MODELLING USER EXPERIENCE: INTEGRATING USER EXPERIENCE RESEARCH INTO DESIGN EDUCATION

Gülşen Töre Yargin¹, Sedef Sünner¹,² and Aslı Günay¹
1 Middle East Technical University, BILTIR-UTEST Product Usability Unit
Department of Industrial Design, Dumlupınar Bulv. Üniversiteler Mah. No: 1, 06800, Ankara, Turkey
2 TED University, Department of Industrial Design
Ziya Gökalp Caddest No.49 06420, Kolej Çankaya, Ankara, Turkey

ABSTRACT
The last two decades have given a new lease of life to the interpretation of users’ interactions with products in human-computer interaction (HCI) and design domains. As a fast growing field, user experience (UX) brought along multifarious endeavors to frame this new field’s definition and components. In the midst of this burgeoning field, many design related domains started to embrace the terms experience, services, and systems rather than a mere product focus. Academia’s efforts to define what UX really is, influenced the practice by trying to investigate how UX can be put in action. Hence, growing demand from industry created a need for fully trained and specialized UX designers, turning the attention back again to academia. Although one of the most critical components of UX is research to understand users, their interactions, environments, and even the invisible factors; selecting and applying appropriate methods and tools are of high challenge due to concomitant dependence of experiences on subjective perceptions, contextual ties, and timewise conditions. In this light, we have devised a course to be integrated into design education at graduate level with the aim of teaching how to comprehend, interpret, and communicate UX to present input for the design process with a special approach. The particular approach is “modelling UX” because designing for experience and evaluating the success of design output, as well as bethinking scientific improvements and improving the practice, entail investigating experiences with opportune research methods. After delineating background for devising a UX course, this paper dwells on the objectives, content, structure, and outputs of our course; which would be a scaffolding resource for efforts to integrate UX research into design education.

KEYWORDS
User Experience, Design Education, User Research, Modelling Experience

1. INTRODUCTION

For design and HCI disciplines, twenty-first century started with a construction of a new UX paradigm and continued to be replete with studies about the term’s meaning, its constructs, and jointly accepted models. UX rooted in, but diverged from traditional usability concept with the positioning of many novel interactive technologies in everyday life. This has not only widened the scope of emotional concerns of users, but also exposed designers to novel interaction issues (Cockton, 2013; Djajadiningrat et al., 2004). As Jordan (2000) asserted, the traditional focus on mere physical and cognitive aspects of users and instrumental characteristics of interaction started to fall short; and hence, a holistic view towards users’ interaction with products has been adopted, placing a premium on hedonic aspects and encompassing users’ emotions, objectives, expectations, and dreams. In a nutshell, accumulative discussions and frameworks about UX demonstrates that UX involves three main components: users, products/systems, and context in which the interaction occurs; and embraces a broader and more complex social, cultural, economic, and temporal spectrum (e.g. Desmet and Hekkert, 2007; Forlizzi and Battarbee, 2004; Hekkert and Schifferstein, 2008; Karapanos et al., 2009).

Apart from extensive discussions about this new field’s definition and components, escalating numbers of UX related conferences, seminars, workshops, and journals; as well as ascending numbers of members in communities, such as User Experience Professionals Association and The Interaction Design Association (see UXPA, 2018; IxDA, 2004-18) can depict the rapid growth of the interdisciplinary UX field.
The aforementioned disciplinal growth and UX awareness has been accompanied by demand from industry for fully trained and specialized UX designers, which is evident in increased number of UX relevant job postings, hence turned the attention to academia (Getto and Beecher, 2016; Vorvoreanu et al., 2017; White and Kapakos, 2017). UX focused online courses, internship programs, workshops, and camps also address the immediate necessity for practice-ready UX designers; yet a sustained education agenda for UX has not been commonly achieved. Gonzalez et al. (2014) reported that students in design related domains do not feel ready for a career in UX; as education programs aiming to raise UX practitioners are almost unavailable and even most practitioners are self-taught by having been involved in a related job (Getto et al., 2013).

Considering the aforementioned need above, this paper presents a UX course we devised and offered for graduate level industrial design students. Acknowledging the centrality of user experience research (UXR) in UX paradigm, the course has given weight to user research methods and a specific tool we have developed to model UX - User Experience Research Method Matrix (UXMx). To orient readers to the particulars of the course, we first present spearheading examples of curricular adjustments for implementing UX, as well as emerged paradigms for implementing UX in design education. Subsequently, we discuss how an integrated model of UX education would be. After capturing the broad picture about current situation and discussing the integrated model of UX education, we account for centering UXR. Then, exhaustive content is allocated for the explanation of the introduced course - Modelling UX - with its objectives, scope, and outputs.

2. CURRENT PARADIGMS IN UX EDUCATION

Although UX education mostly takes place in extracurricular events, the increasing demand in tech-industry for job-ready UX professionals has impact on curricular adjustments in both undergraduate and graduate level. Academy-industry collaboration is one way to ensure that students gain the skills necessary for UX practice. One of the first undergraduate degrees in UX design was recently offered by Savannah College of Art and Design in the US in collaboration with Google (SCAD, 2018), as others emphasize the importance of introducing students to real-world design problems through apprenticeship models (Getto and Beecher, 2016; Getto et al., 2013), and partnering with external clients in studio projects (MacDonald and Rozaklis; 2017).

It is widely accepted that we should train future UX experts in academy and perhaps establish fully fledged UX programs, yet there are challenges to developing curriculum standards, teaching strategies or models. Firstly, UX theory and practice intersects with a set of knowledge and skills shared by different disciplines. Literature shows recent effort on helping students with varying backgrounds acquire skills associated with designing for UX, like human factors (Gonzalez et al., 2017), HCI (Faiola and Matei, 2010), industrial design (Budd and Wang, 2017), interaction design (Bødker and Klokmose, 2012), and technical communication (Getto and Beecher, 2016). Different disciplines require diverse methods, skills and processes, which are shared by contemporary UX practice. Naturally, the disciplinary approach to aligning curriculum and course content with UX-relevant skills is to introduce methods and tools traditionally attributed to other disciplines. This not only leads to redefinition of the scopes of the disciplines, but also gradual convergence of boundaries. For example, HCI and human factors programs traditionally show affinity towards testing and quantitative measurement, and are advised to acquire a human-centered perspective beyond usability, especially early qualitative user research (Faiola, 2007; Gonzalez et al., 2017; Hanington, 2010). Industrial design and interaction design have traditionally adopted human-centered design principles (Hanington, 2010), but might benefit from integration of digital prototyping skills such as coding and making (Budd and Wang, 2017).

The reverberation of this multidisciplinary landscape makes it difficult to frame standardized skills and methods. Another challenge is the diverse nature of the industry-based UX practice. The UX job market has started to become diversified, as companies are now opening different positions such as UX Design, UX Engineering, UX Research, and UX Writing (Gonzalez et al., 2017). Moreover, in an analysis of the required skills in UX-related job postings, Gonzalez et al. (2014) found inconsistencies between the job titles and required skills. Finally, being a technology-driven field, UX is in a state of flux, and teaching all the tools and skills that would be relevant in the near future is simply not possible (Getto and Beecher, 2016).
Despite challenges, there is evident effort to build strategies for developing theoretically informed curriculum and course content in UX related fields. Existing educational strategies point out to an integrated model with a balanced intersection of theory and application through real-life or simulated project processes (Bødker and Klokmose, 2012; Faiola, 2007; Faiola and Matei, 2010; Getto and Beecher, 2016). The recommended curricular content can be matched with this model as: UX as awareness, skills, and process.

**UX as awareness** refers to the efforts to equip students with UX-related theories and models. Theories dedicated to explain the interaction between the user and the artefact or system, such as Activity Theory (Bødker and Klokmose, 2012) and Norman’s notion of affordances (Faiola and Matei, 2010), are made available in the curriculum in order to familiarize students with the conceptual understanding about the extent of the effect products have on the subjective experience of the user. At graduate level, where UX education mostly takes place, the focus is dominantly on theoretical aspects of the UX rather than practical, although a balance between and integration of the two is recommended (Getto et al., 2013).

**UX as skills** encompasses the breadth of the required tools and techniques to be utilized at different stages of the UX design process. Various skills harbored by the UX practice are proposed to be made explicit in the curriculums, such as interviewing and ethnographic research, prototyping and testing, computing, visual design, oral and written communication, and so on (Budd and Wang, 2017; Gonzalez et al., 2017; Hanington, 2010; Vorvoreanu et al., 2017). While it holds true that industrial practice may demand vast number of skills with no universal standards in job definitions and requirements, specialization started to take place as different UX positions are being made available by the companies (Gonzalez et al., 2017).

**UX as process** points out to the project lifespan, beginning from early user research to empathize with the users, to design ideation, iterative prototyping and usability testing. As Getto et al. (2013) suggest, “A balance between [theory and practice] is necessary, and teaching tools is an opportunity for students to put theory into practice” (p. 67). Hence, going through the steps of a real or simulated UX project is considered to be an opportunity for students to put theory into action in an integrated curriculum (Bødker and Klokmose, 2012; Faiola and Matei, 2010; MacDonald and Rozaklis, 2017; Vorvoreanu et al., 2017).

Given the historical connection of UX to user-centered design, UXR is naturally a central skill embedded in the UX process. UXR has been emerging as a separate expertise as a result of further specialization within professional UX practice, and a recent survey shows that knowledge and experience on research methods are among the most valuable skills according to UX professionals (Gonzalez et al. 2017). Similarly, Churchill et al. (2016) reported that two surveys conducted with students, academics, and industry practitioners show a consistent consensus about the importance of design and empirical research methodologies. User research is usually recommended as a core module of the curriculum, with particular emphasis on qualitative methods to inform the early design phase with user-driven directions, such as ethnography (Faiola, 2007), requirements gathering (Getto et al., 2013), and generative/participatory methods (Hanington, 2010).

In the ever-changing context of the technological landscape and the professional practice within, the importance of the ability to independently plan, conduct, analyze and communicate user research is evident. Thus, within the broader scope of UX education, we focus on UXR and put effort in devising a course to raise awareness and enable students to acquire skills in UXR and experience UXR as a process in accordance with the integrated model of UX education. In the following sections, we present objectives, content, structure and outputs of the course which aims to integrate UXR into design education at graduate level.

3. **A COURSE ON INTEGRATING UXR INTO DESIGN EDUCATION**

3.1 **Objectives and Scope**

To integrate UXR into graduate design education, we adopted the approach of “modelling UX” as a bridge between the phases where user insights are generated and used to design products. Hence, the course focuses on understanding specific experiences and studying them to communicate to the design process through modelling. In scientific terms, modelling is one of the most crucial means for understanding a phenomenon or a theory (Deutsch, 1952). Models are used for abstracting scientific data or concepts in order to analyze, organize, teach, and present (Frigg and Hartmann, 2009); meanwhile allowing to focus on major blocks of the reach topic rather than less significant parts. Correlatively, UX is multidimensional, dynamic, and complex by its nature and making sense out of an experience is essential for developing products and
services relevant to that experience. Hence, investigation of UX through modelling is valuable to discover, comprehend, and convey such a complex paradigm. Our approach to modelling is more qualitative; rather than generating UX measurement models (Law and van Schaik, 2010) our focus is on understanding the holistic experience and underlying paradigms. Such holism requires utilizing qualitative methods, such as interviews and ethnography, and data visualization skills to represent results beyond statistical modelling (Gonzalez et al., 2017).

Effective modelling requires mastery in selecting and applying appropriate research methods. Therefore, within the scope of the course, objectives involved enabling students to raise their awareness towards current concepts in UX, UXR methods, tools and techniques; obtaining skills for researching and modelling UX and conducting UXR in different settings; and acquiring hands on experience in conducting UXR as a process.

3.2 Structure and Content

The fourteen-week course involves several stages, which have been planned for raising awareness and delivering theoretical knowledge about UXR, planning a UXR case, applying the research, analyzing the results and modelling and communicating them by generating user insights. These stages are introduced in this section.

3.2.1 Course Introduction

At the beginning, an introductory meeting is scheduled to present course objectives, scope and content. Students are encouraged to indicate interest areas and choose an experience that can be the topic of their research project in the course. By asking their interest areas, we aim to (1) elevate motivation as the project requires intense work and (2) maintain diversity in subjects dealt with during the course. Such diversity enables variety in the UXR methods applied and allows students to observe how different methods are employed in practice other then they personally experience throughout the course. In this phase, to sensitize students to the topic, they are also lectured on definitions of UX, current approaches in UXR, models and modelling in UX.

3.2.2 State-of-the-art UXR Methods and Introduction of the UXMx

After the introductory phase, an extensive database of UXR methods\(^1\) are briefly presented to demonstrate an exhaustive overview of possibilities in conducting research in this area. To guide students in selecting a method for a specific case, we developed the UXMx tool. It aims to guide method selection process with five major questions to be answered by the researcher (Table 1). These questions refer to the criteria for categorizing UXR methods\(^2\) and such categorizations help the researcher to understand the considerations to choose a method.

<table>
<thead>
<tr>
<th>METHOD SELECTION QUESTIONS</th>
<th>CATEGORIZATION CRITERIA</th>
<th>CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WHY?</strong> What is the purpose of the research?</td>
<td>Categorization according to the phases of the design process</td>
<td>GENERATIVE</td>
</tr>
<tr>
<td><strong>HOW?</strong> Which approaches will be adopted by the researcher?</td>
<td>Categorization according to the way of application</td>
<td>DIRECT</td>
</tr>
<tr>
<td><strong>WHAT?</strong> What kinds of data will be gathered through research?</td>
<td>Categorization according to characteristics of the user information</td>
<td>ATTIT.</td>
</tr>
<tr>
<td><strong>WHY?</strong> What will be the time frame for the research?</td>
<td>Categorization according to time / duration of the study</td>
<td>CROSS-SECTIONAL</td>
</tr>
<tr>
<td><strong>HOW?</strong> Which contexts are appropriate for conducting the research?</td>
<td>Categorization according to the research setting</td>
<td>CONTRIVED</td>
</tr>
</tbody>
</table>

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\(^1\) Around 60 methods, techniques and tools are available in the database. In the paper, these ‘methods, techniques and tools’ are referred to as ‘methods’ for the sake of brevity.

\(^2\) The categorization criteria used in UXMx is an adapted version of the criteria for user research methods presented in Töre Yargn (2013). For an extensive overview of these categorizations see Töre Yargn (2013) and Süner (2018).
After lecturing on method selection criteria and questions, and overviewing database of methods, the UXMx is presented to the students. We plan two different use cases for UXMx to train the students in using it for real practice. The first one involves an assignment for which the students review published work on UXR and locate the utilized methods in the UXMx. To do that, the latest issue of a journal publishing UX studies is assigned to each student. Students are asked to review each individual paper which involves an empirical study with users, and analyze the utilized methods by considering why it is chosen, how it is justified by the researchers, and benefits and drawbacks. After, a workshop is conducted to locate the methods in the UXMx. In this workshop, students are asked to consider their analyses of the published work when locating them on the UXMx and mark the relevant method selection criteria. The objective of this phase is to familiarize the students with methods and the selection criteria, while reviewing recent academic studies in the field.

For the second use, the UXMx is employed as a guide to select the methods for students’ research cases. For each case, together with each student we decide on two methods by considering the selection criteria in the UXMx. As the tutors of the course, we assist the student in the selection process by indicating which criteria should be primarily taken into account considering the practicalities of the research setting and the type of experience that the student would like to explore.

3.2.3 Research Planning

After acquiring knowledge about UXR methods and how they can be selected, students start to plan their own UXR projects. At first, they are asked to conduct a literature review on the assigned methods and discuss their advantages and disadvantages; and then they plan their own studies by considering how the two methods should be devised to complement each other and allow them to understand and model the experience they focus on.

3.2.4 Research Application and Analysis

Followed by the planning stage, students revise their methodology plans based on our feedback and organize pilot studies to test their applicability. At this stage, a lecture is given on practicalities of laboratory and contextual observation and usage of observation equipment in these settings. Afterwards, pilot studies are conducted with representatives from their sample. Following the pilot studies, students are lectured on early stages of qualitative data analysis and data coding; and a coding workshop is scheduled to initiate the analysis process of students’ research projects. In this workshop, students work on transcriptions of pilot studies and develop their preliminary code books which are used in data analysis, as well as when developing their models. For the consecutive few weeks, scheduled critique sessions are organized to supervise and guide the data collection and analysis processes of students.

3.2.5 Research Communication

Towards the end of data collection and analysis phases, a lecture on data displays and visualization is given. The lecture conveys several examples of modelling approaches towards UX as follows: representing activities and works of users, representing the user, representing the concepts and their relations, representing experience over time, and representing design recommendations based on user insights (Table 2). After the lecture, a workshop on data display and visualization is conducted to direct students to choose a modelling approach for their projects and plan their final models. As the outcome of the course, a poster is prepared for each project to communicate the aim, methodology, scope, and the experience model that is developed as the result. First, the draft posters are evaluated by the students in a peer evaluation session. In this session, each student gets familiarized with others’ work and has a chance to scrutinize how different methods are applied by their peers. The lecture is finalized with an exhibition and a poster presentation event. This public event is open to the participation of all students and the staff at the faculty, which is another chance for the students to receive feedback on their UXR projects and final models.

3 Journals such as Human–Computer Interaction, International Journal of Human–Computer Studies, Computers in Human Behavior, Ergonomics, Behaviour & Information Technology, ACM Transactions on Computer–Human Interaction (TOCHI), International Journal of Child–Computer Interaction and Journal of Usability Studies are involved. While assigning them to the students, interest areas which are indicated at the beginning of the course are considered.
Table 2. UX Modelling approaches presented in the course

<table>
<thead>
<tr>
<th>MODELLING APPROACH</th>
<th>TYPES OF MODELS</th>
<th>SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Representing activities and works of users</td>
<td>Work models in contextual design involving the flow mode, the cultural model, the sequence model, the physical model and the artifact model</td>
<td>Holtblatt, Wendell, &amp; Wood, 2004</td>
</tr>
<tr>
<td>Representing the user</td>
<td>Personas (both data-driven and inspirational)</td>
<td>Pruitt &amp; Adin, 2006</td>
</tr>
<tr>
<td>Representing the concepts and their relations</td>
<td>Hierarchical Value Maps (HVM) based on ladder interviews</td>
<td>Wannam, 2003; Reynolds &amp; Ulson, 2001; Miles &amp; Hove, 2008, Abome &amp; Zaman, 2009, Tora Yang, 2013</td>
</tr>
<tr>
<td>Conceptual Maps / Cognitive Maps</td>
<td>Fraskos, 2004; Miles, Rudeberg, &amp; Salatins, 2013</td>
<td></td>
</tr>
<tr>
<td>Cross Impact Analysis (CIA) based on ladder interviews or Repository Old interviews</td>
<td>Tora Yang, 2013; Kuro, 2015, Soner &amp; Eröz, 2015</td>
<td></td>
</tr>
<tr>
<td>Representing experience over time</td>
<td>Experience maps representing user experience over time</td>
<td>Karapanos, Zimmerman, Fortuzzi &amp; Martens, 2009; Richardson, 2015, Karahan, 2013</td>
</tr>
<tr>
<td>Representing design recommendations</td>
<td>Mental models</td>
<td>Young, 2008</td>
</tr>
<tr>
<td></td>
<td>Design recommendation infographics</td>
<td>Authors’ unpublished project work</td>
</tr>
</tbody>
</table>

3.3 Outputs: Student Projects

The course has been offered in Spring 2016-17 and Fall 2017-18 semesters and taken by twenty-one graduate students from Middle East Technical University, Department of Industrial Design. During the course, depending on the type of the project and academic level of the students, some projects are carried out individually, whereas others are encouraged to be conducted as couples. Nine couple projects and three individual projects were carried out throughout these two semesters. In some of the projects, students were able to find collaboration opportunities, including science parks, application developer companies and maker communities, as well as academic institutions. Table 3 presents an overview of these twelve projects indicating their titles, methods used, the UXMx criteria considered when choosing the methods and types of the models presented as outcomes of the projects.

Table 3. Summary of all projects carried out in the course

<table>
<thead>
<tr>
<th>TITLE</th>
<th>METHOD</th>
<th>FUNCTION</th>
<th>METHODS</th>
<th>MODELLING APPROACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploring Sensory Modalities: The Case of Listening Music with Headsets</td>
<td>UX Curve</td>
<td>Experience over time</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Budget Management Experience of College Students</td>
<td>LGT</td>
<td>Mental Imagery</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Role Sharing Experience of Students with the ‘W2’ Application: Commuting between METU and Erciyes</td>
<td>Interview</td>
<td>Device Logs</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Experience Maps of Students of the ‘W2’ Application: Wallet and Erciyes</td>
<td>Interview</td>
<td>Diary</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Redesign of Syrian Refugees Registration Process in Amman</td>
<td>Observation</td>
<td>Interview</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>3D Modelling and Printing Experience</td>
<td>Workshop</td>
<td>Workshop</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>The Use of Online Tools in Industrial Design Education</td>
<td>Survey</td>
<td>Experience Sampling</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Lunch (Break): Experiences of METU Technicians (Employers)</td>
<td>Interview</td>
<td>Experience Sampling</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Making Experiences of Self-Learning Android via Online Platforms</td>
<td>Interview</td>
<td>UX Curve</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Exploring Employee Experiences of Physical Space in Technology Incubation Center</td>
<td>Interview</td>
<td>Interview</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Flow and Importance of Voice Generation in Industrial Design Education</td>
<td>Focus Group</td>
<td>Focus Group</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Enriching Children’s Health by iPad Experience: A Concrete Mapping Study</td>
<td>Interview</td>
<td>Interview</td>
<td>Methods and their relations</td>
<td></td>
</tr>
<tr>
<td>Consumer’s Shopping Experiences in Supermarkets and Online Markets Mobile App</td>
<td>Workshop</td>
<td>Workshop</td>
<td>Methods and their relations</td>
<td></td>
</tr>
</tbody>
</table>

*Study was conducted online, when students were using healthcare services during spring 2019.
As it can be seen in the table, there were an array of methods applied by the students including interview methods, such as traditional interviews, laddering, repertory grid, mental imagery and UX Curve interviews and focus groups; observational methods, such as naturalistic observation, shadowing and collecting device logs to observe behavior; diary methods, such as traditional diaries, experience sampling and cultural probes, and workshop methods conducted with users and designers. Consequently, for each of the project, different UX models were generated representing concepts and their relations, experience over time, activities or works, the user and design recommendations. Such variety enables students to observe different types of UXR processes and thereby support learning from their peers, which is an important goal of this course.

4. DISCUSSIONS AND CONCLUSIONS

The course schedule described so far involves lectures, assignments and workshops. Figure 1 illustrates how targeted learning outcomes, course content, tools, and activities align with dimensions of the integrated UX education model. For raising awareness towards UX and UXR throughout the course, students are lectured on several topics including concepts and models on UX; UXR methods; usage of the UXMx to choose a method; operation of observation equipment and considerations in contrived and naturalistic settings; and data analysis and visualization. Theoretical knowledge is supported with assignments and in class activities, which enable students to apply knowledge and acquire the required skills for conducting UXR and modelling UX. All these lectures, assignments, and workshops guide the student to experience UXR as a process. Through acquiring hands on experience with such a process, our aim is to equip students with necessary skills and knowledge to function as UX researchers. This serves the industry’s need for training job-ready UX practitioners, as well as facilitating academic development of students in conducting empirical research.

![Figure 1. Theoretical structure of the course](image)

Although there is a plethora of methods that should be learned and applied to have mastery in UXR, students have chance to experience merely three methods at most. So, we aspire to maintain variety in research cases and encourage peer learning by facilitating in-class presentations and activities. This enables students to discuss on different UXR cases, thereby learn from peers. To train students in UXR, another critical issue is educators’ competence in conducting UXR in real life (Gonzalez et al., 2017). In this course, guiding students in deciding on their topics and selecting methods for their research projects required educator’s mastery in UXR. We have varying experience (from nine to fifteen years) including industrial collaborations with different firms. This is helpful in leading the course and guiding students when choosing topics, using UXMx, and building models.

Given our integrated UX education model, it is also crucial to reflect upon the role of the UXMx. We intended to devise UXMx as a decision making aid that can be utilized in multifarious cases both in education and industry. Hence, major portion of the implications of the course revolves around UXMx. We believe that UXMx leads to valuable and rich educational, professional, and academic implications. Bethinking educational ones, as UXMx is used to benefit from appropriate method selection criteria and able to locate students’ project among constellation of research methods, students have gained knowledge on how to select methods and present research findings. For professional implications, UXMx has potential to be directly utilized in practice. While being a guidance for industry, for which knowledgeable UX researchers is
of current necessity, it can also be used both for choosing the right methods and communicating the research outcomes within a firm or to other stakeholders. Beyond these core implications, UXMx can be a guide as an academic implication, by structuring method reviews and by being a classification tool for manifold UXR methods.

This paper describes the objectives, scope, content, and outputs of a course, which aimed to provide training on UXR. By describing these, the goal is to discuss the theoretical structure of the course (Figure 1). For this reason, the paper only focuses on presenting the course’s content and structure; and overviews the current outputs. To understand how well objectives have been met and how well the course corresponds to students’ and industry’s needs, evaluations should be conducted both during the course and at the end of each semester. The effect of knowledge and skills acquired during the course on real life circumstances and how students who took the course benefit from it should be explored to understand the course effectiveness and value. Future studies will focus on these issues to improve the course and draw lessons for developing educational strategies for UX. Furthermore, although this course has been facilitative in training UX researchers, it is important to note that it is limited with time restrictions and capacity of a semester-long course, since it is offered as an elective in the Department of Industrial Design. We believe that lessons learned from the execution of the course as well as its theoretical structure can be informative for educational curriculum development in UX.

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