5. Using Student-Experience Mapping in Academic Programs: Two Case Studies

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Abstract: This chapter examines two examples of cases where my colleagues and I used user experience (UX) mapping to improve students' academic experiences. The first case discusses a graduate seminar in which students followed a seven-phase process model to produce a user experience map that enabled their client, the School of Architecture, to completely redesign the school's website to meet prospective architecture student needs. The first case exemplifies ways that courses in our technical and professional communication (TPC) programs can have students utilize UX principles with academic clients. The second case involves faculty using journey mapping as a means to examine and critique the design of an entire curriculum. This case describes how faculty in a professional communication master's program met weekly over the course of a semester in 2002 in order to create a journey map of graduate students' progress through the curriculum. This journey mapping exercise demonstrates how faculty made several key decisions about gaps in the curriculum where students needed new courses in order to help them prepare for their capstone experience, and provided the scaffolding for second semester courses like Visual Communication, allowing the faculty to focus on visual communication theories rather than the tools needed to produce visual communication projects. The exercise also led faculty to reduce the number of required "core" courses to give students more flexibility in developing specialty areas. Finally, creating the journey map also resulted in a "Timeline Handout," which faculty used as an aid for advising that our annual program evaluations actually contributed significantly to more students graduating on time. Ultimately, the goal of this chapter is to demonstrate that the kind of research that goes into UX mapping enables programs to make informed, data-driven curricular decisions based on student advocacy.

Keywords: journey mapping, user experience mapping, service learning, persona design

Key Takeaways:

- Going through the process of creating UX maps enables faculty to think like "student advocates."
- The research needed to create UX maps leads to data-driven, student-oriented curricular decisions.

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- UX mapping can follow a rigorous seven-step process, but a "guerilla approach" can also be used to produce impactful results.

Back in the early 1990s, when usability was just beginning to have an impact on technical communication practice in industry and on technical and professional communication (TPC) pedagogy in academe, one of the ways nascent usability professionals like myself sought to both justify and define our roles on product development teams was as the "user advocate." The user, we argued, needed the same advocacy in the decision-making process on a development team as stakeholders such as product support, marketing, manufacturing, engineering, and management. If we allowed functionality and content alone to drive the development of our products, and if we continued to ignore the key role that the user's voice had to play as "co-developer" in a product's design, then we deserved the "feature creep," "bloatware," and "technologies in search of a problem/customer" which had plagued product design throughout the previous decade. In their work on institutional change, James Porter et al. (2000) described how Mary Dieli, the first usability manager at Microsoft Corporation, made similar arguments during this period in order to change Microsoft's institutional culture, "establishing users and user testing as a more integral part of the software development process in a company that is the world's leading developer of operating system software (Windows), Internet web browsers, and business software generally" (p. 611). Porter et al. held that Dieli's work as a user advocate was the type of "rhetorical action" which serves "as the means by which institutions can be changed" and expressed hope "that institutions can be sensitized to users, people, systemically from within and that this sensitizing can potentially change the way an entire industry perceives its relationship to the public" (p. 611).

Ironically, despite the fact that we were extremely successful in making the case for user advocacy in mainstream product design, and in spite of the fact that it's a pretty short journey from "user advocate" to "student advocate," our use of UX design principles in the creation of services and instructional materials intended for students has lagged behind mainstream industry practices, as the editors of this book have observed. Indeed, Aimée Knight et al.'s (2009) "About Face: Mapping Our Institutional Presence," which examined 150 academic program websites, found that "student subjectivities" were missing. The authors concluded that "Many of the program websites make students invisible" (p. 194). Consequently, in this chapter, I examine two examples of cases where my colleagues, students, and I used both a formal and an informal form of user experience mapping to improve the students' academic experiences through the inclusion of students' voices in the design of websites and curricula for academic programs. *Ultimately, my goal in this chapter is to demonstrate that the kind of research that goes into UX mapping enables programs to make curricular decisions based on student advocacy.* I hope to show that the map itself is, in reality, just a byproduct and it's experiencing the process of creating the map(s) which has the greatest value.

Before I describe the case studies, I should explain that my favorite definition of UX mapping comes from Alice Walker's (2018) *UX Collective* blog entry, "User Experience Mapping for Dummies." Walker explains that "*A user experience map* shows the users' needs, expectations, wants, and potential route to reach a particular goal. It's like a behavioral blueprint that defines how your customer may interact with your product or service" (n.p., emphasis added). Figure 5.5 provides an example of a UX map, and for those teaching undergraduate courses who are looking for books with lots of examples, some to consider include Peter Szabo's (2017) *User Experience Mapping* or Jim Tincher and Nicole Newton's (2019) *How Hard Is It to Be Your Customer? Using Journey Mapping to Drive Customer Focused Change*. For my graduate seminar, I chose to use Jim Kalbach's (2016) famous "grizzly bear book," *Mapping Experiences: A Complete Guide to Creating Value through Journeys, Blueprints, and Diagrams.* But for those seeking a quick, high-level overview of what UX mapping entails and how it differs from similar mapping techniques, I would recommend Sarah Gibbons' (2017) "UX Mapping Methods Compared: A Cheat Sheet." Gibbons is Nielsen Norman Group's Chief Designer, and she provides a high-level overview and visual examples of the four commonly used types of mapping in industry: 1) empathy mapping, 2) customer journey mapping, 3) user experience mapping, and 4) service blueprinting. Gibbons also offers a more recent (2019) introduction to the evolution of UX mapping by tracing its origins from Edward Tolman's (1948) work on the "cognitive maps" of rats working through mazes in the 1940s to Tony Buzan's (1974/2010) popularization of the term "mind mapping" to Joseph Novak's (1984) use of concept mapping in the 1970s. Gibbons (2017) shows that cognitive mapping, mind mapping, and concept mapping "are three different ways of visualizing a [user's] mental model" and "are three powerful visual-mapping strategies for organizing, communicating, and retaining knowledge" (n.p.). And in the same way that UX maps serve as "a behavioral blueprint" (Walker, 2018), these early precursors to the UX maps "help us lay out complex ideas, processes, and recognize patterns and relationships" (Gibbons, 2019, n.p.).

In the first case examined in this chapter, I describe a full-blown, semester-long project where graduate students used formal user experience research methods to help the School of Architecture redesign its website. Because of the depth and complexity involved, the discussion of this case will take up the bulk of this chapter. However, while the second case study I discuss is shorter because it involves an informal and far less complex case, I offer the second case as a sort of "discount" user experience mapping exercise which faculty can easily use to examine and describe their curriculum. The second case is less complicated, but the return on investment for our graduate program was significant. As one of the blind, external reviewers of this chapter put it, the "guerilla testing" which went into the second case demonstrates that "the kind of research that goes into UX mapping is especially helpful in allowing programs to make data-based and student-oriented design decisions rather than the anecdote-based

and turf-oriented decisions that we so frequently make instead." Ultimately, in discussing both cases, I will make the case that user experience mapping is an indispensable tool for academic professionals, whether they're looking to attract prospective students or to provide an outstanding user experience for the students they already have.

Case Study One: Redesigning the School of Architecture Website

This first case involves a graduate seminar in which students from the M.A. in Professional Communication (MAPC) program followed a formal, seven-phase process to produce a user experience map which enabled their client, the School of Architecture, to completely redesign the school's website to meet prospective architecture student needs. The course the graduate students were taking was a usability testing and user experience design (UUX) seminar, and their first client-based project for the course involved conducting a needs assessment. Subsequent client projects involved using think-aloud protocol analyses; however, in this first project, the goal was to conduct a needs assessment study which would provide a real client with an understanding of the tasks, goals, and attitudes of the users the client was seeking to serve.

Our client for this needs assessment was the School of Architecture. In 2017, the manager of the College of Architecture, Arts, and Humanities (CAAH) website, the Director of the School of Architecture, and the WebCurator responsible for the Architecture site approached me for assistance because previously in 2009, a team of MAPC graduate students and I had used persona design methods to create the design templates for the original CAAH website. In that project—which can still be seen at http://media.clemson.edu/caah/caah_mockups/index.html—we used surveys, interviews, and Google Analytics data to create 12 different personas of users of the CAAH website (Howard, 2009). Next, based on the understanding of the goals and tasks each user persona revealed, the team created static mock-ups of webpages designed specifically for each persona. The mock-ups were then aggregated and became the template used for the college's content management system, which the School of Architecture and the other ten departments in the college used for their sites.

That original 2009 persona design approach and the research on which it had been based were considered so successful that, eight years later for their redesign, the School of Architecture and the webmaster for the college approached me once again to collect more detailed data on users not just of the whole CAAH website, as had been done in 2009, but more specifically, on prospective students for Architecture's graduate and undergraduate degree programs. As a result, the School of Architecture became the client for the professional communication graduate students who were taking my seminar on usability and UX design.

Figure 5.1 is the introduction to one of the seminar's final recommendation reports; it overviews the problem the graduate student team sought to address, the research questions they pursued, and the UX methods they used to resolve it. The excerpt in Figure 5.1 was from the report written by Valerie Smith, Ciara Marshall, & Lauren Eubanks, who worked on the prospective undergraduate demographic segment for their final report.

Introduction:

The School of Architecture wants to redesign the undergraduate program portion of their website; however, they feel they need a better understanding of prospective undergraduate architecture students' needs to improve the user experience and meet user goals for the undergraduate programs section of the website.

Therefore, the purpose of this study was to examine the needs and goals of prospective undergraduate architecture students and provide a persona and a user experience map to highlight the prospective students' needs.

The persona shows demographic information about the user (prospective undergraduate Architecture students) along with what the user's needs, motivations, and expectations are for the Clemson School of Architecture's undergraduate programs website, including the tasks the user wants to perform.

The user experience map illustrates prospective students' interactions – their wants, needs, actions, expectations, and overall experience – with the School of Architecture website. Touchpoints are identified in the user experience map, showing the sequence and location of interactions between the prospective undergraduate student user and the School of Architecture website.

In this needs assessment, we sought to answer the following research questions:

1. What tasks do users (prospective undergraduate students) want to perform when searching for information about undergraduate Architecture programs? What are the needs of the users, and how do they interact with the website?
2. How can the School of Architecture improve their website to best fit the needs of the users and enhance the user experience?

Figure 5.1. Excerpt from student recommendation report by Valerie Smith, Ciara Marshall, and Lauren Eubanks.

In order to prepare students for this work—and. in fact, before they had even met with our clients from the School of Architecture and produced the introduction above—we first read and discussed several key texts from the usability and UX research and design literature. One of my pedagogical goals was to impress on the students that UX maps come *at the end* of a long, rigorous research process. Both my industry clients and my students want to jump right in and start creating maps, so I wanted them to recognize that maps are the result of scaffolding; i.e., maps can't be created without first creating personas, and personas can't be created without data resulting from triangulated empirical inquiries. So first, because I knew the students would need to familiarize themselves with the Architecture website and because I wanted them to begin thinking about the kinds of usability metrics which would need to be considered in the site's redesign, I had them read about heuristic analysis as an approach to UX data collection. Initially, they read Jakob Nielsen's classic 1994 piece "Heuristic Evaluation," in which Nielson describes his ten characteristics for evaluating software (and websites) and how the ten characteristics were developed from a factor analysis of 249 previous research studies. Then, in order to help them better understand the application of Nielsen's ten factors to modern websites, they read SaiChandan Duggirala's (2016) excellent blog entry which provides a thorough exemplification of how to apply Nielsen's heuristic analysis to websites. Finally, in order to show students how they could consider creating visuals of their heuristic analyses, students reviewed excerpts from *Homepage Usability: 50 Websites Deconstructed* by Jakob Nielsen and Marie Tahir (2001).

Next, to prepare students for the personas they would need to create, they began by reading the "People, People, People" chapter in Janice Redish's (2012) *Letting Go of the Words*. They reviewed the personas developed for the original CAAH website[1] and they read selected excerpts from John Pruitt and Tamara Adlin's (2006) *The Persona Lifecycle: Keeping People in Mind Throughout Product Design*. Students were also introduced to Xtensio.com and shown how they could edit the templates found there in order to interactively create personas of different types of Architecture website users. In 2017, when we were working for the School of Architecture and at the time of this writing, Xtensio.com was a site which worked on the "Freemium" model. The site allowed users to create free persona designs from a wide variety of templates and then charged additional monthly fees for "premium" services, such as removing Xtensio's branding from exported files, the number of personas which can be created, removing limitations on the size of image files which can be used in the personas, a collaborative workspace for teams, etc. (Xtensio, n.d.). Even if students decided to build their personas in programs like Photoshop, Illustrator, or InDesign, an examination of Xtensio's templates was a useful exercise in having them examine the types of information they can include in a persona and how to display that information most effectively.

1. CAAH website: http://media.clemson.edu/caah/caah_mockups/index.html

Finally, the last reading which prepared students for the project was Jim Kalbach's (2016) famous "grizzly bear" book, *Mapping Experiences: A Complete Guide to Creating Value through Journeys, Blueprints, and Diagrams*. Students read Chapters 1-5, where Kalbach describes how to conduct the empirical research necessary to create UX maps, and they read Chapters 10 and 11, which describe and illustrate "Customer Journey Maps" and "Experience Maps."

Once they were armed with the theoretical and research tools they needed to complete the needs assessment for our client, the students followed seven phases in order to create the UX maps. The phases were the following:

1. Meet with clients to define the problem.
2. Complete a heuristic analysis of the School of Architecture's website using Nielsen's "10 Usability Heuristics."
3. Use Google Analytics to compile data on browser use, geographic location, length of time spent on pages, and unique page views and examine demographics about all students in Clemson's undergraduate and graduate architecture programs provided by the School of Architecture and by the Office of Institutional Research.
4. Interview a representative sample of Architecture student participants based on the demographics provided from Phase 3.
5. Create a persona based on the information and data collected from interviews.
6. Develop a user experience map laying out the journey of a user and identifying common themes and "touchpoints" of prospective students' experiences as they use the School of Architecture's website.
7. Provide recommendations for redesigning the site by using the UX map to identify strengths, weaknesses, and opportunities for improvement (SWOT).

After we met with the client and obtained data from them on the types of academic programs they offered and the demographics of students in the programs, the class divided into three teams working on the project. Because we learned that the numbers of international students in the undergraduate degree were low and weren't as high a recruiting priority as they were for the graduate programs, we decided to organize as follows: 1) one team for prospective undergraduates, 2) one team for domestic graduate students, and 3) one team for international graduate students.

An important point to note here is that the teams were *not* organized around the personas they would ultimately create. Instead, each of the teams would need to decide, *based on the data they collected*, whether they would need more than one persona to represent their program area. For example, would there need to be personas for in-state versus out-of-state domestic students, and would the graduate student teams need different personas for the two-year degree programs versus the three-year degree option? Would the international graduate students need

different personas for different countries or regions of the world? At this point in the process, we couldn't answer these questions since we had only met with the director of the school, the school's senior administrative assistant, and the WebCurator for the Architecture website. And while these individuals certainly knew their programs well and could describe their curricula and the application processes prospective students used, they couldn't provide us with statistical data and hard empirical evidence which would enable us to make informed decisions about how many personas would be needed in order to represent the demographics for each of the respective program areas. Thus, in order to avoid premature closure and to ensure that our personas and journey maps were data-driven rather than client-driven, we chose to defer decisions about how many personas each team would make.

As I mentioned previously, our next step was for each team member to conduct a heuristic evaluation of the existing Architecture website in order to familiarize themselves with the site so that they could begin developing questions for interviews with users. Students also worked with the administrative assistant to collect data about the demographics of applicants to the program, and with the WebCurator to obtain data from Google Analytics about which pages were the most popular, where users came from, bounce rates, etc. Finally, the students worked with the Office of Institutional Research to obtain data about the Architecture programs which wasn't immediately accessible to the Administrative Assistant. For example, the team working on international graduate students learned that, in recent years, the program accepted 46 students in total (including 43 from China, 2 from India, and 1 from Iran) out of 107 international applicants. As a result, that team decided to interview at least ten percent of the entering class (i.e., 6-8 students) in order to develop a representative sample of incoming international students. Furthermore, they sought participants who had only been in the program for a single semester and who were students from China, India, and Iran.

It should be noted at this point that we knew we weren't collecting our data from the ideal user groups for the site. In an ideal world, we would have been able to show the existing website to *prospective* students and then interview them; however, since we lacked any funding to travel to international sites and since no means of identifying potential students for the site existed, we were limited to collecting data from students who had already used the website and who had already chosen to accept their admission into the program. We were unable to collect information from potential applicants who chose not to apply to the program or applicants from countries like Germany, Italy, or other parts of the world whose data didn't appear in Google Analytics. We could not, therefore, provide our client with information about why individuals in those countries didn't discover and view the site, and we couldn't collect data on why individuals chose not to pursue an application to the program. However, we were able to provide data on which geographical locations were generating applicants, we could col-

lect data on what were "decision triggers" for successful applicants, and (because we limited our interviews to students who had only just completed the application process) we were able to collect data on what difficulties and concerns the applicants encountered during their use of the website. So even though our data wasn't based on an ideal sample of prospective students, we were able to collect useful data for our clients.

In Figure 5.2, the type of data provided by Google Analytics shows one of the ways students on the international student team were able to collect data on which countries were generating the highest number of new visitors to the site ("New Users"), the highest numbers of repeat visitors ("Users" and "Sessions"), how many pages users viewed during each session ("Pages/Session), how long the sessions lasted ("Avg. Session Duration"), and the percentage of visits where users abandoned the website from the landing page without browsing any further ("Bounce Rate").

Primary Dimension: Country City Continent Sub Continent

Secondary dimension

Country	Acquisition			Behavior		
	Users ↓	New Users	Sessions	Bounce Rate	Pages / Session	Avg. Session Duration
	16,530 % of Total: 100.00% (16,530)	9,020 % of Total: 100.00% (9,020)	23,704 % of Total: 100.00% (23,704)	53.19% Avg for View: 53.19% (0.00%)	2.91 Avg for View: 2.91 (0.00%)	00:02:26 Avg for View: 00:02:26 (0.00%)
1. United States	14,797 (89.04%)	7,534 (83.53%)	21,466 (90.56%)	52.32%	2.95	00:02:26
2. India	240 (1.44%)	194 (2.15%)	310 (1.31%)	51.61%	3.36	00:03:56
3. Canada	146 (0.88%)	126 (1.40%)	181 (0.76%)	58.01%	2.13	00:02:02
4. United Kingdom	126 (0.76%)	112 (1.24%)	134 (0.57%)	70.15%	1.96	00:01:11
5. China	91 (0.55%)	54 (0.60%)	155 (0.65%)	44.52%	3.05	00:05:24
6. Italy	85 (0.51%)	64 (0.71%)	104 (0.44%)	53.85%	3.22	00:02:16
7. Germany	67 (0.40%)	58 (0.64%)	69 (0.29%)	63.77%	1.67	00:01:37
8. Philippines	58 (0.35%)	57 (0.63%)	65 (0.27%)	75.38%	1.71	00:01:07
9. Australia	54 (0.32%)	47 (0.52%)	56 (0.24%)	60.71%	2.38	00:01:21
10. (not set)	53 (0.32%)	34 (0.38%)	70 (0.30%)	67.14%	2.16	00:02:54

Figure 5.2. Partial screen capture of Google Analytics report on users' countries on the site.

Students on the other two teams were also able to obtain the same data for domestic users of the site; however, their data was broken down by state in the US and then by city. And students on all three teams were able to correlate these data with the demographic information we had collected from the Office of Institutional Research and the administrative assistant about actual admissions. In terms of the international graduate student team, we knew, for example, the program accepted 46 students in total (including 43 from China, 2 from India, and 1 from Iran) out of 107 international applicants, and this information correlated well with the fact that users from China had the lowest bounce rate at 44.52 percent, visited the highest number of pages at 3.05, and spent the most time on the site at 5:04 minutes. Conversely, no Philippine students had been admitted in that past year, and Google Analytics showed that users from the Philippines had the highest bounce rate, the second lowest number of pages per session, and lowest time on site. Thus, while we

were able to collect information from newly admitted Chinese students about their experiences as prospects, we couldn't provide our clients with information about what prospects from the Philippines (and Germany) did or did not see on the landing page which may have kept them on the site longer. We could only say that those users had been on the site briefly and left quickly.

Google Analytics also provided us with similar data about user demographics which many internet users don't realize they are providing to the owners of webservers. We were able to collect data on users' age, gender, and interests from Google Analytics, as Figure 5.3 illustrates. As Jonathan Ellins (2017) explains on the blog entry "Google Analytics Demographic Data on Age, Gender and Interests," approximately 67 percent of the traffic which goes through a site provides data on personal factors like users' age and gender. These data are primarily collected from Google accounts which users might have used such as YouTube, Gmail, Google Drive, and of course, the Chrome browser itself; however, a significant amount of the data are also collected from "third-party DoubleClick cookies (user tracking cookies)" which provide a detailed record of users' browsing history (Ellins, 2017, n.p.). These data sources allow Google Analytics to create seven different types of standard reports. As the online help for Google Analytics states,

> Seven standard reports are available:
> - **Demographics Overview**: The distribution of Sessions (or other key metrics) on your property by age group and gender. Sessions is the default key metric. You can also use % New Sessions, Avg. Session Duration, Bounce Rate, or Pages per Session.
> - **Age**: Acquisition, Behavior, and Conversions metrics broken down by age group. When you drill into an age group, you see the breakdown by gender, then by interest. Ages below 18 are not included in the data.
> - **Gender**: Acquisition, Behavior, and Conversions metrics broken down by gender. When you drill into a gender, you see the breakdown by age group, then by interest.
> - **Interests Overview**: The distribution of Sessions (or other key metrics) on your property by the top-10 interests in Affinity Categories, In-Market Segments, and Other Categories.
> - **Affinity Categories (reach)**: Acquisition, Behavior, and Conversions metrics broken down by Affinity Categories.
> - **In-Market Segments:** Acquisition, Behavior, and Conversions metrics broken down by In-Market Segments.
> - **Other Categories**: Acquisition, Behavior, and Conversions metrics broken down by Other Categories. (Google, 2019)

Even though they only represent approximately 67 percent of the users, data like those detailed above can be correlated with the admissions data we received from the Architecture School's administrative assistant in order to help the students make informed decisions about details to include in their personas. For ex-

ample, Figure 5.3 shows that there was very little difference in the browsing behaviors and bounce rates between males and females, but the fact that 52.67 percent of the sessions were with females gave a slight edge toward choosing a female persona.

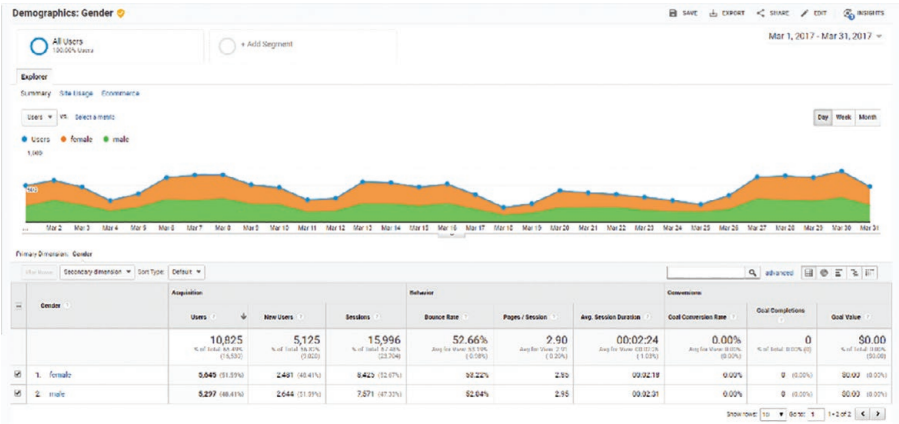

Figure 5.3. Partial screen capture of Google Analytics report on gender.

Armed with information from Google Analytics about topics like which pages on the website were producing the highest bounce rate for users from, say, Charleston, South Carlina, or Beijing, China, each of the three teams developed their own set of interview procedures based on the particular and contingent needs of their user groups. However, because all our interviews requested users to engage in retrospection, we asked them to use the website during the interview in order to prompt them, to stimulate their memories, and to guide their recollection of issues both pro and con which they found on the site. In other words, we used a version of the "Stimulated Retrospective Think-Aloud Method" in which Judy Ramey's team of graduate students at the University of Washington showed that "the logical inference and strategy explanation information in people's verbalization also provide valid information about users' task performance" (Guan et al., 2006, p. 1261). We also asked them to overview the steps they followed as they went through the application process to better help us understand the phases we needed to show on the experience maps we were creating. Figure 5.4 shows an example of a persona which was developed by the international graduate student team using a modified version of Xtensio's "Software Developer Persona" template.

In modifying the template to meet their needs, Nidhi and Doris primarily chose to enhance information collected during their interviews which would help the Architecture website design team make informed decisions about content to include and privilege in the site. For example, the original template included sections on favorite "Brands" that the persona followed (i.e., brands like Nike, Apple, and Nestlé), but Nidhi and Doris reasoned that it was more important to their client to know that the majority of the international students they had interviewed were more interested in the three-year program track in the architecture school

than they were in the two-year track. Indeed, in our early meetings with our clients, they told us that they were attempting to decide if they needed to redesign the website so that there was a whole section of the site dedicated to the two-year track and another to the three-year (the current site combined information for both programs on the same pages). Thus, rather than providing information that said that the persona's favorite candy was Nestlé's Butterfinger, the students chose to replace the brand portion of the basic template with information about the "Key Attributes" their interviews revealed about important information (like the reputation of the program) which helped the students decide to apply for the program.

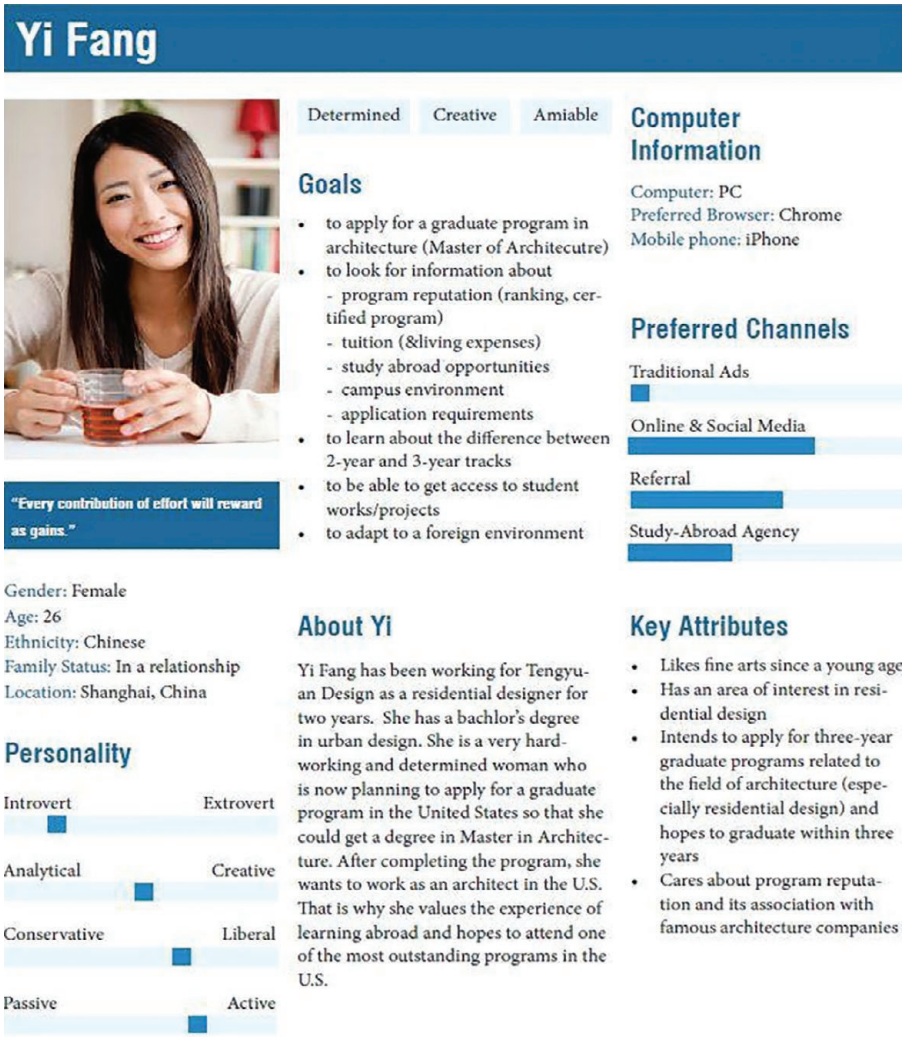

Figure 5.4. Sample persona for an international graduate student by Nidhi Verma and Doris Xue Ding.

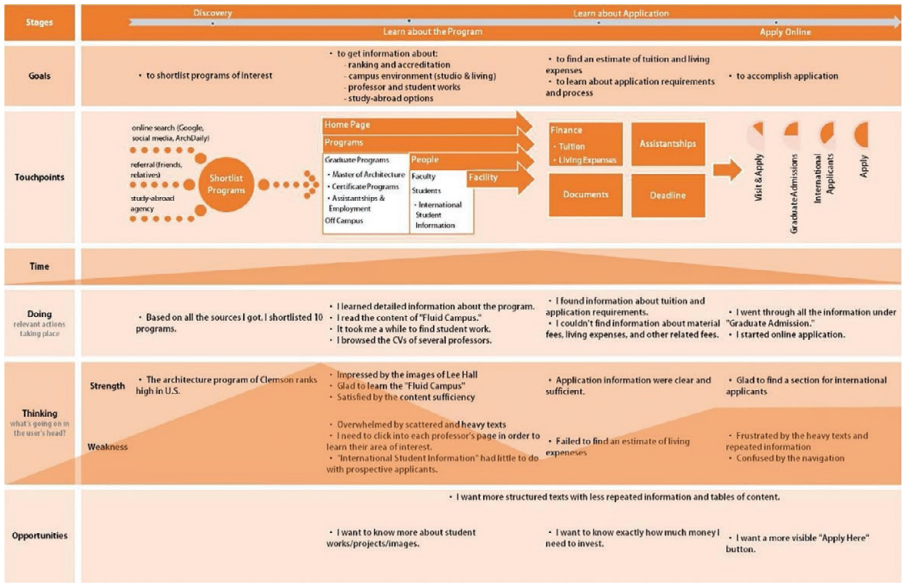

Figure 5.5. Sample user experience map for international graduate students by Nidhi Verma & Doris Xue Ding.

Once the personas had been created using the demographic information collected from the interviews and other sources, the teams then created their experience maps. At this point, students were ready to use their readings from Kalbach's (2016) *Mapping Experiences* book to decide how best to visually display all the empirical data they had collected. Figure 5.5 is an example of a UX map produced by the team working on international graduate students in architecture.

Along the top of the map are the "Stages," or major events that the users experienced during the application process. Next are the goals the users indicated they had at each stage in the process. The information here is of value for the redesign of the website because it shows that users are seeking content such as the program's ranking, accreditation, cost of living, study abroad programs, etc. The third line of the map provides the "touchpoints." Touchpoints are defined as any way a customer or user can interact with a business, service, website, etc. Basically, it's any time that a user "touches" the product being mapped. In this particular case, the team chose to map all of the items of the website which the users chose to touch at each of the phases in the map. The fourth line of the map shows the amount of time users spend at each phase. In this case, the map shows that users spend the most time learning about the program and how to complete an application. The "Doing" line explains what the users were doing with the website at each phase. It's worth noting here that the students chose to use actual first-person quotes from their interviews for these entries in order to help reinforce to our clients that the user experience map is capturing the voice of the user. The

"Thinking" line of the map is interesting because it attempts to map the strengths and weaknesses found at each phase based on the data collected during the interviews. It shows that users were pleased when they were seeking basic information about the program, such as ranking, travel abroad opportunities (i.e., the "fluid campus"), and descriptions of the academic programs; however, the users were frustrated by the lack of information about how to actually apply for admission, cost of living expenses, and other topics. And finally, on the "Opportunities" line, the team tracked recommendations users made for ways that the WebCurator could improve the website. In other words, we used the user experience maps to provide the client with a kind of visual SWOT analysis.

Taken together, the five personas from all three teams combined with three user experience maps (one for domestic undergraduates, one for domestic graduate students, and one for international graduate students) collectively gave our clients a clear and thorough understanding of the needs that required attention in the redesign of the School of Architecture's website. It would be well beyond the scope of this chapter to detail all of the changes that the director, WebCurator, and their colleagues made to the site; however, the experience map in Figure 5.6 illustrates just a few of the topics addressed.

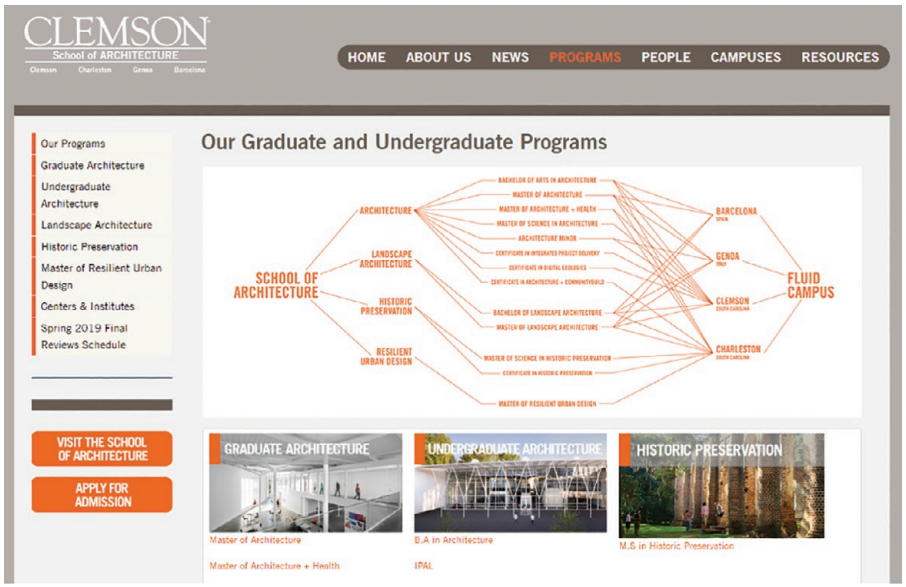

Figure 5.6. Sample user experience map for international graduate students.

The experience map contained complaints about the "text-heavy" nature of the website. This was something all the teams found and was addressed by the use of visuals shown in Figure 5.6. The map also called for a "more visible 'Apply Here' button," which figures prominently in the redesign. It called for more information about student projects, which is addressed under the links for "News,"

"Undergraduate Architecture," and, most particularly, under the "People" link. Also, to address the concerns about living expenses and costs, on the "Campus" page, the line "For information about Application, Placement, Housing, Visas and Tuition please visit our Fluid Campus program information page" is centered and highlighted on the bottom of the page to make it easier for users to find that information. These are just a few examples of the hundreds of changes that went into the redesign of the site, changes which were at least in part informed by the detailed information our clients received about their users' needs.

Case Study Two: Mapping a Graduate Curriculum

Program directors of technical and professional communication (TPC) programs would almost certainly benefit from the same sort of formal needs assessment study produced by the graduate students for the School of Architecture in the first case study. However, without students having completed the work as a client-based project for a course, few of us who direct TPC programs could assemble the resources needed to conduct such a study. Consequently, unlike the first case, which provides a model for ways that courses in our TPC programs can have students use UX principles with academic clients, the second case I will discuss involves faculty using a simplified form of journey mapping as a means to examine and critique the design of an entire curriculum. In this "guerilla approach" to journey mapping, I will discuss how the entire faculty in our M.A. in Professional Communication (MAPC) program met weekly over the course of a semester in 2002 in order to create a journey map of graduate students' progress through the curriculum.

In the interest of full disclosure, however, I should say that the MAPC faculty didn't set out to create a journey map originally. The fact that we created any sort of map could probably be best described as "a happy accident," and thus, unlike the very formal and complex process I described in the first case study, the process here was decidedly informal, and the problem we were trying to solve was much less complex. Instead, the problem we were originally trying to tackle was how to make sure that all the MAPC faculty had access to the same advising information needed to help students choose between completing the degree in either the traditional two-year sequence (i.e., four semesters) or the more challenging one-and-a-half-year sequence (or three semesters). Each year, as the graduate program director, I conducted focus group meetings with all of the students in the program as part of our annual program evaluation, and one topic which kept recurring was students' concerns about differences in advising information from the faculty. Since all of the MAPC faculty were engaged in advising, we wanted to ensure that they were all able to provide a fairly consistent advising experience for the students.

So in January of 2002, we began to investigate the advising experiences of both the faculty and the students. We began by conducting what, today, we would call

a "content audit" and surveyed and compiled all of the advising handbooks, webpages, and materials available for both students and faculty. Not surprisingly, we found that the information was "all there" and available; however, it was scattered across a variety of sources and not compiled in a user-friendly format. For example, key dates for creating a thesis committee; completing a thesis; submitting the thesis to the committee members; defending the thesis; meeting the Graduate School's formatting requirements for a thesis; submitting the signed forms showing that the candidate had met all the program, department, and college requirements for the degree; submitting forms applying for a diploma; and many other documents were scattered across the MAPC program's handbook, different pages on the Graduate School's website, the program's website, and even the university bookstore's website. Additionally, we discovered that key information about common practices in the program, such as when core courses required for graduation would be offered, was known to faculty because they had to staff the courses; however, students weren't always aware of these routine practices. The students didn't know, for example, that the Research Methodologies seminar was only taught in the fall semester and wasn't repeated again in the spring. This meant that students who missed the class in the fall would get their curriculum out of sequence and missed important concepts they were expected to know in subsequent courses.

In order to address some of these concerns, someone on the MAPC Committee suggested that we could really use an "advising calendar." This suggestion was well received, and the committee decided that it would begin creating a calendar that faculty could use to know when to meet with students during a semester and what topics to discuss with their advisees. And, in fact, we did actually create an advising calendar; however, it evolved into a "tickle file" (i.e., an automated calendaring tool that reminds you of key dates when events should happen or when content should be distributed). Ultimately, the program director used the tickle file to send out email reminders to faculty letting them know about timely advising information. Additionally, the exercise resulted in the creation of an advising sheet we named the "Timeline Handout," which is shown in the appendix. More importantly than the tickle file and Timeline Handout, however, is that the committee began looking at what information students needed in order to graduate successfully, beginning with their orientation to the program upon admission through to their graduation. In effect, they began to consider what students were doing and, more critically, what they *ought* to be doing at specific points throughout their academic experience.

We began the process by mapping out the semesters in an Excel spreadsheet. Once we created these events, we began mapping out the major "touchpoints" in the curriculum, focusing at first on the core courses and elective courses in the curriculum, and then later adding other types of information we felt students needed to know or activities they needed to be working on outside of their classroom experiences. This resulted in the very simple spreadsheet table shown in Table 5.1.

Table 5.1. Curriculum Touchpoints

First Semester	Second Semester
Required courses?	Required courses?
Elective courses?	Elective courses?
Grad School / Dept. Forms which are due?	Grad School / Dept. Forms which are due?
Thesis/Project Committee activity?	Thesis/Project Committee activity?
Other activity students should be doing?	Other activity students should be doing?

At this point, in the experience mapping exercise, faculty made several key decisions about gaps in the curriculum where students needed new courses in order to help them prepare for their capstone experiences. For example, during our discussions about required courses, we realized that students needed better technological scaffolding in their first semester in order to prepare them for second semester courses like Visual Communication. Rather than having to cover the technological tools needed to produce visual communication projects, faculty wanted to focus on visual communication theories and concepts in the second semester course. Consequently, we introduced a new seminar called "Digital Rhetorics Across Media" that students would take in their first semester in order to prepare them for work with tools like Photoshop, InDesign, Audition, and Premiere. The Digital Rhetorics course also prepared students for structured authoring and coding in XHTML and CSS so that they could create the final web-based portfolios needed for graduation.

The mapping exercise also led faculty to reduce the number of required "core" courses from five to four to give students more flexibility in the number of "cognate" courses they could take. The faculty wanted the students to be able to build a cognate, or specialist area, on top of the strong foundation in technical and professional communication that the core courses provided. We wanted students to be able to develop expertise in areas such as UX design, health communication, technical editing, rhetoric and composition, science writing, digital publishing, and social media authoring. Developing a cognate area in any of these areas would require that students take at least three, and preferably four, courses in their chosen area. Taking a single class, such as the Usability Testing and UX Design seminar I described in the first case, didn't really allow students to demonstrate "expertise" in the area. They needed more coursework. However, until the faculty engaged in this mapping exercise, we didn't realize that students were often unable to take three courses in a cognate area because of the demands of the five core courses: two required thesis research courses and at least one course required for students to obtain graduate teaching assistantships. We knew from our annual program evaluations that a significant number of students were actually taking 36 credit hours rather than the 30 required for graduation and they were taking an extra semester to graduate; however, it took this mapping exercise to demonstrate *for the whole faculty*

that it was our core course requirements which failed to provide students with the flexibility they needed to develop their cognate areas. In other words, it took the mapping exercise to convince the faculty to make the painful decision to drop core TPC courses in favor of cognate courses. The mapping exercise turned faculty who had been advocates for their own privileged core course topics into student advocates.

Finally, as was mentioned previously, creating the experience map also resulted in a "Timeline Handout," which appears in the appendix. Prior to the Timeline Handout, students weren't really considering topics for their theses or putting their thesis committees together until late in their third semester, and, as a result, many were missing the deadlines for graduation in their fourth semester. Mapping out what students needed to be doing above and beyond the courses they were taking each semester enabled faculty to do a much more effective job advising students. Because students had the timeline, they approached faculty much earlier in the process about how to put together a committee, how to select a thesis topic, how to start their job search, and forms that were required before graduation. Because faculty didn't have "to run students down" in order to provide this information, faculty were able to provide such high quality advising that our annual program evaluations showed a significant improvement in more students graduating on time. We experienced a 30 percent increase in the number of students graduating on time the year after we started using the Timeline Handout.

Conclusion

I began this chapter by observing that it's a pretty short journey from "user advocate" to "student advocate." As I hope this chapter has shown, our use of UX design principles in the creation of services and instructional materials intended for students can have a dramatic impact on our students' experiences in our programs. The two cases discussed in this chapter show that user experience mapping can improve students' academic experiences, and is well worth the effort, regardless of whether one decides to invest in a formal, full-blown needs assessment program as the School of Architecture chose to do in the first case, or whether one chooses an informal, guerilla style mapping exercise like the one outlined in the second case study. Both formal and informal forms of user experience mapping improve students' academic experiences through the inclusion of students' voices in the design of websites and curricula for academic programs. Beyond the fact that serving as a student advocate is simply the right thing to do as an ethical and professional program administrator, the consequences for recruiting new prospective students, for meeting the advising and information needs of current students, for building a clear understanding among faculty of student experiences in the curriculum so that they can make informed decisions about program changes—all of these are just a few of the

reasons that user experience mapping of academic programs will yield a significant return on their investment.

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Appendix: The Timeline Handout

Typical Timeline for the Thesis Option Over Four Semesters

(created 2/25/02; revised 7/1/03)

The timeline below outlines a **conventional** path that a student might follow. The actual path a student will follow can vary dramatically, and students should always seek advising in order to address individual needs. Note that, to be considered "full status," students should enroll in 9 credit hours per semester.

Fall Semester, First Year	
ENGL 851	This is one of the 5 core courses and is only offered in the Fall.
ENGL 852	This is one of the 5 core courses and is only offered in the Fall.
ENGL 853 or COMM 664	Students have the option of choosing one of these since ENGL 853 is offered in both the Spring and Fall semesters. Students also have the option of choosing either COMM 664 or ENGL 856.
Spring Advising	Before enrolling for the Spring/Summer, students should seek out their academic advisors for assistance in choosing the non-core courses.
Spring Semester, First Year	
ENGL 850	This is one of the 5 core courses and is only offered in the Spring.
ENGL 856 or 853	Students who chose COMM 664 in the Fall will need to take ENGL 853 here. Students who chose 853 in the Fall will take 856. ENGL 856 is only offered in the Spring.
Approved non-core course	See "Spring Advising" above.
Fall Advising	Before enrolling for the Fall, students should seek out their academic advisors for assistance in choosing the non-core courses.
Consult faculty members about potential thesis topics.	This should occur sometime near the end of the semester and before many faculty leave for the summer.
First Summer, First Year	
Approved non-core course	See "Spring Advising" above.
Begin writing thesis proposal.	Start reading the literature on thesis topic and begin thinking about possible members for the thesis committee. Begin drafting thesis proposal. See MAPC Handbook for proposal format.
Second Summer, First Year	
Foreign language requirement	Usually, the Language Dept. offers intensive language courses this semester. See MAPC Handbook or advisor for alternative ways to meet the language requirement.

Fall Semester. Second Year	
File GS2.	See MAPC Program Director for assistance and signatures. Check Graduate School's deadlines for filing GS2 forms.
One approved non-core course	See "Fall Advising" above.
ENGL 891	These are thesis research hours.
Submit thesis proposal to full committee.	This should occur at the beginning of the semester.
Thesis proposal approved. File Thesis/ Project Committee Request Form with MAPC Program Director.	This needs to be approved 1-2 weeks after the beginning of the semester.
Begin working on the thesis.	Set up regular meetings with the thesis committee chair to review draft chapters.
File GS4 with Graduate School.	GS4 forms are available in E-106 Martin. Check Graduate School's deadlines for filing GS4 forms.
Spring Semester, Second Year	
ENGL 891	These are thesis research hours.
Meeting with committee chair	Usually weekly or bi-weekly.
Schedule oral exam.	Once oral exam has been scheduled with committee members, the MAPC Program Director needs to be notified of the date, time, and location for the exam.
Complete thesis.	The thesis is normally completed around the middle of the semester.
Take oral exam. File MAPC Oral Report Form and signed GS7 form with the MAPC Program Director.	Usually before April 15; however, check the Graduate School's deadline for taking oral or written exams.
Submit final thesis to committee for defense.	Give unbound copies of the thesis to committee members at least one week prior to the scheduled defense date.
Defend thesis.	This should be done at least one week prior to the Graduate School deadline for taking the oral or written exams.
Notification of successful defense.	The committee chair must notify the MAPC Program Director that the thesis has been successfully defended at least one day prior to the Graduate School deadline for taking the oral or written exams. The Program Director will file the GS7 form with the Graduate School.

Obtain thesis format approval from the Graduate School.	This cannot take place until after the thesis has been successfully defended. Check the Graduate School's deadline for completing this step.
Submit duplicated copies of the approved thesis to the Graduate School.	Check the Graduate School's deadline for completing this step.