UX Research Portfolio

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Background

2019 → 2021 → 2022 → 2024

Research Assistant

Mobile and Ubiquitous Interaction Lab, NYCU

Academic Research + UX Research

PDIS

UX Intern

Public Digital Innovation Space

UX Research

UX Designer

BORING Design Lab

UX Design + Research

HCI Researcher

University of Washington

Academic Research + UX Research

Who am I

- I obtained my Master of HCI + Design from the University of Washington
- I am a **researcher** who is also good at **design** and **prototyping**
- I believe design should be driven by **research** and **theory**
- I drink coffee and take photos

Case Studies

1. Redesigning Taipei City Public Daycare Application Portal
2. Concept Evaluation of Meltdown Mission, An Immersive Game
3. Mix-methods Study on Chatbot Guidance Design
4. Usability Testing of Canvas Mobile

Redesigning Taipei City Public Daycare Application Portal

Client

Taipei City Government

Timeline

July - August 2021

My Role

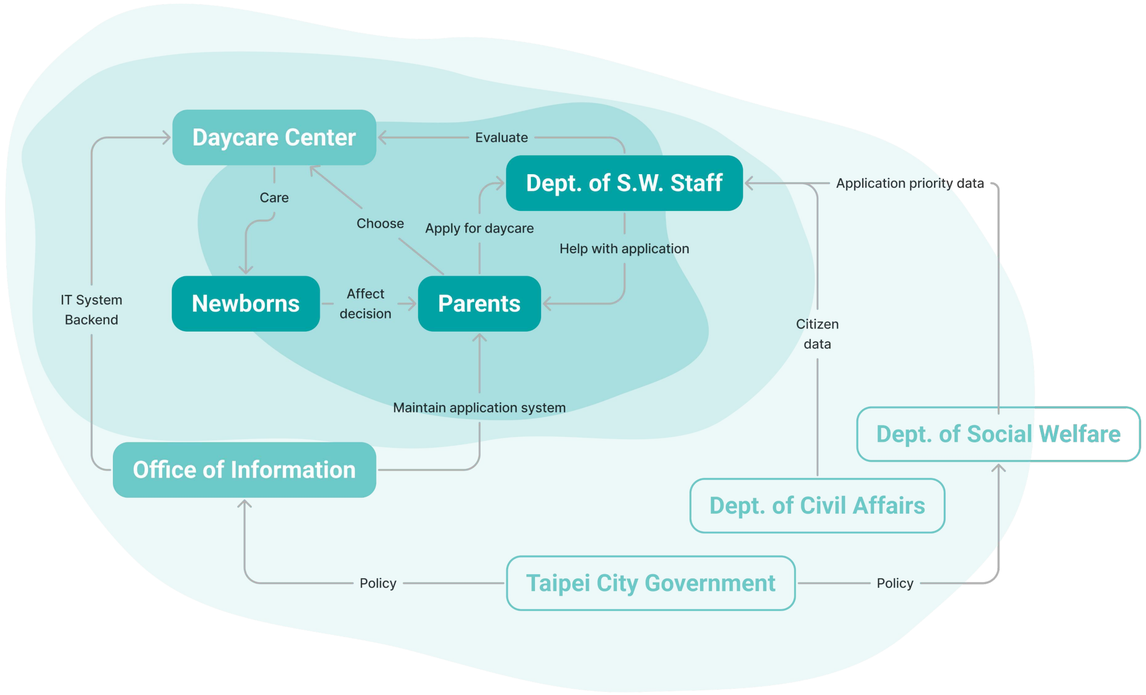
Lead User Researcher / UX Designer

Overview

Taipei City was facing an increasing number of users who could not successfully finish the public daycare application process.

I led the initial research progress and conducted interviews and usability testing(n=5) to help the team locate the problem in the system.

I also took the lead in transforming research insights into new information architecture, conducted concept evaluation(n=5), and ran RITE testing(n=5) to validate the solution.



Redesigning Taipei City Public Daycare Application Portal

Research Goals

Locate the pain points and breakdown of the current system. Evaluate the redesigned system.

Initial Stage

I helped the team scope down the problem space.

Methods:
Heuristic Evaluation
Stakeholder Map
Stakeholder Interview(n=3)

Generative Research

I conducted research and synthesized data to inform design.

Methods:
User Interview(n=5)
Usability Testing(n=5)
Journey Mapping

Evaluative & Iteration

I validated the concept and evaluated the new design to helped iteration.

Methods:
Lo-Fi Prototyping
Concept Evaluation(n=5)
RITE Testing(n=5)
SUS Survey

Redesigning Taipei City Public Daycare Application Portal

Insights

In the generative stage, we found the following insights(reworded for length):

1. **Participants have limited attention span and energy. They are under high pressure.**
2. **Daycare regulation is difficult to comprehend and increases cognitive load.**
3. **Participants have to jump between systems for different steps in the process.**

Evaluative research showed major problems were addressed and participants generally showed positive attitude toward the redesigned system.

Impact

The redesigned system received a **System Usability Scale score of 85(at 96 percentile)**, a huge improvement from the original 58(at 25 percentile).

The **linear user journey**, a design feature based heavily on the generative research findings, **was well received by the participants**.

The outcome of this project was presented to Audrey Tang, the Digital Minister of Taiwan. The Taipei City started to implement the redesign in Nov. 2023.

Concept Evaluation of Meltdown Mission, An Immersive Game

Project Type

Course Project

Timeline

Febuary - March 2024

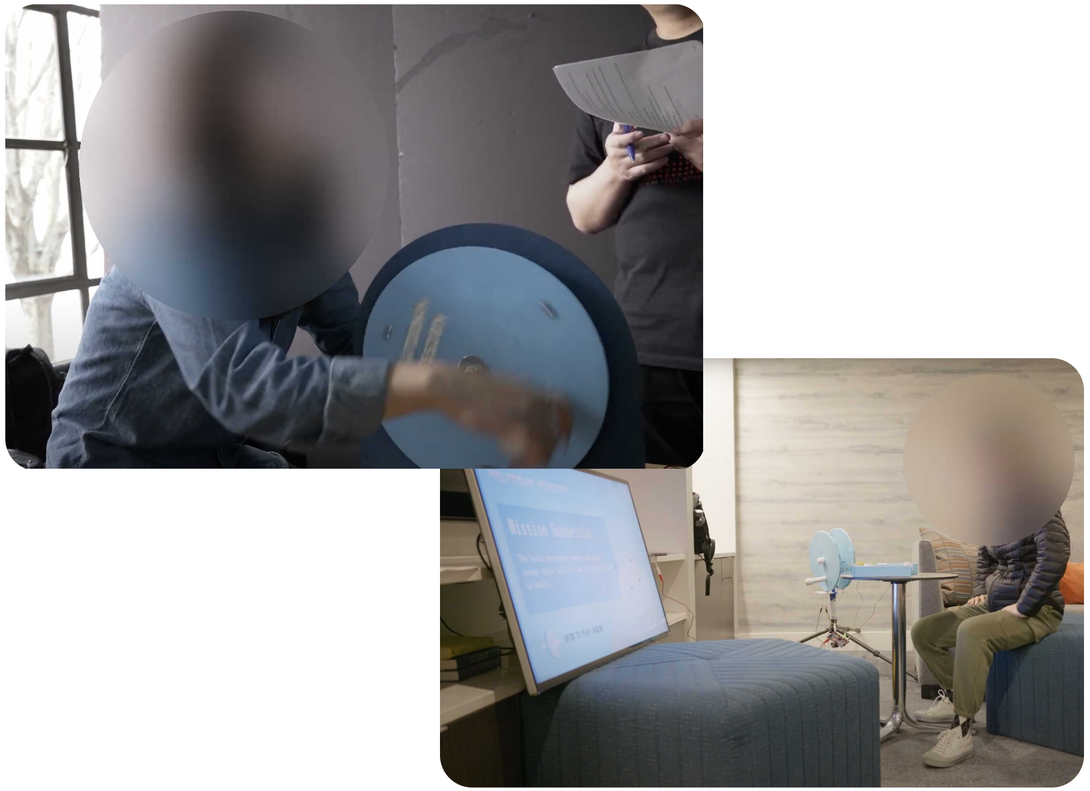
My Role

UX Researcher, Prototyper

Overview

Meltdown Mission is an immersive game designed to raise awareness of global warming by letting players experience the difficult situation faced by polar bears. In this project, I conducted concept evaluation(n=6) to investigate if our design concept can successfully convey the message.

As the only researcher and prototyper on the team, I developed a Wizard-of-Oz prototype to taste our early concept and an interactive prototype to test the overall experience and usability of the game. I helped the team validate our core idea, what worked and what can be improved to inform the game design.



Concept Evaluation of Meltdown Mission, An Immersive Game

Research Goals

Evaluate if players can understand our message, and if they perceive the game as fun and enjoyable.

Approach

When testing the general idea, I focused on testing the overall gameplay experience from start to end with Wizard-of-Oz to allow for quick testing and iteration turnaround.

When testing the final design, I wanted to validate if our game delivers an immersive experience. I built an interactive prototypes and used retroactive Think Aloud method to allow for immersive game play experience.

Selected Findings

1. **Using the controller is tiring, but participants still enjoyed it. They can relate their physical exhaustion to polar bear swimming, but wish the message can be more trivial**
2. **Participants perceived the game as fun, but some game mechanisms are not obvious to participants due to the text heavy onboarding UI**
3. **Participants showed frustration due to gameplay difficulties**

Impact

The research findings are used to make key decisions during the design process, including the core gameplay mechanism and the design of the physical controller.

We worked with Point Defiance Zoo to develop the final game, which won the Gold Award at HCI International 2024 Student Design Competition.

Mix-methods Study on Chatbot Guidance Design

Project Type

Academic Research

Timeline

April - September 2021

My Role

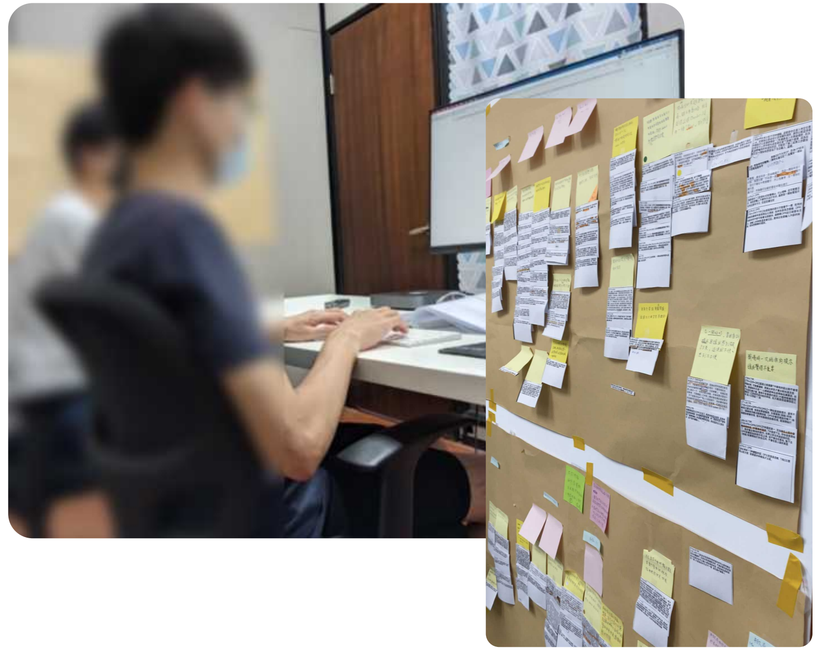
Academic Researcher / Paper Co-author

Overview

This mixed-methods study explored different types of chatbot guidance design and the timing of the guidance to enhance user experience and efficiency for task-oriented chatbots.

My contribution to this study mainly involved the coding of qualitative data, thematic analysis, and translating findings into academic writing.

This study was published on CHI '22 and received an honorable mention for the Best Paper Award*.



*Yeh, Su-Fang & Wu, Meng-Hsin & Chen, Tze-Yu & Lin, Yen-Chun & Chang, XiJing & Chiang, You-Hsuan & Chang, Yung-Ju. (2022). How to Guide Task-oriented Chatbot Users, and When: A Mixed-methods Study of Combinations of Chatbot Guidance Types and Timings. 1-16. 10.1145/3491102.3501941.

Mix-methods Study on Chatbot Guidance Design

Research Goals

Investigate the performance of difference chatbot guidance design and users' subjective experience.

Approach

I contributed to the analysis and synthesis of qualitative experiment data. We coded all the qualitative data and conducted thematic analysis to look for common themes.

I wrote the design implication section of the paper. I combined findings from the qualitative and quantitative analysis, conducted additional literature review to support insights, and translated them into design recommendation.

Insights

1. **Examples warranted a good start, whereas rules promoted learning.**
2. **Presenting examples at onboarding was too early that they became irrelevant.**
3. **The choices of both guidance type and timing depends on the chatbot's application and the purpose of the guidance.**

Impact

This study was published on CHI '22 and received an honorable mention for the Best Paper Award.

Given the focus on user behavior and subjective experience, insights and recommendations from this study are still highly relevant when designing conversational AI.

Usability Testing of Canvas Mobile

Project Type

Course Project

Timeline

January - March 2024

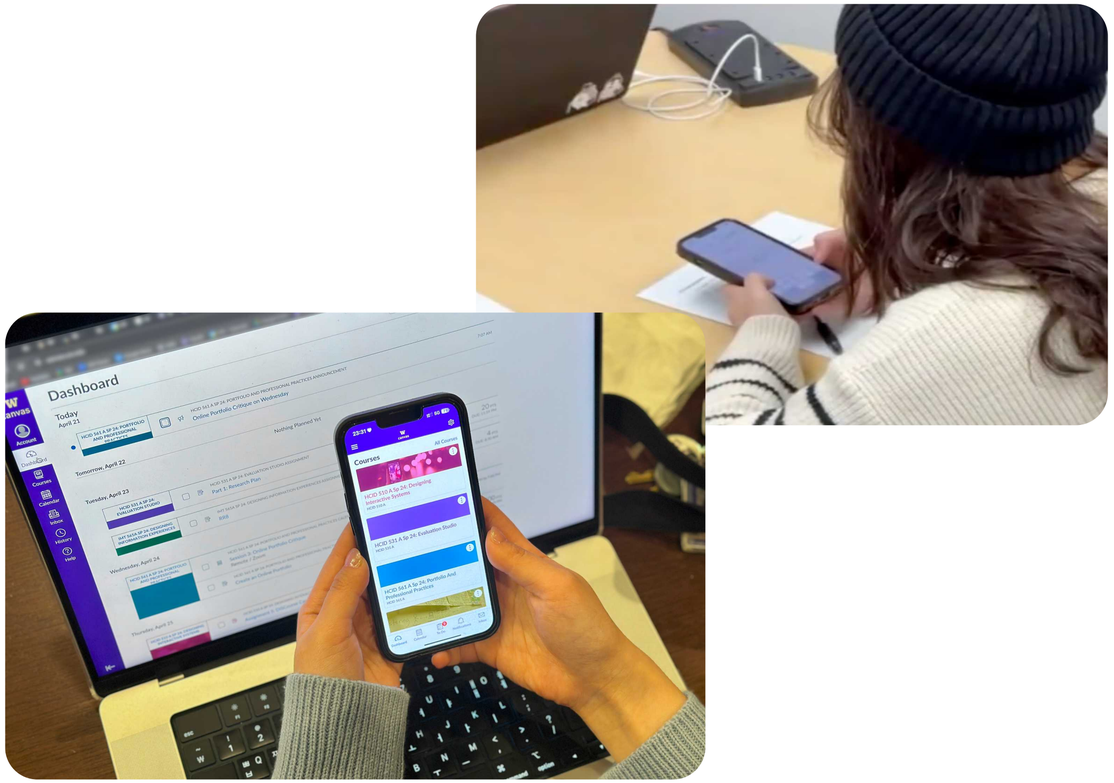
My Role

UX Researcher

Overview

Canvas is the learning management system (LMS) adopted by University of Washington. We wanted to investigate pain points student users face when using the mobile version to perform common tasks. As fellow students at UW, the product and topic of study was close to our hearts.

As a more experienced researcher on the team, my contribution included helping the team conduct heuristic evaluation and task analysis to form an initial understanding of the product and setting up the structure for the usability testing(n=5) and data analysis.



Usability Testing of Canvas Mobile

Research Goals

Evaluate if users can successfully and efficiently perform tasks. Identify key pain points in the system.

Approach

We used task analysis to identify key paths in the system and conducted a heuristic evaluation to uncover the obvious issues.

We conducted moderated usability testing (n=5). Each session included pre- and post-test questions, 7 tasks (3 scenarios) for testing, and a SUS evaluation. Think aloud methods were used to collect qualitative data.

Findings

1. **Difficult to discover how to filter courses on the Dashboard, leading to messy UI, which increased the difficulty of navigation**
2. **Multiple settings menus confuse participants. They were not able to find the necessary setting options in the system**
3. **Valuable features are hidden, participants were not aware of the full capability of the system**

Potential Impact

We delivered a usability report of Canvas Mobile consists of a list of usability issues, source of error, and a prioritized list of recommendations, which is marked with severity rating and organized into 3 different levels: UI component, feature, and system level.

The prioritized list enables the product team to address the severe issues with easy fix first, improving the usability of Canvas Mobile efficiently.

Thank you!

If you have any questions, please contact Alex Chen at:

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