

# Shaping UX Academia-Industry Alignment: A Strategic Partnership Through an Industrial Advisory Board

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Industrial Advisory Boards (IABs) are a common practice in academic programs, but little is known about the role of IABs in User Experience (UX) university programs as a model of partnership between UX industry and academia. In this paper, we address this gap by outlining the key areas of collaboration between an emerging undergraduate UX program and its IAB. We argue that in the absence of industry-wide UX competencies, academic curriculum standards and an accreditation body, an IAB can serve as a valuable partner and resource to help UX programs curate and validate their curricular, determine educational demands for UX professionals, and build bridges between UX industry and academia. We hope that the critical activities and lessons learned through our experiences and strategic relationship can trigger further discussions in HCI and UX educational communities about the role of IABs in the UX educational programs. And, by forming this type of strategic partnership both parties involved—industry and academia—will reap the benefits of this collaboration and contribute to shaping the field of UX.

CCS CONCEPTS • Human Computer Interaction • Collaborative Learning • Education

**Additional Keywords and Phrases:** HCI education, user experience, curriculum design, industrial advisory board

## 1 INTRODUCTION AND PROBLEM STATEMENT

We are witnessing an explosion of UX educational and training offerings ranging from certificate and bootcamp programs to undergraduate and graduate university degrees [3, 6, 10, 23]. Yet, UX degree-granting programs are facing the challenge of offering curricula that are relevant in the rapidly evolving field of UX [4, 13, 17, 18, 26]. The problem of nascent UX pedagogy and curriculum design is impeded by the multidisciplinary body of UX knowledge [14, 15, 28], a long-standing gap between research and practice [3], and the lack of standardized curriculum and UX competencies [5, 8, 18, 27, 28]. Complicating the issue is the confusion between the terms HCI and UX in design education. Both terms are often used interchangeably, although HCI pedagogy has been actively discussed significantly longer than UX pedagogy [9, 12, 24].

The absence of a shared conceptual framework and disciplinary boundaries is accompanied by significant gaps in understanding of “the cognitive profile” of both a UX practitioner and educator [1]. Although UX has become a recognized industry term, newly established UX academic programs continue to operate in a vacuum when it comes to curriculum design. As UX remains a “concept without consensus” [20], and formal UX education continues to lag behind UX industry [2, 19, 28], several studies highlight the critical task of bridging the industry-academia divide in UX education and emphasize the value of collaboration between UX practitioners, academics, and students [2, 7, 8, 14, 15, 16]. Taken together, these challenges present significant obstacles for UX academic programs in curriculum design and innovation, and even more so in the marketing and recruiting efforts of UX programs. Given

these circumstances, how can UX academic programs calibrate their curricular and ensure that their graduates meet industry expectations?

A partnership with an Industrial Advisory Board (IAB) has long been considered a viable model of collaboration between academia and industry [21, 22], especially in providing expertise and support in curriculum development [25, 26]. While the importance of an IAB input seems obvious, there is a conspicuous absence of literature exploring the role of IABs in HCI and UX academic programs. In this paper, we address this gap by outlining the key areas of collaboration between an emerging UX undergraduate program and its IAB. We argue that in the absence of industry wide UX competencies, academic curriculum standards, and an accreditation body, an IAB can serve as a valuable partner and resource to help UX programs curate and validate their curricular, determine educational demands for UX professionals, and build bridges between UX industry and academia.

## 2 BOARD FORMATION

The User Experience program at the Milwaukee School of Engineering (MSOE) was formed in 2016 under the name of User Experience and Communication Design (UXCD) to replace what used to be for almost 30 years a Technical Communication (TC) program.

The journey of establishing an IAB for the new program began with the program director Nadya Shalamova, a co-author of this paper, surveying other program directors and IAB chairs at MSOE about the purpose and logistics of their boards. From there, she conducted a literature review on archetypes and best practices of board formation and management in academic programs [e.g., 21, 22, 26]. Equipped with this knowledge, Nadya started contacting and recruiting new board members. She focused her efforts on program alumni, local companies and UX professional meetups. Fortunately, her initial recruiting efforts were successful. She was able to assemble the first prototype of the board consisting of a small group of local UX and TC professionals. As the group began to meet, it became clear that it needed to hold a formal election to nominate and vote for a board chair. Amii LaPointe, a co-author of this paper and one of the first UX professionals Nadya recruited, was elected the new chair. Amii joined the group as a tenured UX professional with experience as a practitioner and leader. She brought a strong network of UX experts and a passion to advance UX education.

As a new chair, Amii's first order of business was to think strategically about the composition of the new board. Coordinating the recruitment process with the existing board volunteers and program faculty, Amii continued to expand the board's representation and expertise. Her goal was to include UX professionals whose roles mirrored the landscape of UX industry (designer, researcher, information architect, strategy and leadership, etc.). Additionally, Amii worked to include regional, national, and international representation along with considering industry verticals (financial, retail, consulting, etc.) and environment (corporate, startup, etc.). The recast board accelerated the design of the new UX program and served as a constant sounding board to guide program decisions. Rob and Michael, the other co-authors of this paper, joined the program in 2017 and have been instrumental in helping define the program curriculum, student learning outcomes, and program strategy.

Today, the board consists of the board chair, eleven industry members, two UX students, one UX faculty member, the UX program director, and the program's department head. Our goal is to provide opportunities to all program stakeholders to share their unique experiences and insights based on their role within the board. And, for this reason, we invite all program faculty and students to audit board meetings if they are interested in hearing the board's discussions.

As the board makeup and work continued to evolve, its value proposition changed. The original vision of the board was to help guide the program on such strategic topics as making a case to MSOE's administration about the feasibility of the program, its alignment with the university mission and vision, defining key UX competencies and outlining the program curriculum. Gradually, the board's value proposition evolved into providing mentorship to program students on career-related tasks, contributing to the program branding, establishing the program mission, vision, and values, and refining student learning outcomes. These contributions to the program development are

especially notable because there is no monetary requirement to be a member of the board. Rather the gift of time is expected and outlined in the board's bylaws, which were created and approved by the board. The bylaws can be viewed on the program website.

### **3 COLLABORATION CONTEXT AND TOUCHPOINTS**

#### **3.1 Forming a Dialog: Establishing Program Identity**

One of the first conversations with the newly formed UXCD IAB was further solidifying and establishing the program name. The conversation started with a suggestion from the IAB members to drop CD to clarify the focus of the program and provide tighter guardrails for future curriculum development. Based on these numerous discussions about the program's name, the IAB voted to drop Communication Design (CD) in 2019. This decision formalized the program's focus on User Experience.

Today, we continue to debate the name of our program because the field of UX encompasses a wide range of skillsets and expertise forcing us take a deep dive into what we are called broadly and narrowly. Through this constant exploration of the program name, we are working to further understand the field of UX by defining the edges of the discipline. We believe this conversation will continue for the foreseeable future and remain an area we are constantly testing and validating in partnership with our IAB.

#### **3.2 Collaborating on Curriculum Design**

The IAB has played a crucial role in guiding the program through the creation of the initial curriculum and its subsequent, multiple iterations of program competencies, courses, and student learning outcomes (SLOs). Before any semblance of a curriculum emerged, we conducted extensive research on UX graduate and undergraduate programs in the United States, a thorough literature review of HCI literature, and an exhaustive investigation of UX job descriptions. Our research yielded rich data but also revealed the absence of a unified framework for UX education and the multifaceted nature of the UX professional landscape.

A review of several critical publications on HCI education published prior to the launch of our program 2016 [4, 7, 8, 9, 11, 13, 16, 20, 28] reinforced our findings. When it came to curriculum planning, we were faced with elusive targets and no clear path to follow. Gray et al. [10] describe a similar "monumental challenge" of starting an undergraduate UX program at Purdue University in 2015. Similar to Gray et al.'s painstaking experience, we also started our curriculum planning at ground zero. In addition, we were faced with a tight timeline—ten months—to develop the program and take it through a multi-step university approval process.

To help us move forward with the curriculum design, we brought our research findings to the IAB and began validating conclusions drawn from our research. First on our list was validating an extensive list of competencies generated through our research. Naturally, we were interested in the IAB members' perspective on the core UX competencies and skills. Specifically, though, our goal with this conversation was to understand the IAB's perspective on what constitutes an "ideal" UX candidate and to build a shared understanding of a UX professional's core competencies. We conducted several meetings with the IAB members, where we used three questions to guide our conversations:

1. What UX-specific skill set must all UX professionals have to be successful in our field?
2. If you were to build a UX professional persona, what are their primary and secondary goals and traits?
3. What is a UX professional persona's tagline, elevator pitch (i.e., quote)?

These conversations inevitably lead to discussions about how we measure the success of our new curriculum. These success discussions posed some challenges along the way because in academia we measure curriculum success through Student Learning Outcomes (SLOs); however, SLOs are not commonplace in industry. Initially, we

underestimated the time it would take to educate the IAB on SLOs, which caused some frustration because we could never seem to get past the “what are SLOs?” conversation. After several failed discussions, we realized the need to translate SLOs to industry-focused terminology. We found that Key Performance Indicators (KPI) resonated well with the board and equipped us with the common terminology needed to normalize our SLO discussions. Ultimately, through multiple ideation sessions and iterations of competencies which included success measures, we were able to arrive to eight major competency categories and then mapped more granular competencies into those major categories. A list of eight major competency categories gave us the framework we needed to define our SLOs.

Once we had our competencies and SLOs defined, we invited IAB members and other stakeholders to help put together the first draft of our curriculum. This invitation included an iterative post-it notes prototyping activity in the office of our UX program director. Figure 1 captures this collaborative activity between a UX faculty and an IAB member. The activity proved to be engaging for everyone and allowed us to further articulate a broad spectrum of ideas by fully integrating IAB members into our curriculum design process. Furthermore, the activity helped us determine four key themes that provided a framework to work within for each academic year: *Foundations of UX, Designing the Experience, Research and Insights, and Professionalism*.



Figure 1: Collaborative course sequencing post it activity with UX faculty and IAB member

Additionally, our discussion of the key UX competencies and skillsets brought up conversations about software and tools UX students should learn. The IAB became instrumental in helping us identify core industry tools and subscriptions, which then provided us with the support needed to justify licenses for high-cost software (e.g., Adobe Creative Cloud, Sketch, Figma) for all UX majors.

In the end, we went through six iterations of the curriculum track (and three boxes of sticky notes) to get to our final program curriculum (launched initially Fall of 2016) and has since been refined with the help of our IAB and relaunched in Fall 2019. Table 1 summarizes the results of our most recent collaborative work on the key competencies, skill sets, and software tools between the program and IAB.

Table 1: Revised UX competencies, SLOs, software tools mapped into general course topic sequence

Theme by Year and Competency Breakdown				
<b>Competency Category:</b> <i>Student Learning Outcome</i>	<b>Freshman:</b> <i>Foundations of UX</i>	<b>Sophomore:</b> <i>Designing the Experience</i>	<b>Junior:</b> <i>Research and Insights</i>	<b>Senior:</b> <i>Professionalism</i>
<b>Human-Centered Design Strategies and Frameworks</b> <i>Identify and employ inclusive, human-centered design and other appropriate methodologies to create innovative products and services.</i>	Cognitive psychology Wireframing and prototyping  Socio-cultural awareness	Behavioral design Design thinking Inclusive design Service design	Agile Offline experiences	All competencies and SLOs are embedded in UX portfolio and Senior Design
<b>Design Principles and Applications:</b> <i>Explain and effectively apply visual, user interface, voice, and data visualization design principles.</i>	Sketching Visual design Wireframing Prototyping	User interface design Interaction design Design systems Information architecture	Design for AR, VR, XR Voice design Video production	
<b>Research and Analysis:</b> <i>Analyze user needs to synthesize data and conduct user research.</i>	Personas Usability		Qualitative and quantitative research UX research methods (card sorting, tree jacking, etc.) Data visualization Data analytics	
<b>Front-end Development:</b> <i>Demonstrate proficiency in core front-end and contemporary technologies.</i>		Foundations of engineering design Back-end and front-end development (Java, JavaScript, HTML, CSS)	Algorithms and SEO	
<b>Ethics of Technology</b> <i>Exercise professional integrity by evaluating and applying ethical standards of UX and contemporary technology.</i>	Design ethics Dark patterns		Ethics of AI People and automation Social robotics	Cyber security
<b>Collaboration and Team Management</b> <i>Navigate team dynamics and collaborate effectively.</i>		Team dynamics Collaboration on cross-functional teams	Agile	UX strategy and evangelizing
<b>Communication</b> <i>Exhibit proficiency in oral, written, interpersonal, and visual communication.</i>	Rhetorical awareness Interpersonal communication	Project communication UX writing Content management	Client presentations	
<b>Software and Tools</b> <i>Select and use appropriate professional software and tools.</i>	Adobe Photoshop, Illustrator, Microsoft Office Suite/Google Suite Website builders (e.g. WordPress, Weebly, Webflow) Mural, Balsamiq	Adobe XD, Axure, Figma, Sketch, IA tools (Screaming Frog, OptimalWorkshop), Acrobat DC Pro, Trello	Qualtrics, Madcap Flare, SolidWorks, Tableau, Google Analytics	All software

### **3.3 Keeping the Pulse on Industry: A Collaborative Lecture Series**

At the beginning of the 2020-2021 academic year, the UX program and IAB worked in collaboration with our local UX Meetup group, BrewCity UX, to organize and host our first Experience Design Lecture Series. Through this partnership, we established virtual monthly presentations marketed to our university's students, faculty, and staff along with the local UX community (although we have had national and international attendees) and general public. Each presentation is a one-two hour interactive Zoom meeting that focuses on special topics in UX (e.g., Extended Reality (XR), sketching, information modeling, accessible design, startups, etc.). IAB members self-selected topics based on their expertise, recent work, and areas of interest. These self-selected topics are important because they help us understand what is happening in industry. We have also found alignment of the topics with classroom discussions, allowing students to see real-life applications of the theoretical class discussions and course projects.

Our lecture series has inadvertently created a continuous feedback loop on the field of UX. Lecture registration, attendance, recorded playback numbers help us gauge topic interest. Participant questions during virtual presentations help us understand points of clarification on the topic and areas that may need deeper exploration. Finally, each lecture series presentation has offered a wealth of just-in-time resources, such as articles, standards, books, etc., for faculty, students, and attendees to pull from and immediately apply to their work. For example, during one lecture series presentations, our IAB member introduced attendees to the newly released W3C XR Accessibility User Requirements, which highlighted the novelty of XR in product development, the emerging standards, and pointed to the gaps we have an opportunity to fill in our curriculum.

On the surface, the lecture series may seem like an activity of building relationships with our local UX community and marketing our program (which it is), but we also found that it helps keep a pulse on the rapidly changing field of UX. The strength of the lectures series is not just the topics presented, but partnership with industry and an ongoing conversation within the larger UX community around us.

### **3.4 Providing Authentic, Career-Focused Mentoring to Students**

Another area where we realized the benefits of industry partnership is through our senior-level Digital Portfolio class where students focus on creating and refining their professional portfolios, honing their personal brand, and work on their hiring etiquette. To support this class, our IAB developed a formal Mentor and Portfolio Committee, which is a volunteer-based subset of the larger IAB. The purpose of this special committee is to help UX students in our program prepare for the workforce through year-long (or longer) mentorship.

To kick off the student-mentor relationship, students are required to conduct an interview with their assigned mentor to break the ice, understand their mentor's background, their UX career path, and learn about what they look for in a potential hire's portfolio. Ultimately, this mentorship helps students build their personal brand and portfolio, and network through regular touchpoints. Additionally, IAB mentorship offers students personalized career counseling and advice on what is needed in industry right now. On the flip side of this relationship, the benefit to IAB members is a sense of being able to guide and shape the future UX workforce and find fresh, new talent.

## **4 COLLABORATION CONSIDERATIONS AND TAKEAWAYS**

The partnership between the UX program and IAB has proven to be mutually rewarding. From the program perspective, the benefits of the collaboration include, but are not limited to, a better articulation of the program identity, curriculum improvements and creation of opportunities for students to connect to the industry professionals. More importantly, the IAB's feedback has proven to be invaluable in validating UX professional benchmarks, course sequencing, research and design methodologies, tools. Overall, the IAB's guidance has significantly shortened the time of the initial curriculum design and its subsequent revisions. From the IAB perspective, the partnership with the UX program allowed its members to exercise UX citizenship and shape the future UX workforce and the field. Both sides of the partnerships have been continuously educating each other about the different expectations, terminology, practices, processes, and realities of their workplace.

While our partnership has proven to be mutually beneficial, it has revealed several important considerations. The following lessons were realized through the writing of this paper and many deep and enjoyable conversations between the authors, uncovering additional opportunities for academia and industry to engage with one another.

- **Acknowledging the differences between academia and industry:** Our collaboration experience has highlighted the challenge of aligning UX industry realities with the realities of the classroom because industry and academia work at different paces, have different priorities, and use terminology. We learned that to make collaboration between a UX program and an IAB work, it is essential that each party assumes half the responsibility of working together, and, in turn, each party gains something from the relationship. It is academia's responsibility to listen to the needs of industry and produce high-quality UX talent. It is industry's responsibility to share their frontline experiences and look at the academic program through the lens of industry. Only by building this bridge of mutual understanding and responsibility, industry gains the ability to shape the pipeline of talent graduating from UX programs, and academia gains higher placement of graduates who are more prepared for their first job. Furthermore, to make the partnership successful, both sides need to keep an open mind to the differing motivations, allocations of time, and commitments UX academics and professionals may have. As we reflect on the last four-years of building our program in partnership with the IAB, we recognize that the success of our collaboration has been determined by balancing the different cadences of academia and industry (such as calendars and priorities) and acknowledging our differences to create a virtuous and continuous feedback loop.
- **Casting the board with the right members:** While there are several factors that determine the success of an IAB, finding the right IAB membership mix is paramount to strategically aligning UX academic programs with industry pipeline needs. We have learned that the committee should reflect the composition of the UX industry (i.e., small companies, big companies, diversity of UX jobs, etc.) and members should be invested in advancing the field of UX. The casting of a new IAB, or recasting of historical boards, should also be guided by concrete goals that align with the existing and future strategy of the UX program. Finally, finding a proactive leader, with a broad network and strong knowledge of the field of UX is integral to the success of partnership between the program and IAB.
- **Keeping communication channels flexible and open:** Another critical factor that has contributed to our partnership lies in maintaining open, candid, and authentic communication with board members to encourage sharing while fostering connectivity to the program and the larger UX community. During our partnership, we have held many formal, informal, and ad hoc meetings (facilitated in person and virtually) to maintain a framework for regular touchpoints with members. And thanks to digital collaboration spaces we have been able to continue our conversations, which keeps the board connected between meeting intervals.
- **Carving out time to build meaningful relationships:** Finally, an IAB does not happen without dedicating time to make it happen. When you remove monetary requirements (which also pose issues of international currency conversions), time is the only universal value or constraint that affects everyone the same. It takes time from everyone on the IAB, and we all have a finite amount of time.

We hope that our experience can provide the impetus to chart the way forward for UX academia and industry to come together and solidify the core UX competencies, curriculum benchmarks, and to define frameworks for short-term and long-term collaboration trajectories leading to shaping and defining the field of UX.

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