents a framework to align academic curricula with industry needs. Central to this critique is the understanding that UX should not exist as a siloed field. UX is not visual design, nor is it solely research. It is a process that encompasses problem-solving, iterative learning, and collaboration. To succeed, UX professionals must work as part of a product team, integrating their efforts with developers and other stakeholders to create solutions that reduce costs and deliver value. Yet, many UX programs fail to teach students how products are built from end to end, focusing instead on artifacts like wireframes and mockups rather than the broader process. Classrooms frequently neglect critical skills such as coding, meeting or workshop facilitation, and project ownership, which are essential for effective collaboration with stakeholders and cross-functional teams. The industry's cyclical need for specialization versus generalization underscores the importance of adaptability. Over-specialization in areas like interaction design or visual design can limit career growth, especially when technological priorities shift. Instead, students should learn the core UX process and apply it across diverse contexts. This adaptability extends to tooling. Tools like Figma are constantly evolving, requiring educators to teach principles rather than platforms to ensure students understand concepts that transcend specific software. The analogy to painting illustrates this approach, where techniques like shading remain consistent regardless of medium (watercolor, acrylic, oil). Mastering tools is not synonymous with mastering UX, or any discipline. To address these gaps, educators must rethink how they prepare students for careers in UX. Programs should emphasize hybrid skills that integrate research, visual communication, and technical understanding. Students must engage in all parts of the product process, learning how to prioritize features with technical leads and collaboratively plan solutions. Education should also foster teamwork and open communication, teaching students how to work asynchronously and synchronously with peers across disciplines. Effective soft skills, such as giving and receiving critique and presenting ideas clearly, are critical for professional success. In addition to foundational changes, UX programs must embrace continuous improvement. Curricula should be updated yearly based on summer research into emerging tools, processes, and best practices. Faculty should cross-train during breaks, exploring industry trends and enhancing their skillsets. This iterative approach mirrors the reality of UX work, where learning and pivoting are constant. Ultimately, the success of UX education lies in preparing students for a rapidly evolving field. By integrating real-world practices, fostering flexibility, and embedding UX within broader product development processes, educators can empower graduates to thrive. This paper challenges institutions to rethink their approach and offers practical strategies to bridge the gap between academic theory and industry expectations.

Keywords: User experience, Service engineering, Education

INTRODUCTION

The transition from education to industry has never been more challenging. The field of User Experience (UX) has moved backward in its practice. This has made getting a UX career increasingly competitive, with limited roles and many businesses and roles misrepresenting the roles they have. Many graduates enter the job market only to realize that their coursework did not fully prepare them for the complexities of working in a cross-functional environment (Intelligent.com).

Beyond research and design, UX professionals must be comfortable working within ambiguity, communicate effectively with team members and stakeholders, present and defend their ideas, facilitate alignment on project direction, and manage shifting priorities. These skills - often overlooked in academic programs - are essential for navigating real-world UX work. Any successful career is not built on the understanding of tooling alone.

The true measure of a UX education is not whether a student secures a job immediately after graduation but whether they are equipped for long-term success in an evolving industry. A holistic UX education must integrate collaboration, critical thinking, and problem-solving to prepare students for long-term success in the industry.

How We Got Here

The perception of UX has faced significant challenges over the years. In 2019, progress was being made in defining distinct roles within the field, such as separating the role of UX from strictly being aesthetic User Interface (UI) designers.

The 2020 tech bubble disrupted the foundational work we had started, with an influx of untrained people entering the practice en mass, diluting the field by misrepresenting the process and returning the outward perception of UX being an aesthetic practice. These newcomers often relied heavily on tooling and templates, which led to shallow practices that failed to address the deeper, more critical aspects of UX work. Now, many business leaders view UX as a "nice-to-have" rather than being essential (Moran et al.).

The new entrants into the practice were not prepared for the true practice of UX and have stifled critical thinking and limited the ability to create meaningful business value, prioritizing artifacts over problem-solving – emphasizing the need for a return to depth and adaptability in the field (Moran et al.). This mindset has led UX practitioners to be among the first to face budget cuts, undermining their value in product development.

Challenges in UX Education

The rapid evolution of UX - and software development as a whole - often outpaces academia's ability to adapt. Higher education institutions often struggle to strike a balance between theoretical knowledge and real-world application, leaving graduates with gaps in practical experience (Fantinelli et al.). To better prepare students, UX programs must integrate industry-relevant training, ensuring they stay aligned with the latest tools, methodologies, and challenges.

Many programs focus too heavily on visual and interface design, rely on controlled usability research environments, or focus too heavily on teaching tooling, failing to equip students with skills such as:

- Software-agnostic training to help future-proof their careers.
- Cross-disciplinary knowledge and the ability to work and communicate across-team disciplines.
- Soft skills such as communicating and presenting to stakeholders and technical teams.
- Project ownership and management skills to drive initiatives forward.
- The understanding of coding fundamentals and the constraints of software development.
- Gaining industry experience through hands-on, real-world projects.

This paper critiques the current state of UX education and proposes a solution that blends theory with practical application. By integrating experiential learning, industry partnerships, and cross-functional training, UX programs can better prepare students for the realities of modern UX work.

CHALLENGES FACING RECENT UX GRADS

Breaking into the UX field presents a unique set of challenges for new professionals, many of which stem from a disconnect between education and industry expectations. While UX is often described as a broad, multidisciplinary field, the reality of job market demands can make it difficult for new graduates to find roles that fully utilize their skill sets. From narrowly defined job descriptions to the rapid evolution of industry tools and practices, UX professionals must navigate an environment that requires both adaptability and continuous learning.

The Narrow Definition of UX Roles

One of the first obstacles new UX professionals encounter is how companies define their UX roles. Instead of viewing UX as an integrated discipline encompassing research, strategy, and design, organizations often break it into highly specific functions. Some job descriptions focus exclusively on user research, while others emphasize visual design or usability testing. This compartmentalization of the practice can be limiting, particularly for those who have been trained as generalists and think holistically about the user experience.

As a result, UX professionals who are comfortable working across multiple areas - balancing user needs, business goals, and technical constraints - may struggle to find roles that allow them to fully apply their expertise. Companies that lack a mature UX practice often misunderstand what UX professionals do, leading to job descriptions that prioritize artifact creation over meaningful problem-solving. This misalignment forces many new UX professionals to either specialize in a narrow function or continuously advocate for a broader, more strategic approach to UX within their organizations, possibly resulting in falling on deaf ears.

The Risk of Over-Specialization

While specialization can be valuable in mature organizations, early-career professionals benefit from a broad foundation in UX before narrowing their focus. Industry trends shift rapidly, and what is considered a high-demand specialization today may become obsolete tomorrow. Several years ago, there was a surge in demand for UX professionals specializing in mobile app design. As responsive web design and cross-platform, hybrid products became the standard, those who exclusively built careers around mobile UI may find their expertise less relevant.

A strong UX professional must remain adaptable. Rather than over-specializing in a single discipline (e.g., UX research), professionals who master problem-solving, research synthesis, and interaction design can better adapt to industry changes. Those who prioritize learning the fundamentals of UX rather than latching onto the latest trend or tool will be better equipped to weather the cyclical nature of industry demands.

The Misalignment of Transferable Skills vs. Tool Expertise

New UX professionals often enter the field with a deep knowledge of specific design tools, but tool proficiency alone does not equate to UX expertise. In the past 10 years, the industry has shifted focus from Adobe Illustrator and PhotoShop to Sketch to Adobe XD to Figma in just a few years. This illustrates that tools come and go, but what remains constant is the ability to think critically, approach design problems strategically, and collaborate effectively with cross-functional teams.

Yet, many educational programs overemphasize tool mastery at the expense of broader UX competencies. Graduates who have spent months refining their Figma skills may find themselves at a disadvantage when employers prioritize candidates who can demonstrate how their work drives business value, improves usability, or aligns with development constraints. Instead of focusing solely on tools, new UX professionals must develop a mindset that embraces adaptability and continuous learning, recognizing that picking up new software is an expected part of the job, not the foundation of their expertise.

Unrealistic Expectations and the Rapid Pace of Industry Change

Another challenge facing new UX professionals is the disparity between academic training and real-world industry expectations. When students declare a major in UX or a related field, they commit to a curriculum that may not align with industry needs by the time they graduate. UX is a fast-moving discipline shaped by emerging technologies, evolving best practices, and shifting business priorities. What was cutting-edge four years ago may now be outdated or irrelevant today.

This creates a difficult transition for graduates who expect to enter the workforce fully prepared, only to find that companies are looking for skills they weren't taught. Employers, meanwhile, assume new hires will be able to contribute immediately, with little room for structured onboarding or upskilling. The result is a gap between what entry-level UX professionals

know and what companies expect, forcing new hires to quickly adapt to ambiguity, learn on the job, and navigate constantly shifting priorities.

The Lack of Structured Onboarding and Support in Practice

Unlike traditional professions with clear training programs, UX careers often lack structured onboarding processes, particularly in companies still maturing in their UX practice. Many organizations expect new UX hires to be productive from day one despite the fact that UX work involves navigating stakeholder relationships, understanding business objectives, and integrating with development teams - skills that take time to develop.

Without structured support, new UX professionals may struggle to find their footing. Those entering the field must be prepared to seek mentorship, proactively learn from more experienced colleagues, and continuously refine their approach to UX through hands-on experience. Employers, in turn, should recognize the value of providing proper onboarding, ensuring that new UX hires have the guidance and resources they need to succeed.

BRIDGING THE GAP FOR NEW UX PROFESSIONALS

The challenges facing new UX professionals are not insurmountable but do require a shift in how we approach UX education, hiring, and professional development. To better prepare for success in the industry, aspiring UX professionals should focus on:

- Developing core problem-solving and research skills over tool expertise.
- Building adaptability and resilience to navigate shifting industry trends.
- Seeking mentorship and real-world experience through internships, apprenticeships, or self-directed projects.
- Understanding the business impact of UX to better advocate for their role within organizations.

At the same time, companies hiring UX professionals must recognize the need for structured onboarding, continuous learning opportunities, and broader role definitions that allow UX professionals to fully contribute their expertise. By addressing these challenges, both new UX professionals and the industry as a whole can create an environment where UX work is not only valued but truly impactful.

Let's Start by Clearly Defining UX

UX has its roots in ergonomics and human factors, where the focus is on designing systems that fit human needs. As technology evolved, UX incorporated insights from fields like anthropology and cognitive science to better understand user behavior (Bloch et al.).

Understanding UX requires breaking down common misconceptions that have shaped its perception in both industry and education. Many (even in the industry) assume UX is synonymous with visual design, limited to aesthetics and interface work. Others reduce UX to a research function, ignoring its role in strategy, execution, and problem-solving. The growing emphasis on design tools like Figma has led some to equate tool proficiency with UX expertise.

These misconceptions have contributed to a fragmented understanding of UX, often causing businesses to undervalue its impact. To address these gaps, it is critical to define what UX truly encompasses and what it does not.

Today, UX operates in an environment where its value is often misunderstood or difficult to quantify, making advocacy and justification essential for its continued integration into product development. Business leaders often perceive UX as expensive and time-consuming, but failing to invest in UX introduces significant risk, leading to misaligned products. Effective UX de-risks product development by:

- Identifying and articulating real user problems.
- Ensuring that investments align with user needs and business goals.
- Reducing costly rework through research and iterative design.

The modern UX practice is increasingly holistic, integrating Product Ownership, Agile practices, and UX into a single workflow. The most effective UX professionals are those who can navigate ambiguity, collaborate across disciplines, and balance user needs with business realities.

What UX is Not

- UX is not visual design: While aesthetics play a role, UX focuses on the broader experience, ensuring usability, accessibility, and problem-solving.
- UX does not always result in a UI: Defining an experience for a product is important for whatever method of interaction the product will require. This includes concepts like API and Schema design.
- UX is not only research: While research informs design, UX also requires synthesis, strategy, and execution.
- UX is not being good at tools like Figma: Mastery of a tool does not equate to mastery of UX. The value lies in how tools support a user-centered process.

What UX is

- UX is problem-solving, learning, and iteration: It involves deeply understanding user needs, testing solutions, and continuously refining designs.
- UX is a process, not a specialization: Focusing on a niche like "UX for AI" or "UX for VR" is less important than mastering the UX process itself.
- UX is a business strategy: Effective UX work balances business objectives, user needs, and technical feasibility.
- UX is the voice of the stakeholders and the users: A key outcome from the UX practitioner on a project is to identify and advocate for customer problems, gather stakeholder input, and ensure the product aligns with business goals.
- UX is facilitating cross-team collaboration: A UX practitioner ensures that the team understands the direction and is working together to achieve timely outcomes.

The Current State of UX Education

We reviewed UX programs across the United States, analyzing their structure and course offerings based on what they advertised. Our findings reveal a gap between academic training comparing it to our perceived industry expectations. While many programs emphasize visual design and research, they often fail to prepare students for the realities of working within cross-disciplinary teams, balancing stakeholder needs, and navigating technical constraints. This misalignment leaves graduates underprepared for the fast-paced, collaborative nature of UX work.

To address these shortcomings, we must reevaluate how UX is taught, focusing on practical application, real-world problem-solving, and developing transferable skills that extend beyond specific tools or artifacts. A strong UX curriculum should integrate product development practices, giving students exposure to working with developers, business stakeholders, and product managers. UX does not exist in a vacuum—it must align with technical feasibility, business objectives, and user needs.

Developing Hybrid Skillsets

UX designers don't need to be engineers, but understanding coding fundamentals enhances collaboration, improves design decision, and strengthens prototyping skills. Since UX is not a standalone discipline and sits at the intersection of experience, business, and feasibility, having a well rounded skill set is essential. A basic understanding of code helps designers communicate more effectively with developers ensuring smoother hand offs and reducing misunderstanding. It also enables UX professionals to make more informed design choices by considering technical feasibility early in the process and avoiding unrealistic or overly complex solutions.

An added bonus, coding would equip designers to create more interactive and realistic prototypes improving the accuracy of usability testing. By incorporating foundational knowledge, programs can better prepare graduates for real-world challenges while keeping the focus on research, strategy, and design.

Business Strategy

Few UX programs teach strategy and product management, limiting students' ability to transition into leadership roles. While Drexel University includes business coursework, many other schools that we reviewed do not, leaving graduates without essential business acumen ("User Experience & Interaction Design | Drexel Westphal").

Stakeholder Management

Stakeholder management is a critical skill that is often overlooked in UX education. UX professionals must navigate ambiguity, present ideas persuasively, and align teams around a shared vision. Unlike in the classroom, where projects are student-driven and relatively low-risk, real-world UX work involves balancing multiple perspectives, addressing business concerns, and iterating based on stakeholder feedback. Educators cannot adequately

stand in for stakeholders - stakeholders are financially motivated to make decisions and are not directly aligned with the success of the UX practitioner.

Soft Skills

Soft skills are equally critical. UX is inherently collaborative, requiring constant communication with stakeholders, developers, and end users. The ability to facilitate workshops, present design rationales, and advocate for user needs is just as important as the ability to create wireframes. UX education must integrate structured training in these areas, ensuring students can confidently navigate workplace dynamics and stakeholder expectations.

Comfort in Ambiguity

Adaptability and resilience round out the hybrid skillset. Unlike traditional design disciplines, where work may be more predictable, UX operates within ambiguity. Products evolve, business goals shift, and user feedback challenges initial assumptions. A strong UX education program must teach students to make mistakes, learn from usability testing, accept stakeholder feedback, etc. and then iterate, pivot, and refine their work based on real-world constraints rather than aiming for perfection on the first attempt or completing a project based on a classroom timeline. Teaching students to embrace iteration and adaptability will better prepare them for the realities of professional UX practice.

BUILDING A SUSTAINABLE MODEL FOR UX EDUCATION

If UX education is to remain relevant, it must break away from outdated academic models that focus too narrowly on design artifacts and theoretical research. Through experiential learning, developing hybrid skill sets, and integrating real-world practices, we can create a sustainable, impactful UX education framework that equips students to enter and thrive in the field. This approach ensures that graduates are critical thinkers, effective collaborators, and strategic problem-solvers; preparing them for the realities of professional UX work, navigating business constraints, working with technical teams, and continuously advocating for users in a fast-moving digital landscape.

The future of UX education depends on its ability to evolve. By rethinking UX education now, we can build a new generation of UX professionals who are prepared for real-world challenges and ready to drive meaningful impact in the industry.

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