Redesigning An Online Store User Interface: A User-Centered Design Approach

Kiseol Yang

Purpose of the Study: This study aims to provide a user-centered website design pedagogy for the website development curriculum.

Method/Design and Sample: A user-centered website design pedagogy was developed through project-based experiential learning in redesigning a university bookstore website. Kolb's experiential learning theory was employed to assess the pedagogy.

Results: Aligning with Kolb's experiential learning theory, this study found that the project was designed to benefit students in developing UI and UX design competencies through a four-stage of learning continuum from concrete experience, reflective observation, abstract conceptualization, and active experimentation.

Value to Marketing Educators: The user-centered website design pedagogy has potential to reinforce student competencies in designing website UIs with relevant content and personalized experiences. As more companies are embracing a customer-centric experience model, the user-centered design employing customer journey mapping can be adapted to other omni-channel courses in which students learn to map the customer shopping journey across channels.

Keywords: user-centered website design, experiential learning theory, customer journey map, user interface design

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INTRODUCTION

Technology-mediated marketspaces (e.g., e-commerce, m-commerce, and social commerce) have become widespread on shopping channels supported by customer-centric web-based systems (e.g., customer relationship management, personalized product recommendation, and customization systems). In this changing retail landscape, technologically empowered consumers proactively engage with digital touchpoints and retailers have utilized the digital touchpoints to lead consumers along their shopping journey to the final purchasing point. As consumer interactions with digital touchpoints increase, retailers face new challenges to shape and measure their interactions with the aim of meeting the consumer's expectation (Maecheler, Neher, & Park, 2016). According to a recent study, ninety-one percent of consumers indicated their preference for shopping with brands that they feel understand them better and provide content and offers relevant to their particular contexts (Accenture Interactive, 2018). With personal shopping assistants available at customers' fingertips, customers look for instant gratification and expect real-time understanding and attentiveness from retailers (Solis, 2017). The digital disruption taking place in the retail and consumer market brings challenges and opportunities to retailers, suggesting the importance of offering meaningful and hyper-relevant interactions that enable consumers to receive what they want, when and how they want it (Cisco, 2016).

As retailers focus more on offering content that is relevant to individual customers' shopping paths, they need to put customers at the center of their online store design processes, understanding that customers and their behaviors should be the cornerstone of the design process (McKinsey & Company, 2016). In developing user-centered website content and design that enhance the personalization of experiences, retailers need to understand their customers first and then transfer the knowledge and understanding of their customers to their website design. In light of this, a user-centered website design pedagogy is an essential part of the website development curriculum to prepare students with the core competencies in website development and design throughout the customer shopping journey.

The digital merchandising course adopting a user-centered website design pedagogy is junior and senior class standing in the digital retailing program and provides instructions for website development process, site merchandising processes, and content development strategies. The course is designed to foster students' digital retailing competencies in developing online stores using appropriate digital platforms and content strategies to drive traffic to the online stores. The redesigning an online store user interface project is one of class projects to increase a student understanding in user centered design approach. In integrating pedagogical, theoretical, and technological aspects, the purposes of this paper are to present a user-centered design process for redesigning an online store and to discuss student learning grounded upon Kolb's (1984) experiential learning

cycles. This paper discusses the user-centered design approach as well as project-based and experiential learning, providing descriptions of the three phases of the website redesigning process. It also presents discussions and a conclusion.

CONCEPTUAL BACKGROUND

The User-Centered Design Approach

Unlike with traditional shopping channels, designing and managing customer shopping experiences in online stores requires approaches different from those taken with regard to the traditional systems lifecycle (Albert, Goes, & Gupta, 2004). In designing and offering quality customer experiences in online stores, the user-centered design approach is recommended to be taken so that relevant content can be offered to a wider range of diverse users' needs and wants (Zoltowski, Oakes, & Cardella, 2012). User-centered design is defined as the practice of creating engaging and efficient user experience, taking the user into consideration in the process of developing a product or service (Garrett, 2011). User-centered design involves the iterative process of harnessing user experience (UX), and user experience is associated with user perceptions and responses resulting from the use of a product, service, or system (International Organization for Standardization, 2010). In evaluating user experience (UX) through the user-centered design process, the user interface (UI) is employed to evaluate the user interaction flow in the use of a product, service, or system (Wood, 2014). In retailers' websites, the user-centered design approach enhances the utilitarian functionality of site design, but it also encourages users' emotional engagement with retailers' websites as the former bring their own meanings to the experience (Krippendorff, 2004; McDonagh & Thomas, 2010).

Given a precise understanding and accurate analysis of the target consumer group's information and behavioral patterns, retailers can manipulate and arrange their website content and elements into a user interface that appeals to the intended consumers both aesthetically and functionally. For the purpose of integrating user-centered approach into website development instruction, project-based learning associated with user interface design and assessment was undertaken.

Project-based Experiential Learning: University Bookstore Website Redesign

Project-based learning takes place when students work through problems to achieve an end product (Lee, 2009). Project-based learning enables students to simulate tasks and to be situated in relation to problems to which they are expected to find solutions, resulting in a more comprehensive understanding of problems on their part (Zoltowski, Oakes, & Cardella, 2012). Further, through project-based learning, students can experience real-world activities that motivate them to participate with the course materials, which ultimately increases their competencies with the end product. Thus, experiential learning takes place when students participate in a project-based learning activity.

Kolb's (1984) experiential learning theory supports the notion that "learning is the process whereby knowledge is created through the transformation of experience" (p. 38). Kolb's experiential learning theory suggests there are four essential stages of the learning cycle in the experiential learning process (see Figure 1). These four stages of the learning cycle include concrete experiences, reflective observation, abstract conceptualization, and active experimentation. Concrete experience is based on the reflections of abstract concepts and on the acquiring of knowledge through practical experiences (Kolb, Boyatzis, & Mainemelis, 2000). The term reflective observation refers to the intentional consideration of an experience, creating knowledge and inward reflection through observations (Hatcher & Bringle, 2000). Abstract conceptualization is a learning process that is achieved by integrating theories and concepts into the activity (Kolb et al., 2000). Active experimentation is the stage involving knowledge transformation through experimenting with the concepts/theories in practice (Kolb et al., 2000). Through incorporation of the project-based learning theory into Kolb's learning framework, the three phases of learning were developed.

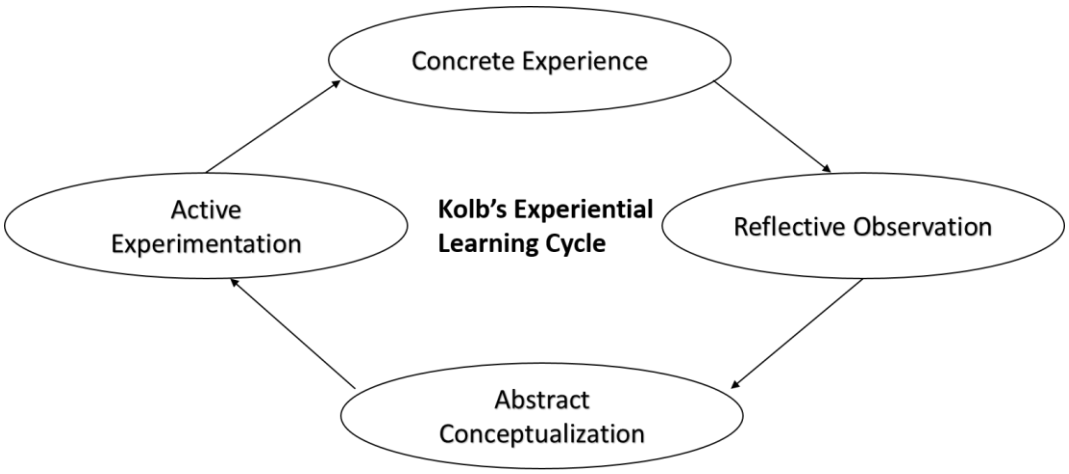

Figure 1. Kolb's Experiential Learning Cycle

Learning Phase One: Theoretical Background of the User Interface Design

Prior to work on the user centered design project, the theoretical background and principles of user interface (UI) design and user experience (UX) were presented to students. User-centered design should please customers and should take into account customers' mental states when they encounter the user interface to accomplish their goals as users. User-centered design learning materials typically covered in lectures include interaction design (Verplank, 2009), the UI design process, information architecture, hierarchies of navigation and content, the graphical UI, and website composition. The conceptual and theoretical background of UI and UX design increases students' understanding of the importance of the underlying interactive structure so that they can create a successful user-centered website design.

Learning Phase Two: Persona and Customer Shopping Journey Development

The first step in user-centered design is defining a target consumer group to identify the target consumer group's characteristics, their shopping tasks, and the context of actions they will take. A series of tasks was given to students to help them acquire in-depth knowledge of the target consumer group of the online store. For facilitating this project-based learning, a university bookstore website was taken as the product whose UI would be redesigned. In developing the customer persona and the customer shopping journey of the university bookstore, students undertook an ideation process to map the shopping journey of the persona.

The persona development process: The first step of the ideation process is to gather information about the site and site users. Students identified the site goals of the bookstore website and defined site users for the purpose of developing a persona for the university bookstore. A persona is a character representing an archetypal consumer, and the character sheet is developed based on the data and grounded in reality (Croxen-John & Tonder, 2017). The persona should be developed based on actual people so that the site can be designed to communicate clearly with the intended users. Based on the understanding of the persona, the context, and points of frustration, retailers can design websites that provide better shopping experiences. Retailers do not need many personas and do not need to focus overmuch on the persona (Cooper, 1999). However, when retailers put a specific customer at the center of the process of designing a website, the website can be designed for the persona so as to achieve specific goals, helping retailers to optimize the website performance. The persona should bring customer segments to life in the process of mapping out the customer journey and developing content that delivers a better and more relevant shopping experience.

The components of the personas used for this project include a biography, the goal of the site/purposes of the site visit, quotes that summarize expectations, and a breakdown of the challenges faced using the site. Site traffic and website analytics sources (e.g., Alexa.com, collegefactual.com, university student demographic information) were used to produce quantitative data for developing an appropriate persona for the site. Personas can be developed based on interviews with consumers. Students interviewed one university student and considered themselves as users of a bookstore site users to add more qualitative input to the persona development process. Based on the interview with site users and the pain points and challenges they faced using the bookstore website, students developed problem statements to redesign the UI of the site.

Mapping a customer journey: A customer journey map is a holistic view of the customer shopping process to accomplish a goal, employing storytelling and visualization instruments (Kaplan, 2016). The customer shopping journey map visualizes each phase of the shopping process in which the customer engages across time (Diana, Pacenti, & Tassi, 2009). The customer journey map provides insights into opportunities for managing and designing customer shopping paths on retailers' websites. The customer shopping journey template and descriptions of the elements were drawn from the User Experience (UX) consulting company (i.e., Nielsen Norman Group) and revised for the project context (see Figure 2). The following were the key elements used to map the customer journey:

- Point of view: The actor of the story, which usually aligns with the persona.
- Scenario: The sequence of actions the actor takes in the shopping journey.
- Actions and emotions: What the actor is doing, thinking, and feeling during the shopping journey.
- Touchpoints: Times when the actor in the journey map interacts with the bookstore site.
- Opportunities: Insights to make shopping easier and more enjoyable for the actor.

This exercise allowed students to understand the user interaction flow and to create a holistic view of experience in the shopping journey through the lens of the customer (Kaplan, 2016). Students could identify the problems to be solved for improving the user experience in the UI based on the insights learned throughout the mapping process.

Learning Phase Three: Redesigning the Process Using the User Experience Design Platform

Based on the ideation process for better understanding the site user experience, students decomposed site elements, then rearranged and added the elements to design a better user interface providing what the users might expect from the interaction. Using the user experience design platform, students redesigned the frontend of the bookstore website with an aim to minimize customer pain points and challenges while improving the site experience.

Assessment of the Project

Student learning outcome regarding this project is that students will be able to understand the digital retailing environment. The learning outcome was determined by assessing the end product (i.e., redesigning a university bookstore website UI) using a detailed scoring rubric. Sixty-four students submitted the project and 78% of the students scored at least 80% on the project. In the student evaluation of the course, students reported that the project had enlightened their UI and UX concepts and stretched their thinking and creativity in relation to designing retailers' websites.

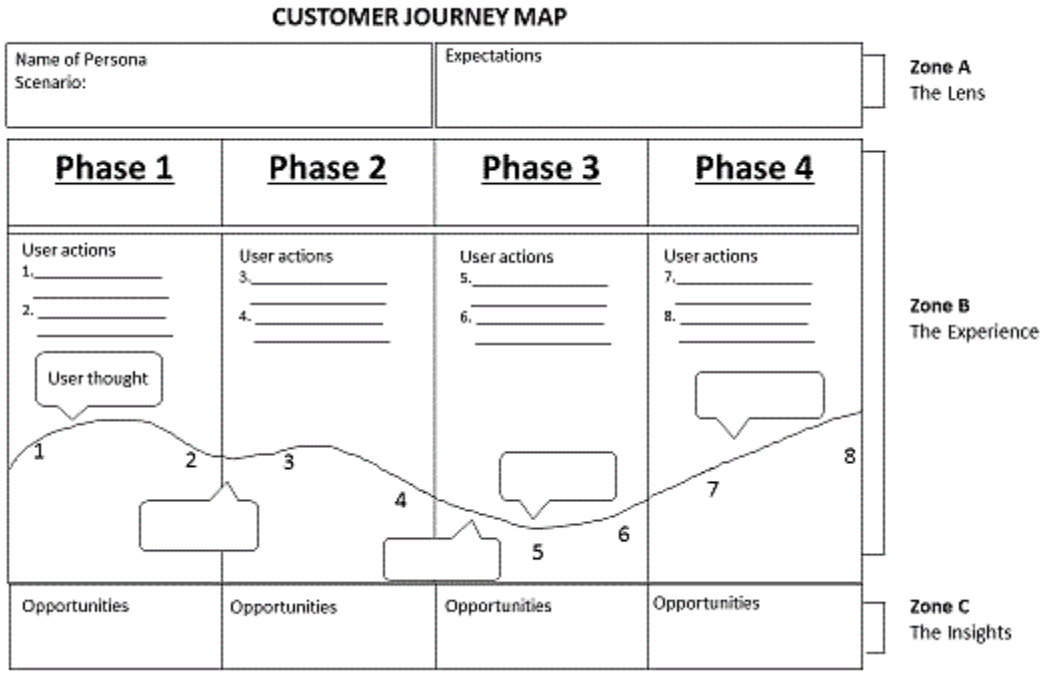

Figure 2. Customer journey map template. Adapted from *Deconstruction of a Customer Journey Map*, by K. Kaplan, 2016, Retrieved from https://www.nngroup.com/articles/customer-journey-mapping/. Copyright 2016 by Nielsen Norman Group.

DISCUSSION

This project has the potential to reinforce student competencies in designing website UIs with relevant content and personalized experiences. Aligning with Kolb's experiential learning framework, the project was designed to benefit students in developing UI and UX design competencies through the user-centered design process in terms of the following perspectives:

- Concrete Experience - Students were immersed as they enacted their role as UI and UX designers so that they could actively analyze, apply, synthesize, evaluate, and reflect on what they experienced in each phase of the project.
- Reflective Observation - Students explored the bookstore website to identify problems and pain points the persona might have and developed problem statements reflecting on the experience. They identified content and other elements in need of revision.
- Abstract Conceptualization - Students developed a persona for the site, mapped the customer shopping journey using visualization and storytelling instruments, and gained new insights to design the bookstore website.
- Active Experimentation - Students developed two UIs for the bookstore website by rearranging and adding elements and content using the user experience platform. Students tested their insights and ideas to improve user experience on the site.

Challenges Encountered in Using Project-based Learning

It would be an improvement to use a variety of retailers' websites for such a project. Due to the difficulty of gathering qualitative and quantitative data on users from other retailers' websites, the university bookstore website was selected for ease of acquiring user data on university students. In addition, site analytics data might help students understand user behavior so that they can find more detailed and accurate information regarding UI and UX problems. Students may have a more immersive experience and acquire additional site development skill sets if they can work on the backend of the university bookstore website.

Adaptability of the Project for Other Omni-channel Courses

The project of developing a persona and customer journey map can be adapted to other omni-channel courses in which students learn to map the customer shopping journey across channels. Consumers today interact with multiple touchpoints across shopping channels, and retailers can achieve a better understanding in designing shopping paths when they

walk in their customers' shoes across touchpoints. For analyzing the effectiveness of the project, student assessment of the project needs to be conducted using the questionnaire developed based on the four stages of Kolb's experiential learning theory.

CONCLUSION

The user interface redesigning project enabled students to participate proactively in the learning process, a process that motivated them to actively seek answers and solutions for problems the site users might have. The project equipped students with marketable skills that the digital retail industry expects from UI and UX designers. Further customer journey mapping and persona development processes can be adapted to other shopping channels to provide insights into customer motivations, mental states, and pain points. As more companies are embracing a customer-centric experience model, the user-centered design employing customer journey mapping is gaining considerable attention among companies wishing to provide optimal experiences for their customers (Clark, 2017).

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