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Studying Interaction Design as an English Education Student for the Indonesian International Student Mobility Award (IISMA) in New Zealand: A Case Study in English Speaking Country

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Abstract: This journal provides an account of the encounters of an International Student Mobility Awards (IISMA) awardee who majoring English education and undertook a multidisciplinary Interaction Design course at Victoria University of Wellington, New Zealand. The journal employs a series of learning techniques applied during a single trimester of the educational journey in New Zealand within the Interaction Design class. The result is that students experience an increase in skills and knowledge in designing and analyzing User Experience (UX) to create useful and creative products. These skills and knowledge will be useful for students as an English language education student who have to create interesting learning media in the future. The primary outcome of studying Interaction Design at Victoria University of Wellington in the second trimester is creating of a mobile application prototype for a vending machine using the Figma website. Despite the ultimate digital form, the original concept submitted envisioned a physical machine directly attached to the vending machine body.

Keywords: interaction design, multidisciplinary, IISMA, learning media

INTRODUCTION

Participating in international student exchange programs enhances the educational standards within a country. Additionally, the chance to study abroad not only elevates academic experiences but also facilitates the establishment of valuable connections and relationships with individuals from diverse international backgrounds. Students engaged in exchange programs gain a distinct or enhanced form of human capital compared to what they would acquire during the same period at their home university and potentially enjoy improved prospects in both the job market and the university setting (Messer & Wolter, 2007).

Many countries are competing to send their students abroad, in order to increase educational competence in an internationally competitive manner. Moreover, in recent years, international exchange programs have gained increasing popularity and are more readily available compared to previous decades (Magdalena et al., 2019). Indonesia is one of the participating countries which actively sends thousands of students every year to study. One of the newest programs issued by the government is the Indonesian International Student Mobility Awards (IISMA).

The Indonesian International Student Mobility Awards (IISMA) represents a scholarship initiative operating within the framework of the *Merdeka Belajar-Kampus Merdeka (MBKM)*, aligning with various scholarship programs administered by the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia. Within the spectrum of scholarships offered, only two programs exist for student exchange: IISMA and *Pertukaran Mahasiswa Merdeka (PMM)*. Notably, IISMA is specifically created to afford students the prospect of engaging in international exchange programs, distinguishing it from PMM, which is oriented toward facilitating local exchange opportunities.

Since 2021, the program has sent more than 4000 awardees to all over the world, giving them the opportunity to learn and experience something new. Furthermore, there are some mandatory requirements students need to accomplish to be eligible to register. Students must have a GPA more than 3.0, along with good English language skills as proven by an English proficiency test certificate from an IISMA approved institution. This stipulation is designed to ensure that students encounter no impediments in navigating the educational experience within the host country. Furthermore, these elevated standards are imposed due to the responsibility of IISMA students to showcase Indonesian culture in the host country. Fulfilling tasks assigned by the IISMA team is an integral part of their obligation as scholarship recipients. These tasks include challenges like the HEROES challenge, designed to acquaint people in the host country with Indonesian culture, and the BATIK challenge, where students don traditional Indonesian attire, specifically Batik, to promote traditional Indonesian costumes abroad (IISMA Committee Team, 2023). There are also more challenges given to the awardees, such as individuals article writing and another collective challenges.

Nevertheless, in addition to fostering equal opportunities for Indonesian students to pursue education abroad, one of the primary goals of IISMA is to offer students the chance to engage in multidisciplinary courses. The term "multidisciplinary" denotes the amalgamation of various academic disciplines as discrete and independent components within an educational context, in essence, this approach enables students to explore specific scientific fields while simultaneously attaining the objectives of those particular disciplines (Garner, 1995). Multidisciplinary learning emphasizes the acquisition of knowledge from a variety of disciplines (Park & Son, 2010). This initiative enables students

to explore diverse subjects aligned with their interests beyond their primary field of study in Indonesia.

Furthermore, every nation participating in an exchange, whether in the role of a host or a guest, holds particular objectives and expectations for the encounter, these factors can either foster cooperation or present challenges to mutual understanding (Mathiesen & Lager, 2007). Currently, there are 27 countries collaborating with IISMA, and New Zealand is one of them, and in 2023, IISMA sent a total of 66 awardees to the country which 15 of them were sent to the capital city, Wellington, where the awardees studied at Victoria University of Wellington. The courses taken by the awardees are very diverse, and seven of them pursued interaction design as part of their academic program. Notably, none of the seven awardees specialized in interaction design at their home universities, indicating that this course represents one of the multidisciplinary options that was chosen. Engaging in the study of interaction design offers students the opportunity to acquire knowledge beyond the constraints of their home university's curriculum, which may have limitations in its breadth. Additionally, in the contemporary landscape, design courses hold significant relevance as they are in demand across diverse sectors. Through the pursuit of interaction design, students can not only broaden their expertise within their specific field but also enhance their skills applicable to various domains.

RESEARCH METHODS

Interaction design focuses on creating interactive products that facilitate and enhance the manner in which individuals communicate and interact in both their daily and professional activities (Sharp et al., 2019). Interaction design involves the creation of digital products that users can navigate effortlessly and find enjoyable. This encompasses the development of interfaces and interactions tailored to function seamlessly on computers and various devices, prioritizing user satisfaction. Designers must thoughtfully consider user needs and behaviors, striving to produce designs that are both user-friendly and aesthetically pleasing. Beyond mere functionality, the aim of interaction design is to ensure that the user experience is not only efficient but also enjoyable. The fundamental idea behind interaction design as a human-centered discipline is to discover approaches that benefit professionals in their everyday activities (Kolko, 2010). This field merges creativity, a deep understanding of human cognition, and the application of technology to guarantee that digital products are not only helpful and easy to use but also enjoyable for everyone.

The instructional approach involves a combination of lecture and tutorial sessions. Lectures occur once a week and accommodate large groups, with over 70 students attending each session. These sessions primarily focus on delivering foundational design concepts, which serve as the basis for the semester's final project. Additionally, lectures include a review of assignments and successful product outcomes from previous years, enriching the learning experience. The lecture sessions, lasting 50 minutes, take place every Friday at the Te Aro campus of Victoria University of Wellington.

Conversely, tutorial classes, held twice a week, provide a platform for assignments, critiques, feedback, and revisions. These sessions, occurring on Wednesdays and Fridays and lasting 80 minutes each, facilitate more in-depth discussions between students and instructors due to their smaller size, capped at 20 participants. Tutorials offer an opportunity for detailed assignment explanations, progress checks, and ensuring the smooth execution of students' work. This dual-method structure aims to balance comprehensive content delivery with focused discussions and feedback, enhancing the overall learning experience. Lastly, tutorials were also held in Te Aro campus.

As for the Interaction Design class which is given in the 2nd trimester of the 2023 academic year, the project focuses on handling user experience (UX). User experience (UX) entails the overall impression and emotions that individuals experience while engaging with a specific design (Hassenzahl & Tractinsky, 2006). If the results of the UX are deemed unsatisfactory during product usage, it necessitates a reevaluation and revision of the product design. Because, apart from helping people with its function, the product must also have a pleasant use (Battarbee & Koskinen, 2005), and the concept of User Experience as a narrative conveyed through a product has the potential to change our perspective on thinking and design (Hassenzahl, 2013). The main objective of this course is to make students empowered to create high-quality products and improve user experiences compared to their previous endeavors.

Furthermore, throughout the learning process, students have navigated several stages to achieve their objectives. These stages are systematically organized into three distinct parts, concurrently serving as three critical phases for the teacher to assess and evaluate the students' progress. These delineated stages include:

1. Project 1 – Journey Map

   The core of interaction design lies on the analysis of how individuals engage, experience, and internalize processes and the use of a journey map is essential for gaining a more distinct comprehension of both current and prospective designs. Journey map is widely employed in depicting user experiences with a service or product (Moon et al., 2016), operate by visually delineating the interplay between a customer or user and the product, along with the pertinent business or organizational aspects (Howards, 2014). A journey map comprises five fundamental elements. The first is the persona, representing a user and encompassing identity, characteristics, the purpose of product usage, and related information. The second element is the timeline, designed to delineate the stages of user interaction with the product from initiation to completion within a specified timeframe. The third element is emotion, encapsulating any emotional response elicited from the user during product interaction. The fourth component is the touchpoint, delineating activities that describe the stages of interaction between the user and the product. Finally, the fifth element is the channel, representing the medium employed in facilitating the interaction between users and products.

   Creating a journey map is an initial step which is designed to identify and analyze the primary issues within a product. The utility of journey maps in aiding the comprehension of User Experience (UX) has frequently

positioned them as a management tool. (Rosenbaum et al., 2017). During this phase, students carefully observe and document two real-world interactions with a product. They delve into the details of each step of the interaction, evaluating whether the experience was positive or not. This assessment serves as a reference point for determining areas that require improvement in future product iterations.

Subsequently, students translate their observations into visual representations called journey maps, capturing the key interactions influencing the user experience. Following these two stages, students compile a summary that encompasses reflections on the observed interactions, highlighting positive aspects and identifying opportunities for enhancement.

Ongoing monitoring by instructors is facilitated through students' completion of a discussion blog, providing insights into the progress of the project which is very crucial. The flexibility of timing for blog entries allows students to contribute at their convenience. This blog not only serves as a continuous evaluation tool but also contributes to the final project grade.

In essence, students undergo three stages to complete a comprehensive journey map. The initial stage involves observation, where the user experience is meticulously analyzed and documented. The second stage entails creating journey maps or storyboards, encapsulating key interaction points. The final stage comprises a reflective summary, offering insights into observed product aspects and potential areas for improvement.

2. Project 2 – Design Psychology

The second phase involves integrating the project with design psychology, a critical consideration, particularly for service-oriented products. Products, especially those in the service domain, must inherently serve a purpose, and fulfilling these purposes relies significantly on design psychology. Design psychology establishes a psychological foundation with practical implications for crafting products that align with human needs, ensuring efficiency, safety, and user appeal (Carbon, 2019). The incorporation of design psychology is essential because humans typically interact with products in similar ways. Therefore, leveraging the principles offered by design psychology proves highly beneficial in the product design process.

In this step, students are tasked with identifying interactions within the first project and conducting a thorough analysis of three major pain points. Once these pain points are identified, students embark on seeking improvements by applying design psychology principles, drawing on resources such as the Laws of UX website. Subsequently, students choose one interaction to develop into two distinct conceptual designs, ensuring that at least one design psychology principle serves as the foundation for this development. The improvement concepts generated by students can take either digital or physical forms.

For Project 2, students are required to compile three written summaries and three visualizations for each developmental concept. The written summaries delve into a discussion of design psychology ideas relevant to the observed interactions, complemented by a comprehensive explanation of the procedures for applying the selected concepts or addressing the identified pain points.

Additionally, Project 2 incorporates a Project-based Assessment (PBA), conducted on a weekly basis. During the PBA sessions, students provide detailed explanations of their progress, highlighting any encountered challenges and presenting solutions. In Project 2, students are assigned five PBAs to complete, akin to the discussion blog's role in Project 1. The PBA sessions play a pivotal role in determining the students' final grade for this project, with the condition that PBAs will be considered only if students participate in a tutorial session during that week.

3. Project 3 – Prototype

This is the final step that students must take, where students must create a prototype of the concept they have created. A prototype represents an initial manifestation of several facets of the final concept or design (Camburn et al., 2017). Similar to prior projects, students are required to consider several factors before embarking on the prototype development.

First, students need to make a user journey, which allows students to identify which aspects of the concept should be created. Students can start from choosing a user and quickly map out a task or journey for the user to complete. This way, students did not have to make the whole product and only had to create the frames that would be needed in the prototype. Next, students can start making a prototype plan. By using the user journey that has been created previously, students will plan regarding what aspects need to function so that the user can complete the task. The third step involves generating a final design along with a video demonstration showcasing the product's usage. This step is designed to elucidate the functionality of the final product, as students produce a operational prototype accompanied by a one-minute video demonstrating the application. Within the Interaction Design I class, the Figma application serves as the medium, facilitating the seamless progression from design initiation to the final product prototype.

The prototype is mandated to be high-fidelity, meaning it must closely resemble the final product or be as analogous as possible. Additionally, the completion of this final assignment necessitates an A2-sized poster, presenting the ultimate solution mirroring the prototype. At this project, students compile a workbook, an A2 product poster, and one prototype demo video. Analogous to Project 2, Project 3 incorporates 5 Project-based Assessments (PBA) that must be fulfilled, serving as crucial considerations in determining the final project point.

RESULT AND DISCUSSION

The primary outcome of studying Interaction Design at Victoria University of Wellington in the second trimester is creating of a mobile application prototype for a vending machine using the Figma website. Despite the ultimate digital form, the original concept submitted envisioned a physical machine directly attached to the vending machine body.

However, following extensive feedback and recommendations from lecturers, adjustments were made to enhance the final product's quality. In total, three products were generated as a culmination of lecture-based projects, and these outcomes are as follows.

1. Project 1 – Journey Map

Journey maps can manifest in various formats, but they are commonly graphical depictions illustrating the steps a user goes through when interacting with a product or business (SAP Studio, 2022). In this particular course, the generated journey map takes the form of a graphic visualization, incorporating essential elements inherent to journey maps.

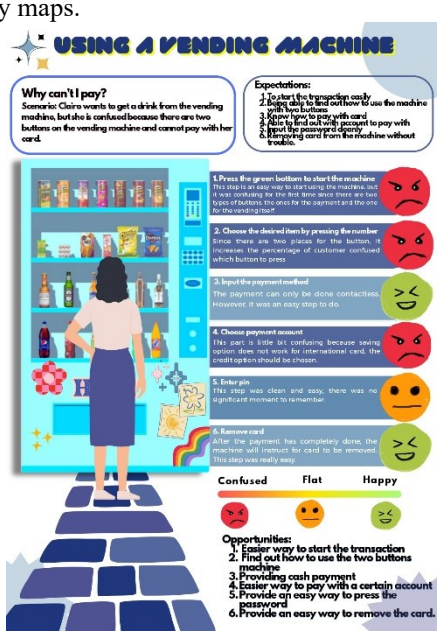

Figure 1. Journey map

The persona featured in the journey map is named Clairo, who took long time to purchase a product because she was confused about the system of the vending machine during the transaction. Clairo undergoes a total of six touchpoints, systematically adhering to the correct order and timeline. However, the majority of these touchpoints evoke negative emotions, signifying an unsatisfactory experience for Clairo as the product user. The journey map provides a lucid depiction of problematic areas in the product as experienced by customers. Customers anticipate a seamless transaction process with the vending machine, prompting potential development opportunities for updating the product to enhance user satisfaction.

This journey map serves as a valuable tool for pinpointing specific areas in the vending machine that require attention. Emotionally, three touch points in Clairo's experience are particularly unfavorable. These include the initiation of product usage, item selection, and the payment method. The crux of the issue lies in the third stage, where Clairo encounters confusion while attempting to pay for the selected items due to the separate placement of start button and payment buttons. Addressing these three significant pain points in the future is crucial for refining the product and ensuring an improved user experience.

2. Project 2 – Design Psychology

Following is the outcome of Project 2, specifically the visualization of the concept aimed at enhancing pain points, which has been associated with design psychology. Based on the results of the journey map in project 1, one of the things that must be improved is the separate item selection buttons and payment buttons. The proposed enhancement entails merging these two buttons and linking them to the design psychology heuristic known as Hick's law. In 1952, William Edmund Hick and Ray Hyman explored the correlation between the number of stimuli presented and an individual's response time to those stimuli. Consequently, Hick's law posits that an increase in stimuli leads to a longer duration to complete an activity (Soegaard, 2020).

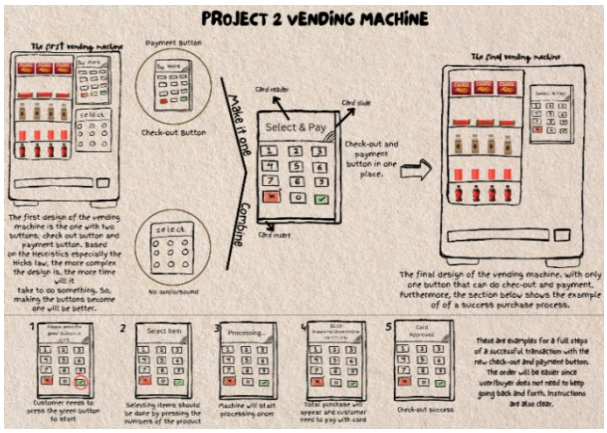

Figure 2. Visualization of Development Connected with Design Psychology

In alignment with the existing concept, addressing the separation of item selection buttons and payment buttons becomes imperative. The current setup may cause confusion among customers, leading to prolonged usage times. To resolve this, the proposed solution involves creating a new machine were selecting goods and making payments can be seamlessly performed in one tool. This innovation aims to eliminate confusion, reduce user time, and ultimately enhance the overall user experience.

The visualization of this concept also includes a demonstration of how to operate the newly designed machine, facilitating a clearer understanding of the concept. This visualization not only aids comprehension of language or meaning being used (Elmiana,2019) but also offers insights into why the concept aligns with the design psychology heuristic, as exemplified by Hick's law.

3. Final Project 3 – Prototype

This prototype is the final product of this class. Where this prototype already resembles the real form of the design that has been developed. The prototype serves several purposes, including acting as a guiding reference or milestone, illustrating the process and progress, serving as a clear demonstration, and ensuring the seamless collaboration of components and subsystems according to the intended design or plan (Berglund & Grimheden, 2011).

There are changes to this prototype or final product. Where in projects 2 and 3, the product is conceptualized to be in physical form. However, after some discussions with the lecturers, the concept was changed to digital in a form of mobile application called Venda. A mobile application is a collection of software programs designed to operate on a mobile phone or device, executing specific functions for the users (Islam, 2010). The main aim of creating the Venda mobile application is to make it easier for users to get the items they want. Mobile applications are very practical because they are available on mobile phones which are small in size, easy to use, easy to access, easy to install, and inexpensive (Islam, 2010). Consequently, the decision to transition from a physical goods concept to digital goods is deemed both prudent and wise.

The procedural steps users need to undertake to complete a purchase on this application are as follows:

1. Log In or Sign In

   The initial action is accessing the application. Logging in is designed for users with existing accounts, whereas signing in is intended for new customers who need to create an account during this stage. Creating an account is essential to ensure that customers can access purchase and payment information even when logging in from a different device.

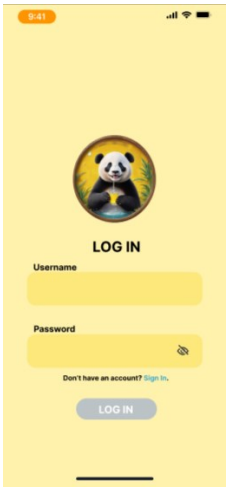

Figure 3. Log/Sign In Frame

2. Choose a location to redeem the product

   As each vending machine may contain varied products, users need to choose which vending machine they will visit to collect their pre-ordered items. When user open the application, it will automatically identify the nearest vending machine based on the user's location. Subsequently, the user can select the desired location by pressing the listed options.

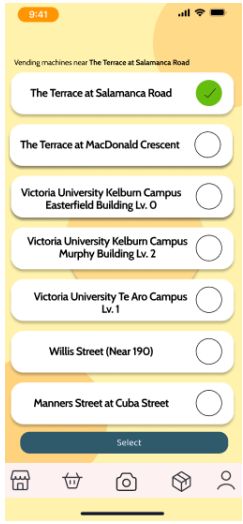

Figure 4. Location selection frame

3. Choosing Products

   Once a location is selected, Venda will promptly present the available items within the vending machine. Within this interface, users can directly pick the desired product. By pressing the blue 'buy' button, users can select the item they wish to purchase, and the chosen items will be automatically added to their basket.

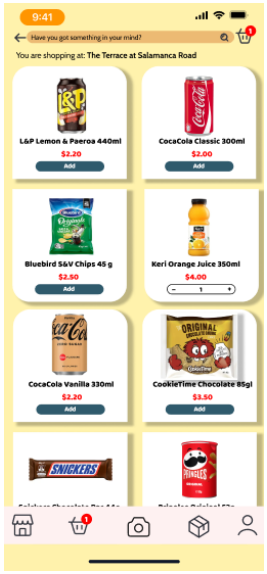

Figure 5. Product selection frame

4. Product Review

   After the user selects the product to purchase, the user can press the basket icon located in the upper right corner or on the left of the menu bar on the user's mobile phone screen. Then the screen will change to a frame showing the products that have been selected by the user. Within this view, users can review the selected items to ensure accuracy in their purchase choices.

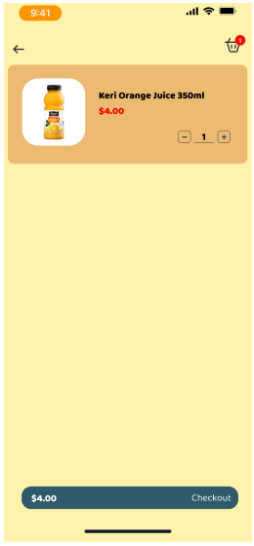

Figure 5. Product selection frame

5. Product Payment

To complete the payment, users should click the checkout button on the product review screen, this will lead to the payment method selection screen. Venda offers two payment options. The first option is direct mobile payment, requiring users to input their card details into the mobile application. The second option is payment at the vending machine, where users simply need to tap their card on the payment machine when collecting their items.

However, as the primary aim of this application is to streamline the selection and purchase of goods, the prototype exclusively illustrates the payment process via the user's mobile phone. This approach eliminates the need for users to undergo a two-step process by making payments at the vending machine.

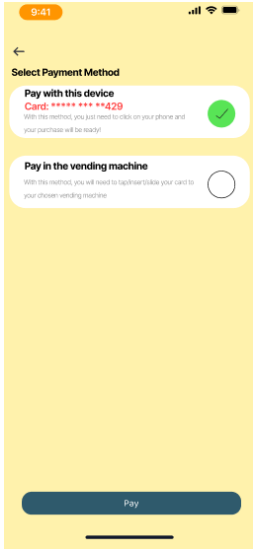

Figure 6. Product payment frame

6. Collecting Items with Barcode

Following the payment, Venda will present a barcode for product retrieval. Users simply need to scan this barcode at the designated vending machine. Upon scanning, the machine will dispense the user's selected items, and Venda will promptly mark the transaction as complete so the barcode will no longer be functional.

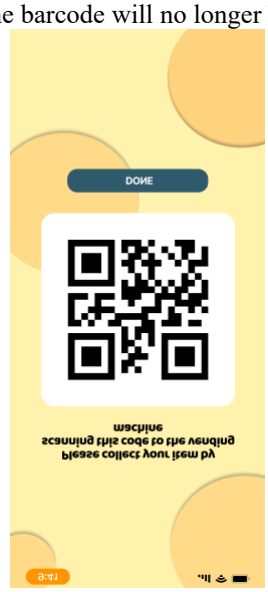

Figure 7. Barcode frame

Comprehensively analyzing the journey of a product demands precision and unwavering determination. Crafting a product that seamlessly combines aesthetics with functionality is a time-consuming and intellectually taxing endeavor. It necessitates elevated skills, cognitive prowess, and a profound understanding of human lifestyles to produce exemplary products. Interaction Design I will improve the author's skills in creating products that meet user expectations. This skill can help the author as an English education student in creating learning media that is not only interesting for students but also functions well and helps the learning process. Author also becomes cognizant that the efficacy of learning media is not solely contingent on its visual appeal but equally hinges on its functional prowess, ensuring users can effectively utilize the product.

CONCLUSION

The Indonesian International Student Mobility Awards (IISMA) initiative, established by the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia, provides Indonesian students with the opportunity to enrich their educational experience by studying abroad for a semester. This program not only encourages students to broaden their academic horizons but also fosters connections and relationships with individuals in the host country. Additionally, IISMA promotes multidisciplinary learning, allowing students to pursue courses aligned with their interests that may not be available in their home country.

Engaging in Interaction Design I have significantly enhanced the author's creativity and innovation, particularly considering the lack of prior design studies. This experience has broadened the author's capabilities as an English education student, fostering the creation of imaginative designs and refining skills in using the prototype creation application, Figma. The author is motivated to pursue further learning opportunities following the completion of activities at Victoria University of Wellington.

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