

Building a Cross-Cultural UX Design Dual Degree

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User Experience (UX) design has expanded rapidly across a range of industry and educational contexts in the last decade. While the core knowledge and “center” of UX is still emergent and contested, new educational programs to train the next generation of UX designers have begun to outline pedagogical practices and concepts that have relevance to the present and future of UX as a discipline. In this paper, we take a broad view of UX preparation, building on a case study of a global dual degree partnership between programs in the United States and China. We recount our individual experiences of building new programs in UX at the undergraduate and graduate levels, and the process of mapping our curricula to offer a bidirectional dual degree program that launched in 2019.

Keywords: *UX; cross-cultural design education; studio education*

1 Emerging Global UX Practices

User Experience (UX) design has quickly emerged as a catalyst for innovation and strategy in a range of industry contexts, building on both historic visual, product, and service design strengths and business interest in design-first approaches to product management. Jobs relating to UX have also increased dramatically in the past two decades (Getto & Beecher, 2016), demonstrating a market demand for designers with cross-cutting skillsets in research, development, and strategy.

However, two forces have complicated this rise in UX work—an uneven landscape to prepare students for UX careers and an unresolved and contested understanding of what UX *is* or *should be*. First, in relation to educational programs that build student competence, few programs have been constructed specifically with UX as a particular lens or philosophy of design in mind (Vorvoreanu et al., 2017). Many existing design programs in visual communication or industrial design have been retooled to bring in coursework relating to research and strategy, but few programs have been constructed (or re-constructed) with these elements of human-centred work at their core. Therefore, existing programs often spend more time on design fundamentals consistent with the

Bauhaus tradition as compared to research-driven approaches which lead students to gain insights from users that have emerged in the human-computer interaction (HCI) tradition (Faiola, 2007). Few programs embrace design *thinking* and design *doing* together, such as Stanford’s innovation course, which adopts problem-based learning with global collaboration (Liu et al., 2020). Second, the landscape of UX competence is ill-defined and even contested, with many different disciplinary perspectives, norms, and skills being bundled in different ways, under different job titles, and within different industry orientations. This is most profoundly evident in relation to what is considered “core” UX knowledge. Kou and Gray (2019) note, “the UX vocabulary is bound to change over time, as new disciplinary alliances take hold and others atrophy or change in character.” This temporal change is also reflected to differing degrees in survey work done on the nature of UX practice undertaken by Law et al. (2008) and Lallemand et al. (2015), and through a symposium on research-practice connections relating to UX and human-computer interaction (Reeves et al., 2018).

2 Constructing an Educational Footprint for UX

In each of our respective programs, we laid the groundwork for degree programs in contexts where there was no traditional art or design presence. In the United States, the program was situated in a technology-focused college, and in China, the program was situated in a school of psychology. These unique organizational foundations allowed us to identify what elements of UX practices in industry we wished to support, which academic perspectives we wanted to highlight, and how we wished for these industry and academic commitments to shape current and future student outcomes. Each program represents a novel educational approach to UX education, but at different educational levels. In the United States, undergraduate UX education is rare while graduate programs with a focus on HCI, information science, or related fields are abundant. The challenge in building an undergraduate presence was to identify the core skills and knowledge needed for students’ success without relying upon undergraduate training in another discipline. In China, both undergraduate and graduate training in UX is rare. The challenge here was to encourage students to analyse and solve problems, cultivate students’ independent thinking ability, and build skills in research, while leveraging a diverse range of undergraduate training. Even though the programs were offered at two different academic degree levels, there was a large amount of overlap in key knowledge, skills, and professional practices.

In the United States program, we adopted a studio model of instruction, building an *integrated studio* that intentionally brought together perspectives from traditional design disciplines, psychology, anthropology, and science and technology studies (STS) using an overarching collaborative project-based curriculum to build students’ competence in UX. Studio pedagogy is an ideal approach to help students reflect on their learning, engage in productive team work, and develop lifelong learning skills in ways that represent a bridge into their future professional practice (Brandt et al., 2013; Fitzgerald et.al, 2020) . Rather than distinguishing core knowledge as courses or modules, we instead used a spiral approach to encourage student development over time, with each studio built to address as broad a range of topics relevant to UX as possible. As students reach upper-level studios, they have opportunities both to deepen their competence in key aspects of UX knowledge, while also mentoring and supporting the experiences of more junior students in the program. These project-based studios were augmented with robust industry experiences conducted

in vertically-integrated teams, which allowed flexibility to work with both US and international partners on projects (Parsons et al., 2020).

In the China program, we closely collaborate with both national and international innovation companies. We focus on user, context, emotion, interaction, technology, and human factors, through practicing innovation design thinking. We promote UX research and explore how psychology, design, technology, and business can integrate. Our overarching aim is to support the design and development of new products, services, and systems in the conceptual design phase by developing innovative methods and techniques, fostering user-centred designers, and leading multi-disciplinary projects. Our main research and education directions include innovation and entrepreneurship education, design psychology and human factors, user research, tangible and embodied interaction design, usability evaluation, and NeuroDesignScience.

Each program includes a focus on project-based learning that shapes students' way of thinking, but the programs vary based on differing cultural norms. In U.S., there is an emphasis both on reading and discussing primary literature and the gradual acquisition of core design skills. In China, the program includes more group homework than individual homework and fewer requirements for reading and written documentation. Students will attend interviews hosted by two programs and select several motivated and qualified students to join the dual degree program.

3 Building a Cross-Cultural UX Design Partnership

Multiple years of work were required to plan and execute this partnership and build the necessary institutional partnerships. Initial conversations by video call began in May 2017, followed by the signing of an institutional level memorandum of understanding in Fall 2017. In March 2018 a delegation from the United States travelled to China to develop curriculum mappings. A delegation from China visited the United States in April 2018 and November 2018. US faculty taught a course in China in August 2018, July 2019, and July 2020 (virtually).

To build a resilient and mutually supportive partnership, we had to navigate complexity relating to both cultural and disciplinary norms. We also had to confront different disciplinary norms, reflecting different levels of adoption of UX and differing levels of maturity of the discipline that manifest in different packages of competencies and different job titles. Our different placements within the university—the US program based in a technology-focused college and the China program based in a first-ranked psychology college—also impacted the course structure and dominant disciplinary perspectives.

Some challenges that we confronted when building a dual degree footprint included a lack of aligned academic terms and language competencies. Perhaps most importantly, the United States program team did not have skills in speaking Mandarin, and the China program was in the process of adapting their coursework to be taught in English to open experiences to students from other universities through exchange or dual degree. In addition, the different holiday schedules (Spring Festival in the Chinese schedule and Winter holidays in the US schedule) resulted in misaligned Spring terms, which presented a challenge for intercultural group work and alignment of degree requirements for dual degree candidates. We also had to work out how students funded these dual degrees, ultimately building the program such that students who are “exchanged” (i.e., an equal number of students from each country are participating) pay fees and tuition to their home institution, but students who

are participating outside of this balance pay fees and tuition to their destination institution. Finally, we sought to address a range of cultural and pedagogical norms that related to engagement in studio-focused design work and active learning pedagogies. These challenges were overcome through regular communication and the building of lasting professional friendships among the instructors, visits to our respective institutions, and the commitment of staff at our respective international affairs and globalization offices that supported our efforts.

While there were numerous challenges we had to face, there were also a number of fortuitous opportunities that supported our eventual success. Most helpful was a highly aligned set of academic requirements which made the alignment of both programs to support dual degree students straightforward. Our independent degree programs—while including different ways of managing credit hours—had the same overall number of required credits, and the inclusion of psychology-focused coursework aligned well with a required minor area of emphasis in the United States program (see Figure 1 for a visual representation of course credit mapping). In addition, our similar commitments to project-based learning and studio-based pedagogies provided us with a solid and shared foundation through which to communicate and collaborate.

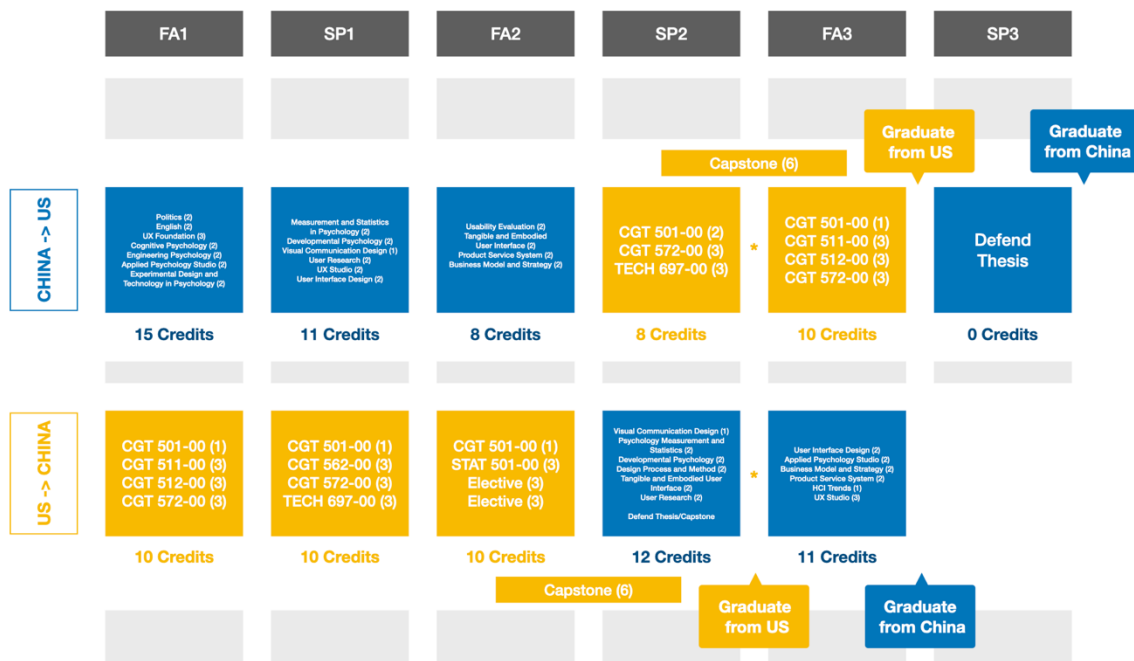


Figure 1. The dual degree mapping to ensure students completed degree requirements for each institution.

4 Feedback from Teaching Teams

The two program teams have maintained regular collaboration via course teaching, online meetings or forums, competitions, and study abroad trips. The China program has invited a teaching team from the United States to teach a course in Tangible Embodied Interaction each July, maintaining continuity and allowing our programs to become equipped with similar foundational UX knowledge that helps to build student competence.

From a teaching perspective, this ongoing collaboration is also an umbrella through which we can deeply discuss teaching techniques, tools, and methods. Through sharing these mutual design course experiences and working with each other as partners, we can develop better courses for our students. Our similar curricular structures and project-based learning modes have facilitated these collaborations and allow us to introduce state-of-art topics into the courses. However, we also have differences, due to the dominant cultural norms in our two countries. Students in China are less eager to share their ideas and raise questions during class and prefer to ask questions after class. Therefore, it takes more effort to encourage and engage them during class. Students in the United States respond more naturally to active learning approaches but tend to privilege collaborative work and thus do not always build appropriate levels of independence and self-regulation. As we encourage dual degree students to spend time in these intercultural environments, we will continue to find similarities and differences in classroom cultures.

5 Feedback from Students

Students are essential stakeholders in this cross-cultural collaboration, as they are the “end-users” of the dual degree program and they bridge the two programs. Their experiences help us understand the holistic picture of studying, working, and daily life while participating in the program. Likewise, their experiences help guide future students in deciding whether or not to participate. Currently, only one student has taken advantage of this program. From December 2019 through December of 2020, a student from China completed her year in the US program and acquired her Master’s degree from both universities. During this year, she took seven courses and she was also able to work as a research assistant, waiving her fees and tuition to the destination institution in addition to earning a stipend (an unusual opportunity, which is unlikely to be repeated). The experience in the US provided her a new perspective of user experience, in addition to opportunities to experience U.S. culture more closely. In US, the program focused more on reading foundational literature, with a mix of individual and group projects that require extensive documentation, as compared to the Chinese program. Through these contrasting experiences, she was able to get a holistic view of user experience practices both in China and in US. The COVID-19 pandemic introduced plenty of challenges during her stay, and will continue to impact our ability to send dual degree students across the Pacific due to visa issues and different institutional regulations about online teaching.

During the Spring of 2021, we established a remote alternative to study abroad trips to continue linking students from both institutions together. Teams of students from both programs worked together through regular online meetings on a semester-long project. Through a program established by the US institution’s globalization department, the students from both programs were also able to earn an intercultural competency certificate by completing extra-curricular assignments and discussions about intercultural topics, alongside their semester-long project. Students enjoyed the remote collaboration, with one student reflecting on their experience: “It is a valuable chance to understand different cultures without visiting in person. To our surprise, there is no such big difference between two cultures—it is the difference vary of people.” Another student remarked: “This collaboration enhanced my motivation to prepare the TOEFL exam.” Our hope is that these students will be more motivated to join in the dual degree program, now that they have had an opportunity to interact and build intercultural friendships.

6 Future perspectives

The COVID-19 pandemic has temporarily shifted our collaboration to a purely virtual one, including meetings, lectures, and collaborative writing. When the study and embassies go back to normal, we plan to restart face-to-face interactions, such as study abroad trips and courses in the host school. In the next phase of this collaboration, the China program will convert at least one-third of their courses in the curriculum to English, which will provide more opportunities to students from the US institution. These people-to-people exchanges within our programs create new knowledge while also helping us develop our relationship, and these benefits extend to instructor exchanges as well. Teaching teams are the foundation of this collaboration; it is our responsibility to generate more communication which is helpful to break down stereotypes and establish new impressions. Students may hold some concerns which can be addressed. Therefore, they need chances to discover by themselves, not been taught by teachers. Students who visit the other school personally are an asset to the partnership. After visiting, they have vivid experiences and feelings, which are essential references to the following students.

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References

- Brandt, C. B., Cennamo, K., Douglas, S., Vernon, M., McGrath, M., & Reimer, Y. (2013). A theoretical framework for the studio as a learning environment. *International Journal of Technology and Design Education*, 23(2), 329–348. <https://doi.org/10.1007/s10798-011-9181-5>
- Getto, G., & Beecher, F. (2016). 'Toward a Model of UX Education: Training UX Designers Within the Academy', *IEEE Transactions on Professional Communication*, 59(2), pp. 153–164. doi: 10.1109/TPC.2016.2561139
- Kou, Y. and Gray, C. M. (2019) 'A Practice-Led Account of the Conceptual Evolution of UX Knowledge', in Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems. New York, NY USA: ACM (CHI '19), Paper No. 49. doi: 10.1145/3290605.3300279.
- Lallemant, C., Gronier, G. and Koenig, V. (2015) 'User experience: A concept without consensus? Exploring practitioners' perspectives through an international survey', *Computers in human behavior*, 43, pp. 35–48. doi: 10.1016/j.chb.2014.10.048.
- Faiola, A. (2007). The Design Enterprise: Rethinking the HCI Education Paradigm. *Design Issues*, 23(3), 30–45. <https://doi.org/10.1162/desi.2007.23.3.30>
- Fitzgerald, R., Huijser, H., Meth, D., & Neilan, K. (2020). Student-staff partnerships in academic development: the course design studio as a model for sustainable course-wide impact. *International Journal for Academic Development*, 25(2), 134-146.
- Law, E. et al. (2008) 'Towards a shared definition of user experience', in *CHI'08: Proceeding of the twenty-sixth annual CHI conference extended abstracts on Human factors in computing systems*, New York, New York, USA: ACM Press, p. 2395. doi: 10.1145/1358628.1358693.
- Liu, W., Byler, E. & Leifer, L. (2020). Engineering Design Entrepreneurship and Innovation: Transdisciplinary Teaching and Learning in a Global Context. Proceedings of the Conference on Human-Computer Interaction (HCI International). London: Springer-Verlag.
- Reeves, S. et al. (2018) Proceedings of the Nottingham Symposium on Connecting HCI and UX. doi: 10.17639/8vez-c741.

Parsons, P., Rasche, N., Gray, C. M., & Toombs, A. L. (2020). Vertical Integration in UX Design Studios. *EduCHI 2020: A (Virtual) CHI 2020 Symposium*. <https://educhi2020.hcilivingcurriculum.org/wp-content/uploads/2020/04/educhi2020-final49.pdf>

Vorvoreanu, M. et al. (2017) 'Advancing UX Education: A Model for Integrated Studio Pedagogy', in *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*. New York, New York, USA: ACM, pp. 1441–1446. doi: 10.1145/3025453.3025726.