Information Accessibility

Developing a digital solution to improve access to support resources for international graduate students at the University of Alberta

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Abstract

This thesis investigates the creation of a digital platform designed to improve the accessibility of support resources for international graduate students at the University of Alberta. The influx of international students into Canadian universities presents unique challenges related to cultural adjustment, academic integration, and access to essential resources. Through a user-centered design process, this research addresses the gaps in information accessibility that hinder these students' ability to fully engage with university services.

The study begins with an in-depth analysis of existing literature on information accessibility, digital technologies in education, and the specific needs of international students. A combination of qualitative and quantitative research methods, including surveys, interviews, and comprehensive website audits, were employed to gather data on the experiences of international students. Key challenges identified include difficulties in navigating the university's website, a lack of clear organization of support resources, and the cultural and linguistic barriers that complicate access to critical information. Based on these challenges, the thesis outlines the development of "Belong," a digital platform specifically tailored to meet the needs of international graduate students. The design process involved the use of wireframes, card sorting exercises, and iterative user testing to ensure that the platform's structure aligns with users' mental models and priorities. The final design features a streamlined information architecture, intuitive navigation, and a cohesive visual identity that reflects both the University of Alberta's branding and the unique needs of its international student population.

The “Belong” platform aims to provide a centralized, easily navigable resource that addresses the most pressing concerns of international students, including cultural adaptation, health and wellness, housing, and academic support. By improving the visibility and organization of these resources, the aim of this platform is to reduce the anxiety associated with transitioning to a new environment and to foster a stronger sense of community and belonging among international students. This research contributes to the field of user experience design in education by offering a model for enhancing information accessibility and user engagement for diverse student populations. The findings and methodologies presented in this project can be applied to similar challenges in other educational contexts, paving the way for more inclusive and effective digital solutions.

Keywords:

Cultural Adjustment

Cultural Shock

Design Thinking

Digital Technologies

Information Accessibility

Information Architecture

Information Design

International Graduate Students

Molecules

Prototype

Student Well-being

Support Resources

Tree Testing

University of Alberta

User Experience Design

User Journey Flow

User Research

Usability Testing

UX in Education

Wireframes

Acronyms:

CBIE - Canadian Bureau of International Education

ICEF - International Consultants for Education and Fairs

HMW - How Might We

IA - Information Architecture

NAFSA - Association of International Educators

PERMA - Positive Emotions, Engagement, Relationships, Meaning, Achievement

SIN - Social Insurance Number

UI - User Interface

UNESCO - United Nations Educational, Scientific and Cultural Organization

UX - User Experience Design

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1. Introduction

The influx of international students into higher education institutions continues to grow, with Canada being a prime destination. As students embark on their academic journeys, they encounter numerous challenges in adapting to a new cultural and educational environment. Information accessibility plays a pivotal role in easing this transition, yet many international students struggle to navigate the resources available to them due to unfamiliarity with local norms, regulations, and academic systems. Technology plays a significant role in the way we learn and grow. With the increasing demand for online education, the role of User Experience (UX) Design in education has become more critical than ever before (LaVaque, 2023). Today's tech-savvy students have high expectations of what a digital experience should offer, and they inevitably bring those expectations to campus. Every online interaction they have with an institution—from applying to enrolling to registering and beyond—leaves an impression (Ellucian, n.d.)

This research focuses on exploring methods for integrating information presentation into user experience design in order to enhance the visibility and accessibility of information for the target audience: international graduate students. By employing user-centered design principles, the aim of this study is to develop an intuitive informative platform that aligns with the cognitive and behavioral patterns of our end users. The goal of this study is to create a seamless user experience by implementing techniques such as information architecture, interactive visualizations, and effective content organization to cater to the specific needs of students. This approach is intended to address the unique needs of international students,

aiding them in navigating their new environment, reducing anxiety, and enriching their overall educational experience. This research also examines the role of user testing in continuously refining and improving the platform to meet the evolving needs of the student population. This thesis project aims to inform and inspire innovation and advancement in user experience design in different contexts and domains, providing a framework that can be applied to enhance the accessibility and usability of information for diverse communities globally. By addressing these broader implications, the research seeks to contribute to a deeper understanding of how to support international users effectively in various environments, paving the way for more inclusive and user-centered design practices.

1.1 Background

Canada is the world's third-leading destination for international students seeking higher education degrees (Institute of International Education, 2023). Canada saw 63% growth in international students over the previous five years (2018 - 2023) and more than 200% growth over the last decade (Canadian Bureau of International Students, 2023). With a growing number of international students choosing Canada as their preferred destination for higher education, the country is becoming a hub for global learning and innovation (ICEF monitor, 2023). Consequently, international students play a critical role in Canada's communities, enriching Canada's social, cultural, and economic landscape (Government of Canada, 2024). However, we know little about these students' adjustment to Canadian academic environments. As international students pursue their academic dreams in foreign countries, they encounter various difficulties that make their journey challenging. For most international

students, entering Canadian universities and colleges can be an overwhelming life - and cultural transition. One of the biggest hurdles is adjusting to a completely different educational environment, which is starkly different from their own, both in terms of language, culture, and pedagogical traditions. Studies have explored the challenges and hurdles experienced by international students attending institutions of higher education in Canada. These difficulties include but are not limited to: language difficulties, difficulties adjusting to the academic culture, misunderstanding and complications in communication with faculty and peers, stress, anxiety, feelings of isolation, social experiences, culture shock, financial hardships, lack of appropriate accommodation, isolation and loneliness, and any adaption in their daily life (Wu et al., 2015). These students often find themselves struggling with fundamental questions such as where to seek assistance and what kind of institutional support is available to them. Despite these challenges, international students continue to persevere in their academic pursuits.

Universities often provide extensive support to international students, addressing various aspects of their lives to support their academic and personal experiences. From academic resources to financial assistance, mental health services, and physical well-being, universities offer a wide range of information and services to help students excel. One of the many ways universities can communicate about this with students is through their website, which is considered to be the face of the organization (Stephanie J. Jones & Katrina A. Meyer, 2012). The university's website also represents the organization as a whole, its culture, values and vision. With the help of a website, universities all over the world can provide information

regarding their academic programmes, teaching and campus facilities, research opportunities and student affairs (Peker et al., 2016). This applies not only to students but also to their various other stakeholders such as faculty, parents, other staff, researchers, alumni and prospective students (Basher et al., 2014; Devi & Sharma, 2016). These stakeholders require clear and easily accessible directions that present all the necessary information, including details that may be unfamiliar to them. Hence, the websites play a crucial role in accessing accurate information (Manzoor et al., 2012; Peker et al., 2016)

1.2 Problem Statement

While the University of Alberta already has an existing main website, the project being developed serves as an extension specifically designed to address the needs of international students. With over 50% of the student population consisting of international students, their contribution to the university's growth and community-building is substantial. This research is important not only because it reflects several experiences of international students, but also because it aims to improve access to resources for all students. Due to their unfamiliarity with the cultural nuances and the educational system of their new country, students are often unaware of laws and regulations pertaining to housing, employment, or lifestyle in their new country. They may also be unaware of the cultural expectations surrounding personal interactions or communication styles. This lack of awareness can impede their ability to engage with the resources offered by the universities fully and make the most of their educational experience. Data from the Canadian Bureau of International Education (CBIE) highlights that 60% of international students report feeling overwhelmed by the cultural

adjustment process. Furthermore, research conducted by Wu et al. (2015) found that international students who do not engage effectively with university resources are at a higher risk of experiencing academic difficulties, social isolation, and mental health issues. These students may struggle with lower academic performance, increased stress, and a sense of isolation, which can lead to higher dropout rates. Therefore, ensuring that international students can access and utilize support resources is critical for their success and well-being. This research is important because it addresses the critical gap in information accessibility for international students, which is essential for their academic and social integration. By improving how universities present and organize information, we can significantly enhance international students' ability to navigate their new environment, reduce anxiety, and improve their overall educational experience.

The absence of effective information accessibility and support resources on university websites significantly impacts international students' adjustment process and overall experience (Hughes, 2006). Addressing this issue is imperative because well-structured and easily accessible information can greatly facilitate a smoother transition, reduce anxiety, and enhance the academic and social integration of international students (Manzoor et al., 2012). By providing comprehensive and user-friendly resources, universities can ensure that international students feel supported and welcomed, ultimately contributing to their success and satisfaction (Stephanie J. Jones & Katrina A. Meyer, 2012).

1.3 Terminology

The following section provides definitions of important terms used in the paper:

1.3.1 International Student

International students are defined as non-Canadian students who do not have "permanent resident" status and have had to obtain the authorization of the Canadian government to enter Canada with the intention of pursuing an education. In other words, international students are those who have come to Canada expressly to pursue their education (Statistics Canada, 2013)

1.3.2 Higher Education

Higher education is referred to as "education at a university or college, where subjects are studied at an advanced level" (Higher Education, 2010)

1.3.3 Cultural Adjustment

Adapting to a new environment takes time and the pace of transition varies from person to person. The typical pattern of cultural adjustment often consists of distinct phases: Honeymoon, Crisis, Recovery, and Adjustment. Notice that this cycle is then repeated upon re-entry to one's home country or culture of origin. The effect these phases have on one's mood is illustrated with this “w-curve” figure:

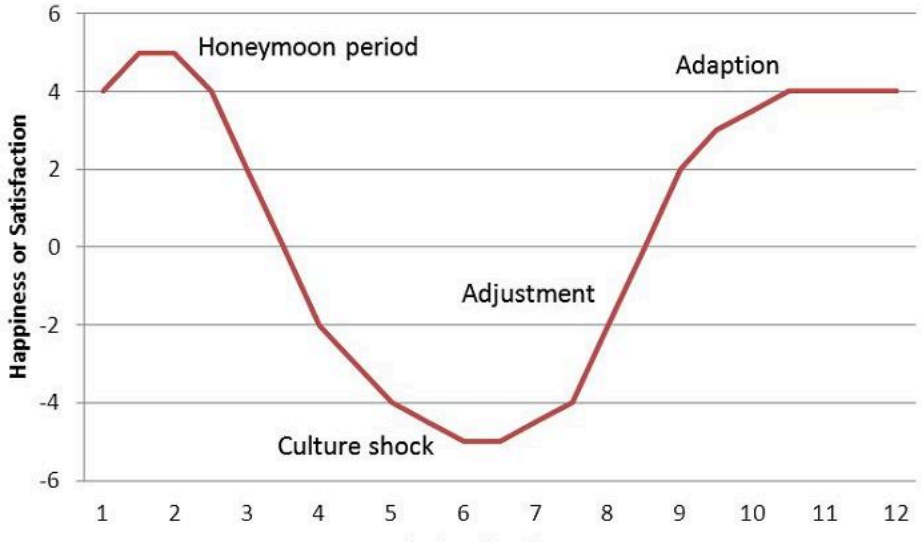


Figure 1: Cultural Shock Curve (Cultural Adjustments, International Students & Scholars, UC Merced)

1.3.4 Cultural Shock

The values, social norms, and traditions in the U.S. may be very different from beliefs about "how things should be" in the country where you grew up. When individuals move to another culture, they naturally carry their own background and life experiences with them, and these shape how they perceive and adjust to their new environment. For example, some students may find American classroom culture easy to adjust to, while others may struggle significantly in a new area. "Culture shock" is a common experience that describes the feelings of confusion, stress and disorientation that occur when entering an unfamiliar culture. It's important to recognize that individuals may react differently to cultural adjustment, with symptoms of culture shock manifesting in varying degrees and at different times for each person. Common reactions to culture shock include:

1) extreme homesickness
2) avoiding social situations

3) physical complaints and sleep difficulties
4) difficulty with coursework and inability to concentrate
5) becoming angry over minor irritations
6) significant nervousness or exhaustion

(Cultural Adjustment, University of Texas at Austin)

1.3.5 Sociocultural adjustment

Sociocultural adjustment is a dynamic process that can lead to a good level of fit between a person and the environment (Razgulin et al., 2023). The ability of an individual to adapt to a new environment is referred to as sociocultural adjustment. In the process of sociocultural adjustment, a person gains new skills and competencies needed to cope with different challenges of everyday life in a new cultural environment.The adjustment process in a new culture involves acquiring language proficiency, understanding nonverbal communication cues, and learning social etiquette and manners. Additionally, skills in networking, relationship-building, and cultural sensitivity help individuals navigate their new environment and integrate into the local community.

1.3.6 Support resources

Support resources for international students offered by universities include a wide range of services to assist students in various aspects of their lives. These resources may include mental health and well-being support, counseling services, support groups, and mental health awareness programs. Universities often offer assistance with practical matters, such as

housing, visa and immigration issues, and cultural adjustment support. Financial aid and career services may also be part of the support resources available to international students to help them navigate the challenges of studying in a new country and prepare for their future.

In this study, similar initiatives at several institutions were examined, including the University of British Columbia, the University of Melbourne, the University of Sydney, Imperial College London, and the University of Edinburgh. Each of these universities provides a comprehensive range of support services designed to meet the diverse needs of international students, from mental health support to cultural integration programs. Analyzing these examples, the commonalities and unique approaches different institutions take to support their international student populations.

1.3.7 Student well-being

Well-being is the state of feeling good and functioning well in your life. One of the most influential conceptual models to explain well-being is known using the acronym PERMA. PERMA, proposed by Martin Seligman, a pioneer in the field of positive psychology, consists of five pillars that collectively define well-being (Seligman, 2011).

- Positive emotions—feeling good
- Engagement—being completely absorbed in activities
- Relationships—being authentically connected to others
- Meaning—purposeful existence
- Achievement—a sense of accomplishment and success

Many studies have consistently shown that students' well-being encompasses a set of skills that can be intentionally and explicitly cultivated and developed through education and appropriate support.

1.4 Objectives and Purpose

The objectives of this research are to:

1) Understand the way that information about support resources is presented to international students at the University of Alberta.
2) Identify the gaps between the presentation of information and the students' comprehension of these support resources.
3) Understand the challenges they face when they move to Edmonton, and gather information about what the university offers to help them navigate these problems.
4) Design an instructional, and accessible support guide for international students moving to Edmonton.

The purpose of this project is to develop a digital platform that provides access to the resources University of Alberta provides for international students moving to Edmonton, Canada, to pursue their higher education degrees. The goal is to ensure that international students have a smooth transition, feel supported, and can successfully integrate into the academic and social life at their new institution. By providing comprehensive and easily navigable resources, the platform seeks to enhance the overall student experience, reduce the stress associated with moving to a new country, and improve students' well-being.

1.5 Research Methods and Analysis

The research activities involve a comprehensive analysis that combines both qualitative and quantitative methods. To accomplish the above objectives, the following research methods were employed.

1.5.1 Surveys:

Participants were selected by utilizing a recruitment strategy that involved placing posters around the University of Alberta campus. These posters specifically invited international graduate students to participate in the study. By using this open-call approach, a diverse group of participants with varying backgrounds and perspectives was gathered, ensuring that the research could capture a broad range of insights and address the needs of the international student community effectively. After gathering interested participants, extensive surveys were conducted with a culturally diverse group of five international graduate students from Iran, Chile, Mexico, and India. These students had been studying at the University of Alberta for varying periods, ranging from three months to two years, providing a wide range of perspectives and experiences to inform the research. The surveys aimed to evaluate the perceptions of the university's website, their ease of accessing information, and the challenges they faced while preparing to move to Edmonton and during the first six months after their arrival. The survey questions were designed to cover key areas including familiarity with essential documentation processes such as obtaining a Social Insurance Number and an Alberta Health Care Card. Additionally, the survey sought to identify primary

sources of information, evaluate the ease of website navigation, and measure overall satisfaction with the support resources available to international students.

1.5.2 Website Audit:

A website audit was carried out to evaluate user experience design and information accessibility. This analysis involved a detailed review of approximately 12-15 web pages on the University of Alberta website that contained crucial information on housing, documentation, wellness and health, food resources, cultural adaptation resources, scholarships and other similar resources. The audit focused on identifying usability issues, navigation difficulties, and gaps in the availability of information for international students. Data was recorded as field notes and grouped using thematic analysis to identify patterns and areas needing improvement. The goal was to pinpoint specific areas where the website could be enhanced to better serve the needs of its users.

1.5.3 Activities (Card Sorting and Usability Testing):

User experience (UX) activities, including card sorting and usability testing, were conducted to gain insight into how international students interact with the university's website and to identify potential improvements. Card sorting sessions (Nielsen Norman Group. (n.d.). helped in understanding how students categorize and prioritize information, which informed the restructuring of website content. Usability testing (Nielsen Norman Group. (n.d.) involved observing students as they navigated through

high-fidelity wireframes of the redesigned website, allowing for the identification of pain points and the collection of feedback on the ease of use and accessibility of information. These activities were essential in creating a more intuitive and user-friendly website structure.

1.6 Overview

The thesis is structured into several chapters, each addressing different aspects of improving information accessibility for international graduate students at the University of Alberta.

Introduction provides the background and context of the study, highlighting the challenges faced by international students and the importance of user experience design in information accessibility.

Literature Review examines existing research on the impact of digital technologies on the education sector, the importance of information accessibility for international students, and the role of digital information presentation. It also discusses the diversity of international students and factors influencing their adjustment process.

Qualitative Study details the research methods used, including surveys and interviews with international graduate students, and a comprehensive audit of the existing University of Alberta website. It also identifies design opportunities to improve the website's information accessibility and architecture.

Design Process describes the steps taken to design the interactive platform “Belong.” It includes user personas, brainstorming sessions, card sorting exercises, and the development of prototypes and wireframes. The chapter emphasizes the importance of user testing and feedback in refining the design.

Conclusion summarizes the study, discusses key findings and implications, provides recommendations, and outlines challenges and limitations of the research. It also suggests areas for future research.

1.7 Summary

The aim of the study is to design an interactive platform that increases visibility and information accessibility about the support resources available for international graduate students at the University of Alberta. The goal is to make the transition phase of international students to a new country smooth and hassle-free to improve their academic success, mental and physical well-being, and overall satisfaction with the university experience. The platform will help international students engage with campus services, stay informed about campus resources and policies, and overcome the challenges posed by their cultural backgrounds and verbal competencies.

2. Literature Review

With the increasing significance of international students in Canadian universities, the demand for effective adaptation strategies is growing. This shift highlights the need for improved information accessibility within university settings to support the integration and success of these students. The integration of User Experience (UX) design principles in educational platforms is one of the ways that can address these challenges. Despite the critical role of digital technologies in improving information accessibility, many international students still face difficulties due to cultural and systemic barriers. This literature review examines the current state of digital technologies in education, focusing on their impact on information accessibility for international students. It starts by exploring the general impact of digital technologies on the education sector and the role of user experience design in enhancing accessibility. To better understand the specific needs and challenges of international graduate students, literature outlines the importance of accessible information for this group, highlighting the gaps in current university resources and potential solutions. By synthesizing relevant research, this review provides a comprehensive foundation for developing more effective and user-friendly information platform suitable to the needs of international students at the University of Alberta.

2.1 Information Accessibility Through Digital Technologies in Education

The internet has given rise to new communication channels, significantly expanding the options for transmitting and accessing educational information (Haleem et al., 2022). Digital technologies have revolutionized the education sector by enhancing the accessibility of information for learners and educators alike. Educational institutions are increasingly incorporating digital tools and platforms into their practices to ensure that students can easily access the information they need for their studies. These digital resources, such as educational applications and websites, play a crucial role in making educational content more accessible and understandable (Haleem et al., 2022). According to a study by the National Center for Education Statistics, 94% of public schools in the United States had internet access in 2019, highlighting the growing prevalence of digital technologies in education (National Center for Education Statistics, 2019). This widespread connectivity has led to the development of various digital tools and platforms designed to improve information availability and accessibility.

Universities use Google Docs, Microsoft Office 365, and other collaborative platforms to facilitate access to shared documents, peer feedback, group projects, and real-time co-authoring. These tools enhance communication, creativity, and teamwork, making information more accessible and interactive for students (How Are Schools and Universities Adopting Digital Technologies to Manage Educational Processes?, n.d.). However, the integration of digital technologies in education is not without challenges. One significant issue is the digital divide, which refers to the unequal access to digital technologies and the internet.

This divide can limit some learners' ability to access essential educational resources and information (Warschauer and Matuchniak, 2010). Additionally, the lack of digital literacy skills can hinder learners' ability to effectively use digital tools and access information efficiently (Hargittai, 2010). Addressing these challenges is essential to ensure that all students can benefit from improved information accessibility facilitated by digital technologies.

2.2 Importance of information accessibility for international students

When students leave their home country, they undergo both a physical and psychological journey of cross-cultural adaptation (Yang et al., 2005). This adaptation requires significant changes in behavior, thoughts, and emotions as students adjust to a new cultural environment. According to Yang, Noels, and Saumure (2005), cross-cultural adaptation is not only about learning the new culture but also involves the negotiation of one's identity in the context of a different social structure. This identity negotiation can be particularly challenging as students may struggle with maintaining their cultural heritage while adapting to new social norms and expectations.

The process of adaptation is further complicated by cultural attributes that create barriers to accessing information. These barriers include differences in communication styles, such as body language and gestures, which can lead to misunderstandings. Social class and religious beliefs can also influence how students perceive and engage with the information. Moreover, international students often come from educational backgrounds where they are expected to take on passive learner roles, making them hesitant to actively seek help or engage with

authority figures (Liao, Finn, & Lu, 2005). This reluctance can be compounded by feelings of shyness or or an overwhelming fear of judgement, which further limits their ability to access critical resources and support.

The psychological stress of balancing these competing demands—adapting to a new culture while maintaining one's cultural identity—can exacerbate feelings of isolation and anxiety, making it even more difficult for students to integrate into their new environment. As Yang et al. (2005) note, this complex interplay of factors underscores the need for targeted support services that not only provide information but also address the emotional and identity-related challenges that international students face during their adaptation process.

Following are two key reasons for the importance of accessible information for international students:

2.2.1 Adapting to a new country

The first few days in a new country are crucial for international students as these days set the tone for the rest of their time abroad. This period can be both exciting and overwhelming, as students adjust to a new environment, culture, and social norms (Gaining an Employment Edge - The Impact of Study Abroad, n.d.). A study published in the Journal of International Students found that the first few days and weeks in a new country can significantly impact students' mental health and well-being (Smith, R. A., & Khawaja, N. G. (2011) The study highlighted the importance of providing resources such as health and wellness services,

cultural adaptation support, and essential life resource to help students cope with the challenges of adjusting to a new environment.

Understanding various aspects of life in a new country is essential for international students, including local customs, transportation options, and healthcare services. By providing clear and organized information, universities can significantly alleviate the burden for international students. This approach can boost their emotional well-being, instill confidence, and reduce anxieties related to the unknown aspects of university life.

2.2.2 Accessibility Challenges for International Students at the University of Alberta

According to the University of Alberta International Student Services Department, the University of Alberta is renowned for its commitment to providing comprehensive support and resources for international students (University of Alberta. (n.d.). International Strategic Plan.). These resources cover a wide range of areas, including academics, finances, mental health, and physical well-being, and are aimed at ensuring that all students receive the assistance they need to thrive in their studies and beyond. However, despite the best intentions, the current approach to delivering this information may be hindering students' ability to fully access and benefit from these resources. This observation is based on a website audit conducted as part of this research, which revealed that all of the information, including the details of the programs for graduates and undergraduates, admission process, services, faculties, support resources, etc., is located on a single web portal - a web portal is a centralized platform that provides users with a single access point to various resources and

services, integrating them into one cohesive system. This makes it difficult for students to navigate through multiple pages and find the information they need because the information is spread across a single web portal without clear segmentation. When all resources, from academic programs to support services, are grouped together without a clear organizational structure, it creates a cluttered and overwhelming experience for users. Students may struggle to locate specific details amidst a sea of information, leading to confusion and frustration. This challenge is compounded by other factors, such as language proficiency and cultural background, as well as the stress and anxiety of adjusting to a new environment. All of these factors can make it difficult for international students to plan their schedules, access campus services, and stay informed about important resources and policies (Hughes, H., 2006).

2.3 Diversity of International Students

Canada's universities and colleges today reflect an increasingly diverse array of student groups whose participation in post-secondary learning is challenging educators to respond more creatively to the differences they represent. Such groups span a variety of demographics and identities, some historically disadvantaged and others emerging as marginalized groups on campus seeking a stronger voice in matters that affect them (Cox & Strange, 2016)
The University of Alberta is a top destination for some of the brightest international students—more than 8,400 students from around the world currently study at the U of A. These students are an important part of our vibrant and diverse campus community and learning environment. International students join the University of Alberta to pursue their

academic interests, expand their knowledge of the world, develop skills and competencies, gain independence and personal development, advance their career prospects, and build lifelong friendships and networks (University of Alberta International Strategic Plan)

2.4 The Evolving Role of Graduate Students in Higher Education

Graduate students, particularly international ones, have made significant contributions to higher education institutions. According to Simmala (2008), international graduate students, especially those from Asia, have enriched the academic landscape of Western institutions through their diverse perspectives and advanced academic expertise OBJ. Their presence not only bolsters the intellectual capital of these institutions but also enhances cultural diversity, which is essential in fostering global collaboration and understanding within academic environments.

Simmala (2008) also highlights the contributions of these students in terms of research and innovation. They are often at the forefront of research initiatives, playing key roles in advancing scientific knowledge and academic inquiry. Their work supports the growth and global competitiveness of Western universities, as they often bring unique approaches and problem-solving strategies that stem from their diverse cultural and academic backgrounds .

Despite these contributions, international graduate students face significant challenges, particularly in terms of cross-cultural adjustment. Simmala (2008) notes that while these students are typically among the top achievers in their home countries, the transition to a new

educational system can be daunting, leading to struggles with academic performance and psychological well-being. The balance between their contributions and the challenges they face highlights the need for institutions to provide greater support to ensure their success in both academic and social settings [OBJ].

As DePauw (2019) further elaborates, the role of graduate education is a critical component of the evolving university landscape. Universities must be forward-thinking, adaptive, and transformative to meet the demands of the 21st century, and graduate students play an essential part in this transformation. Their interdisciplinary and innovative research not only drives institutional change but also prepares future leaders to tackle the challenges faced by modern universities.

2.5 The Role of Digital Information Presentation

The presentation of information plays a crucial role in learning, as it can significantly impact the effectiveness of the learning experience. Effective information presentation can help learners understand complex concepts, retain information, and apply what they have learned in real-life situations. According to a study by Mayer and Moreno (2003), the use of multimedia presentations, such as text, images, and audio, can enhance learning by increasing learners' cognitive processing and reducing cognitive load. Additionally, the use of visual aids, such as graphs and diagrams, can help learners understand complex information more easily and retain it for longer periods (Felder and Silverman, 1988).

2.5.1 Information for Learning

"Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations." (UNESCO, n.d.)

Using information to learn encompasses all types of intellectual and physical engagement with information. Extending beyond information skills, it includes accessing, searching for, processing, evaluating, synthesizing and communicating information, as well as using information critically, ethically, creatively and wisely to develop understanding and new knowledge (Hughes, H., 2006). The use of information consists of the physical and mental acts involved in incorporating the information found in the person's existing knowledge base. It may involve physical acts such as marking sections in a text to note their importance or significance, as well as mental acts that involve, for example, comparison of new information with existing knowledge (Wilson, 2000, pp. 49-50).

The design of a separate interactive platform that presents information in a clear and concise manner can help international graduate students at the University of Alberta better understand the resources available to them and how to access them effectively. By presenting information in a way that is easy to find, understand and retain, the platform can help overcome potential language and cultural barriers and ensure that international graduate students can access information regarding the resources available. Another observation,

considering the diverse cultural and language proficiency of international students, is that the website can include inclusive design principles to make sure that the information presented is in a manner that is accessible and understandable to individuals with varying levels of language proficiency.

2.6 Factors Influencing the Adjustment Process

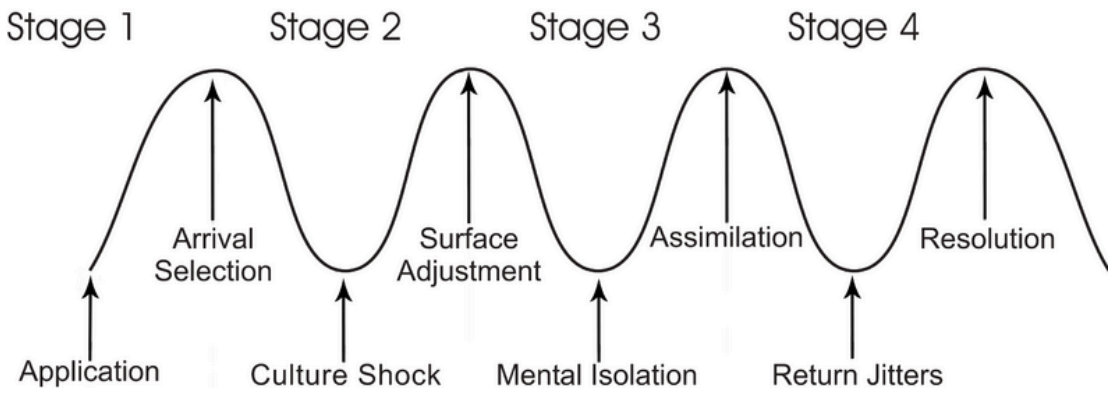


Figure 2: Cultural Adjustment Cycles (AFS, Intercultural Program)

Adjustment is a multidimensional process that involves several factors. Cultural, social, academic, and psychological adjustment of international students, students' early life experiences, resilience, self-efficacy, spiritual and social support, coping style, personality, and emotional and cultural intelligence are important components of the adjustment process. It is a unique process, and each student may experience associated issues differently. While adjustment issues are common among international students, the surveys consistently indicates that they underutilize mental health services. Research suggests that cultural mistrust, the stigma associated with mental illnesses, and lack of resources (health insurance, financial strain) are contributing factors to international students' mental

health.Universities and colleges are encouraged to integrate services or create an international program within the university that promotes wellness and makes the transition less stressful. Students are encouraged to take advantage of programs offered by their university, such as counselling services, mentorship, tutoring, and other culturally sensitive activities that promote a seamless transition (Mesidor & Sly, 2016).

3. Qualitative and Quantitative Study

3.1 Surveys and Interviews

To gain a deeper understanding of the experiences of international graduate students at the University of Alberta, I conducted a survey with a diverse group of six individuals from countries including India, Mexico, Chile, and Iran. The participants had been studying at the university for periods ranging from three months to two years. The primary objective of the survey was to evaluate their perceptions of the university's website and assess their ease in accessing the information provided.

Survey questions were designed to cover key areas such as the duration of stay, familiarity with necessary documentation processes, accessibility of information sources, ease of website navigation, and overall satisfaction with the support resources available online. The survey was administered online via Google Forms, ensuring anonymity and encouraging honest feedback. This approach allowed for a broad and diverse set of responses, reflecting a range of experiences and challenges faced by international students.

Data Collection

Data was collected through an online survey distributed via Google Forms. The survey was shared with international graduate students through university email and social media platforms like Instagram, targeting relevant student communities. In alignment with the ethical guidelines set forth by the University of Alberta, personal identifiers were not collected,

and participants were fully informed of their rights, including the ability to withdraw from the study at any time without consequence.

Participation in the study was voluntary, and participants were provided with an informed consent process that detailed the nature of the research, the potential risks, and their right to confidentiality. The survey design was structured to minimize any potential risks, with participants assured that their responses would be used solely for research purposes and handled with discretion. To further protect participant privacy, all data was securely stored on the researcher's encrypted personal computer, with access strictly limited to the researcher and their supervisor.

The study adhered to a minimal risk framework, ensuring that the probability and magnitude of possible harms implied by participation were no greater than those encountered in everyday life. By incorporating these ethical considerations, the research ensured the protection of participants' rights and maintained the integrity of the data collection process. This ethical diligence was critical in fostering trust with participants and ensuring the reliability and validity of the research findings.

Survey Outcomes

The survey revealed several key insights into the challenges faced by international students and their interactions with the university's website:

Information Accessibility:

1. Information accessibility emerged as a crucial factor for international students, particularly those new to Canada. One participant mentioned struggling to find affordable housing options in the city, while another felt isolated due to the new environment. It is essential that this information is available on the University of Alberta's website, rather than solely on the City of Edmonton's site, for example, because the university serves as the primary and most trusted resource for international students as they transition into their new lives. Additionally, the university may offer specific partnerships or programs tailored to its student body that would not be highlighted on a general city website. Providing this information through the university's channels ensures that it comes from a trusted source, directly relevant to the students' needs, and helps foster a supportive community that acknowledges the holistic challenges students face beyond academics.
2. Despite the availability of important information on the university website, many participants preferred seeking assistance from peers, online resources, and personal networks. However, relying on these external sources can sometimes lead to issues with convenience and the authenticity of information. This highlights the importance of making the university's website a more trusted and reliable source for students. Improving accessibility and transparency will enable the website to become the primary resource for students, minimizing their reliance on potentially less reliable external sources.

Mental Health and Well-being:

1. As the participants commenced their academic journey, they encountered a multitude of challenges, including homesickness, housing uncertainties, cultural adaptation, health issues, financial strains, social isolation, and academic stress, which collectively exerted a toll on their mental health, feelings of anxiety, depression, and overall psychological distress, thereby affecting their well-being.
2. Almost every participant noted that the website lacked adequate advice on handling these difficulties, which had a profound effect on their well-being.

Website Navigation:

1. Approximately 75% of participants found it somewhat difficult to locate necessary information about documentation, health and wellness, for example, about university resources on the website.
2. All participants felt overwhelmed and confused while interacting with the website, struggling to find ways to establish social connections, adjust to a new culture, find affordable living resources, and participate in campus events and activities as quotes by a student, “I felt completely lost on the university website. Whenever I try to look for something, it seemed like I was just going in circles.”

How students gather information:

1. Participants used various methods to obtain information, including visiting locations in person, asking for help on social media platforms, and relying on online resources recommended by peers.
2. They assessed the reliability and credibility of online support resources using trial and error, peer recommendations, and the university's website.

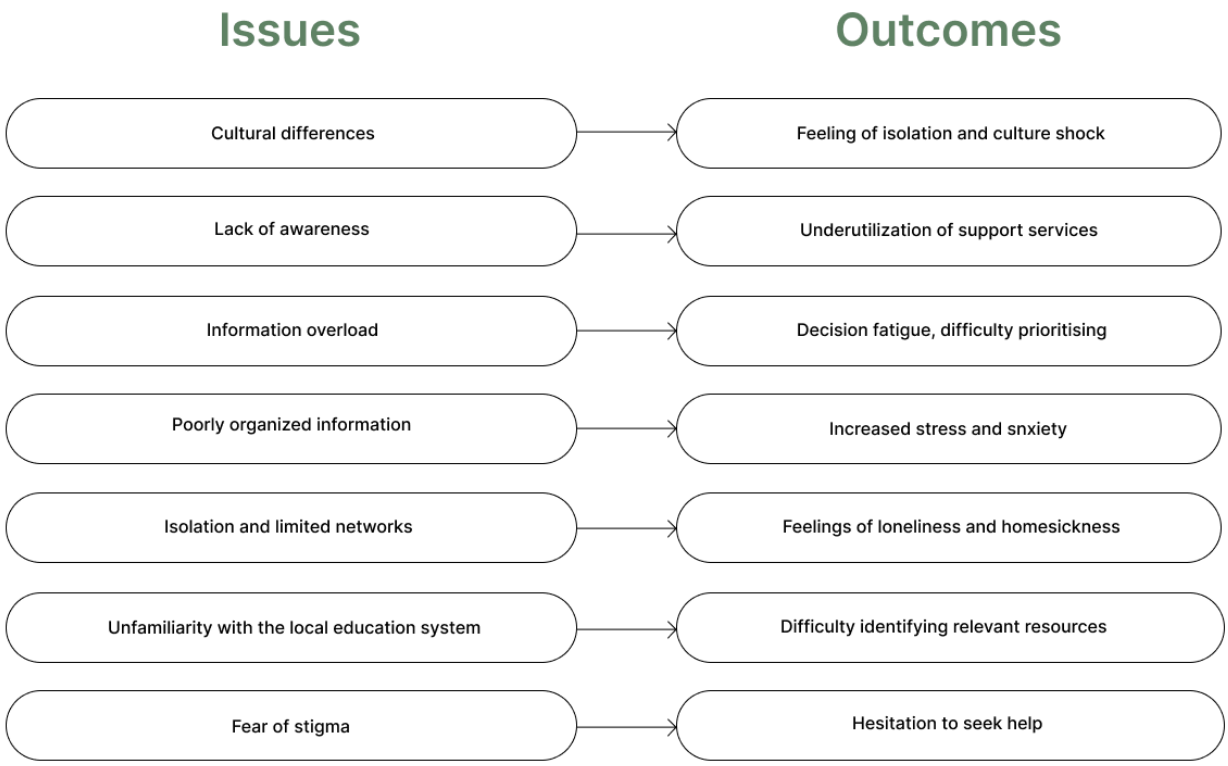


Figure 3: Challenges and Their Impact on International Students' Access to Support Resources

The survey findings indicate that international students at the University of Alberta encounter significant difficulties in finding information on the university website. This can be a substantial barrier to successfully navigating their academic journey. Students have expressed the need for more comprehensive support to help them overcome these challenges. The feedback provided highlights the the critical need for improving the accessibility, clarity, and reliability of the online information and support resources available to international students.

3.2 Analysis of the Existing University of Alberta Website

To study the University of Alberta's website, it was necessary to understand what resources the university provides and why students are unable to find them .An effective approach to improve the user experience is by conducting a thorough analysis of the current website, often referred to as a site audit. A site audit involves evaluating various aspects of the website, such as its structure, content, usability, and performance, to identify areas for improvement. This method allows for a comprehensive understanding of how well the website meets user needs and where it may be falling short. By examining factors such as page load times, navigation efficiency, and the clarity of information presented, a site audit can provide valuable insights into how the website can be optimized to better serve its users.
(Chaffey & Ellis-Chadwick, 2019).

The analysis began by systematically categorizing the types of information available on the website, such as health and wellness resources, essential documentation like Social Insurance Numbers and Alberta Health Cards, food and housing options, and cultural adaptation support. This categorization allowed for a more focused evaluation of how the information is presented. Following this, the website was thoroughly scanned to assess what specific information is available and how it is organized across different pages. Here are some examples of how the information is arranged, highlighting areas needing improvement in clarity and accessibility:

Example 1:

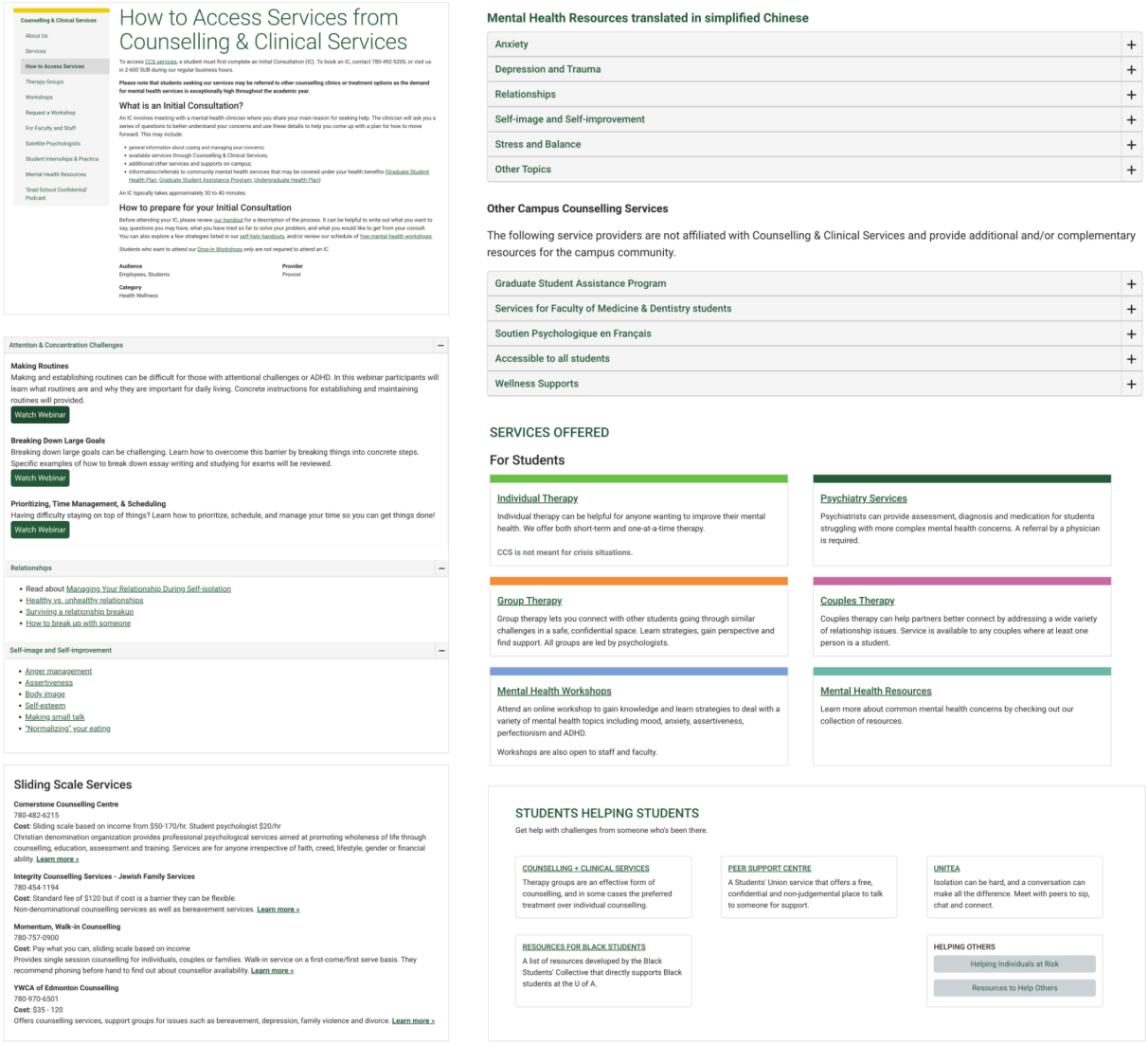
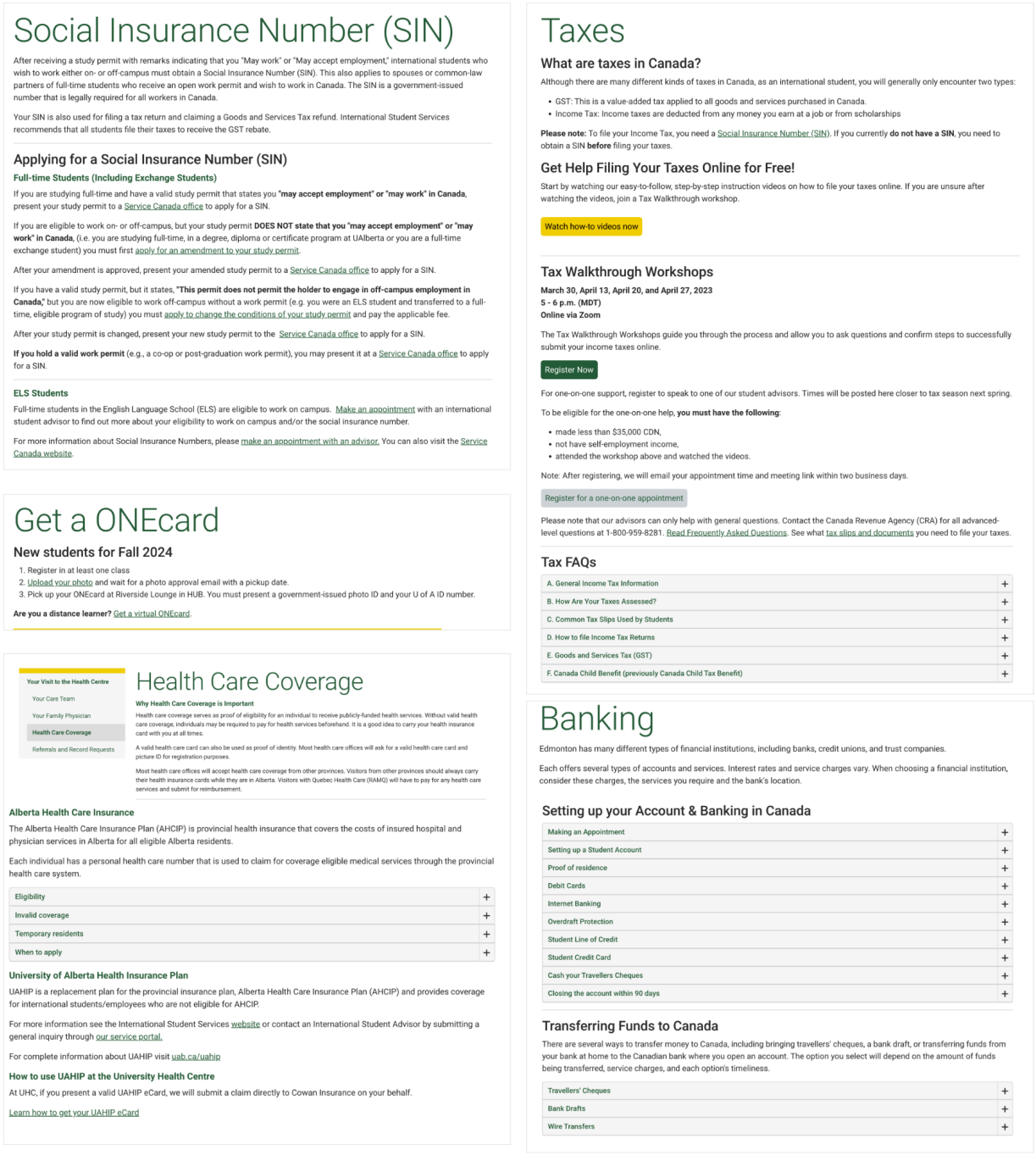


Figure 4: Information on Health and wellness resources is arranged on different pages on the University's website (Source: University of Alberta)

Example 2:



Social Insurance Number (SIN)

After receiving a study permit with remarks indicating that you "May work" or "May accept employment," international students who wish to work either on- or off-campus must obtain a Social Insurance Number (SIN). This also applies to spouses or common-law partners of full-time students who receive an open work permit and wish to work in Canada. The SIN is a government-issued number that is legally required for all workers in Canada.

Your SIN is also used for filing a tax return and claiming a Goods and Services Tax refund. International Student Services recommends that all students file their taxes to receive the GST rebate.

Applying for a Social Insurance Number (SIN)

Full-time Students (Including Exchange Students)

If you are studying full-time and have a valid study permit that states you **"may accept employment" or "may work" in Canada**, present your study permit to a Service Canada office to apply for a SIN.

If you are eligible to work on- or off-campus, but your study permit **DOES NOT state that you "may accept employment" or "may work" in Canada**, (i.e. you are studying full-time, in a degree, diploma or certificate program at UAlberta or you are a full-time exchange student) you must first apply for an amendment to your study permit.

After your amendment is approved, present your amended study permit to a Service Canada office to apply for a SIN.

If you have a valid study permit, but it states, **"This permit does not permit the holder to engage in off-campus employment in Canada,"** but you are now eligible to work off-campus without a work permit (e.g. you were an ELS student and transferred to a full-time, eligible program of study) you must apply to change the conditions of your study permit and pay the applicable fee.

After your study permit is changed, present your new study permit to the Service Canada office to apply for a SIN.

If you hold a valid work permit (e.g., a co-op or post-graduation work permit), you may present it at a Service Canada office to apply for a SIN.

ELS Students

Full-time students in the English Language School (ELS) are eligible to work on campus. Make an appointment with an international student advisor to find out more about your eligibility to work on campus and/or the social insurance number.

For more information about Social Insurance Numbers, please make an appointment with an advisor. You can also visit the Service Canada website.

Get a ONEcard

New students for Fall 2024

1. Register in at least one class
2. Upload your photo and wait for a photo approval email with a pickup date.
3. Pick up your ONEcard at Riverside Lounge in HUB. You must present a government-issued photo ID and your U of A ID number.

Are you a distance learner? Get a virtual ONEcard.

Your Visit to the Health Centre
Your Care Team
Your Family Physician
Health Care Coverage
Referrals and Record Requests

Health Care Coverage

Why Health Care Coverage is Important

Health care coverage serves as proof of eligibility for an individual to receive publicly-funded health services. Without valid health care coverage, individuals may be required to pay for health services beforehand. It is a good idea to carry your health insurance card with you at all times.

A valid health care card can also be used as proof of identity. Most health care offices will ask for a valid health care card and picture ID for registration purposes.

Most health care offices will accept health care coverage from other provinces. Visitors from other provinces should always carry their health insurance cards while they are in Alberta. Visitors with Quebec Health Care (RAMQ) will have to pay for any health care services and submit for reimbursement.

Alberta Health Care Insurance

The Alberta Health Care Insurance Plan (AHCIP) is provincial health insurance that covers the costs of insured hospital and physician services in Alberta for all eligible Alberta residents.

Each individual has a personal health care number that is used to claim for coverage eligible medical services through the provincial health care system.

- Eligibility +
- Invalid coverage +
- Temporary residents +
- When to apply +

University of Alberta Health Insurance Plan

UAHIP is a replacement plan for the provincial insurance plan, Alberta Health Care Insurance Plan (AHCIP) and provides coverage for international students/employees who are not eligible for AHCIP.

For more information see the International Student Services website or contact an International Student Advisor by submitting a general inquiry through our service portal.

For complete information about UAHIP visit uab.ca/uahip

How to use UAHIP at the University Health Centre

At UHC, if you present a valid UAHIP eCard, we will submit a claim directly to Cowan Insurance on your behalf.

Learn how to get your UAHIP eCard

Taxes

What are taxes in Canada?

Although there are many different kinds of taxes in Canada, as an international student, you will generally only encounter two types:

- GST: This is a value-added tax applied to all goods and services purchased in Canada.
- Income Tax: Income taxes are deducted from any money you earn at a job or from scholarships

Please note: To file your Income Tax, you need a Social Insurance Number (SIN). If you currently **do not have a SIN**, you need to obtain a SIN **before** filing your taxes.

Get Help Filing Your Taxes Online for Free!

Start by watching our easy-to-follow, step-by-step instruction videos on how to file your taxes online. If you are unsure after watching the videos, join a Tax Walkthrough workshop.

Watch how-to videos now

Tax Walkthrough Workshops

March 30, April 13, April 20, and April 27, 2023
5 - 6 p.m. (MDT)
Online via Zoom

The Tax Walkthrough Workshops guide you through the process and allow you to ask questions and confirm steps to successfully submit your income taxes online.

Register Now

For one-on-one support, register to speak to one of our student advisors. Times will be posted here closer to tax season next spring.

To be eligible for the one-on-one help, **you must have the following**:

- made less than $35,000 CDN,
- not have self-employment income,
- attended the workshop above and watched the videos.

Note: After registering, we will email your appointment time and meeting link within two business days.

Register for a one-on-one appointment

Please note that our advisors can only help with general questions. Contact the Canada Revenue Agency (CRA) for all advanced-level questions at 1-800-959-8281. Read Frequently Asked Questions. See what tax slips and documents you need to file your taxes.

Tax FAQs

- A. General Income Tax Information +
- B. How Are Your Taxes Assessed? +
- C. Common Tax Slips Used by Students +
- D. How to file Income Tax Returns +
- E. Goods and Services Tax (GST) +
- F. Canada Child Benefit (previously Canada Child Tax Benefit) +

Banking

Edmonton has many different types of financial institutions, including banks, credit unions, and trust companies.

Each offers several types of accounts and services. Interest rates and service charges vary. When choosing a financial institution, consider these charges, the services you require and the bank's location.

Setting up your Account & Banking in Canada

- Making an Appointment +
- Setting up a Student Account +
- Proof of residence +
- Debit Cards +
- Internet Banking +
- Overdraft Protection +
- Student Line of Credit +
- Student Credit Card +
- Cash your Travellers Cheques +
- Closing the account within 90 days +

Transferring Funds to Canada

There are several ways to transfer money to Canada, including bringing travellers' cheques, a bank draft, or transferring funds from your bank at home to the Canadian bank where you open an account. The option you select will depend on the amount of funds being transferred, service charges, and each option's timeliness.

- Travellers' Cheques +
- Bank Drafts +
- Wire Transfers +

Figure 5: Screenshots from different pages of information on collecting documents after arriving in Edmonton (Source: University of Alberta)

Firstly, when important information is spread across various sections without clear and logical organization, users often struggle to find the resources they need. This disorganized structure increases the cognitive load on users, making it difficult for them to piece together relevant information, which can lead to frustration and disengagement. Websites with overwhelming or cluttered layouts, where content is not easily scannable or organized, are especially prone to causing such frustrations. Users may find themselves lost, unable to navigate through the excessive options and text, which hampers their ability to interact with the website and find the information they are seeking increasing the cognitive load on users (Rees, n.d)

Secondly, the current layout of the University of Alberta's website appears dense and text-heavy, making it overwhelming for users to quickly locate specific information such as details about Social Insurance Number (SIN) applications, tax guidance, health care coverage, and banking information. This dense presentation can also cause information overload, overwhelming users and causing them to miss important details or give up searching altogether. Consequently, when users cannot easily find what they need, they may become frustrated and disengage from the website, potentially missing out on crucial support services.

Furthermore, the lack of interactive elements, such as search functions or filters, prevents users from easily locating specific information. Search functions and filters are crucial interactive elements that significantly enhance the user experience by allowing users to quickly locate specific information without having to sift through irrelevant content. Search

functions enable users to enter keywords or phrases to directly find the content they need, which reduces time and effort. Filters allow users to narrow down results based on specific criteria, such as categories, dates, or relevance, making it easier to access the most pertinent information (Nielsen Norman Group, n.d.) Users are required to click through multiple pages and sections to find the information they need, which can be particularly frustrating and overwhelming. This manual navigation process increases the likelihood of missing important details or becoming lost within the site, especially for users who are not familiar with systems in Canada. This issue can deter users from fully utilizing the available resources and support services, ultimately affecting their ability to access the help they need in a timely manner.

Following the initial website audits, along with insights gained from interviews and surveys with potential users, a clear need emerged to systematically categorize and organize the university's resources. This suggested the need for categorizing the resources into Social, Cultural, Economical, and Practical categories:

Figure 6: Categories of Support Resources for International Students

3.3 Design Opportunities

The analysis of the University of Alberta's website reveals several key opportunities to improve information accessibility and user experience for international students through design:

1. **Website organization:** Simplifying the navigation and layout by organizing information into smaller, more digestible sections with collapsible menus and tabs can significantly reduce cognitive load and improve ease of use.
2. **Consistent visual hierarchy:** Establishing a consistent visual hierarchy with clear headings, subheadings, and bullet points will help users quickly locate relevant information.
3. **Functionality:** Integrating search functions will enable users to efficiently find specific information without navigating through numerous pages.

4. **Interactivity:** Incorporating interactive elements such as tooltips, icons, and expandable sections can provide additional information on complex topics, creating a dynamic and engaging user experience.
5. **Visual elements**: Adding elements like icons, infographics, and images can break up text-heavy content, making it more engaging and easier to understand.
6. **Centralized landing page:** Creating a centralized dashboard or landing page that aggregates all essential resources will provide a single access point, reducing the need for extensive navigation. Developing features for a personalized user experience based on individual needs and preferences can enhance user engagement and satisfaction

3.4 User Experience Design Best Practices

When designing user experiences, following best practices ensures that the end product is both effective and user-friendly. The principles of UX design focus on creating interfaces that are intuitive, accessible, and centered around the needs of the user. According to Baymard Institute, there are several key best practices in UX design (Baymard Institute. (n.d.)

1. **User-Centered Design:** At the heart of UX design is a deep understanding of the users—who they are, what they need, and how they interact with the product. Designers should conduct thorough research, including user interviews, surveys, and usability testing, to gather insights that inform the design process.
2. **Simplicity and Clarity**: A good UX design is straightforward and easy to navigate. Unnecessary complexity can frustrate users and detract from their experience. Clear

visual hierarchies, consistent navigation, and easily digestible content help users find what they need quickly and without confusion.

3. **Consistency**:The use of consistency in design elements such as colors, typography, and button styles across the interface builds familiarity and trust with the user. This predictability allows users to learn and navigate the product more easily, enhancing their overall experience.
4. **Accessibility**: Ensuring that the design is accessible to all users, including those with disabilities, is essential. This includes providing text alternatives for images, ensuring sufficient color contrast, and designing for keyboard navigation, among other considerations.
5. **Feedback and Response**: Users should always receive feedback from the system in response to their actions. Whether it's a button press, form submission, or a loading screen, providing clear feedback helps users understand the results of their actions and guides them through the process.
6. **Responsive Design**: With the wide variety of devices and screen sizes in use today, it's crucial to design interfaces that are responsive and adaptable. A good UX design ensures that the experience is seamless across desktops, tablets, and mobile devices.
7. **Iterative Testing and Refinement**: UX design is an ongoing process. Regular testing with real users, collecting feedback, and making iterative improvements are key to refining the product and ensuring it meets users' needs effectively.

By integrating these UX design best practices, this platform is not only functional but also deeply attuned to the needs of international students. This ensures that the platform supports

their transition to life at the University of Alberta that provides them with the resources and guidance they need in a user-friendly and accessible manner.

3.5 Summary

Qualitative and Quantitative Study explores the challenges that international graduate students at the University of Alberta face in accessing information through the university's website. Through surveys and interviews with students from diverse backgrounds, the study highlights issues such as difficulties in website navigation, reliance on external sources for information, and inadequate mental health support. A comprehensive website audit revealed that the dense, poorly organized layout contributes significantly to these challenges. 3.4 identifies design opportunities to improve the user experience by simplifying navigation, creating a consistent visual hierarchy, etc, all aimed at enhancing information accessibility for international students. 3.5 discusses User Experience (UX) best practices as essential guidelines for improving the accessibility and usability of the University of Alberta's website for international students.

4. The Design Process

The design process used follows five key stages: Empathize, Define, Ideate, Prototype, and Test. This approach was selected due to its human-centered methodology, which prioritizes understanding users' needs and challenges throughout the design process (Dam, 2024)

The Empathize stage involves gaining a deep understanding of the users and their experiences, ensuring that solutions are tailored to address real-world problems. The Define stage focuses on clearly articulating the problem based on the insights gathered, guiding the direction of the project. During the Ideate stage, a wide range of potential solutions is brainstormed, fostering creative and innovative thinking. The Prototype stage involves creating tangible representations of ideas to explore their feasibility and usability. Finally, in the Test stage, these prototypes are evaluated with actual users, providing critical feedback for refinement (Dam, 2024).

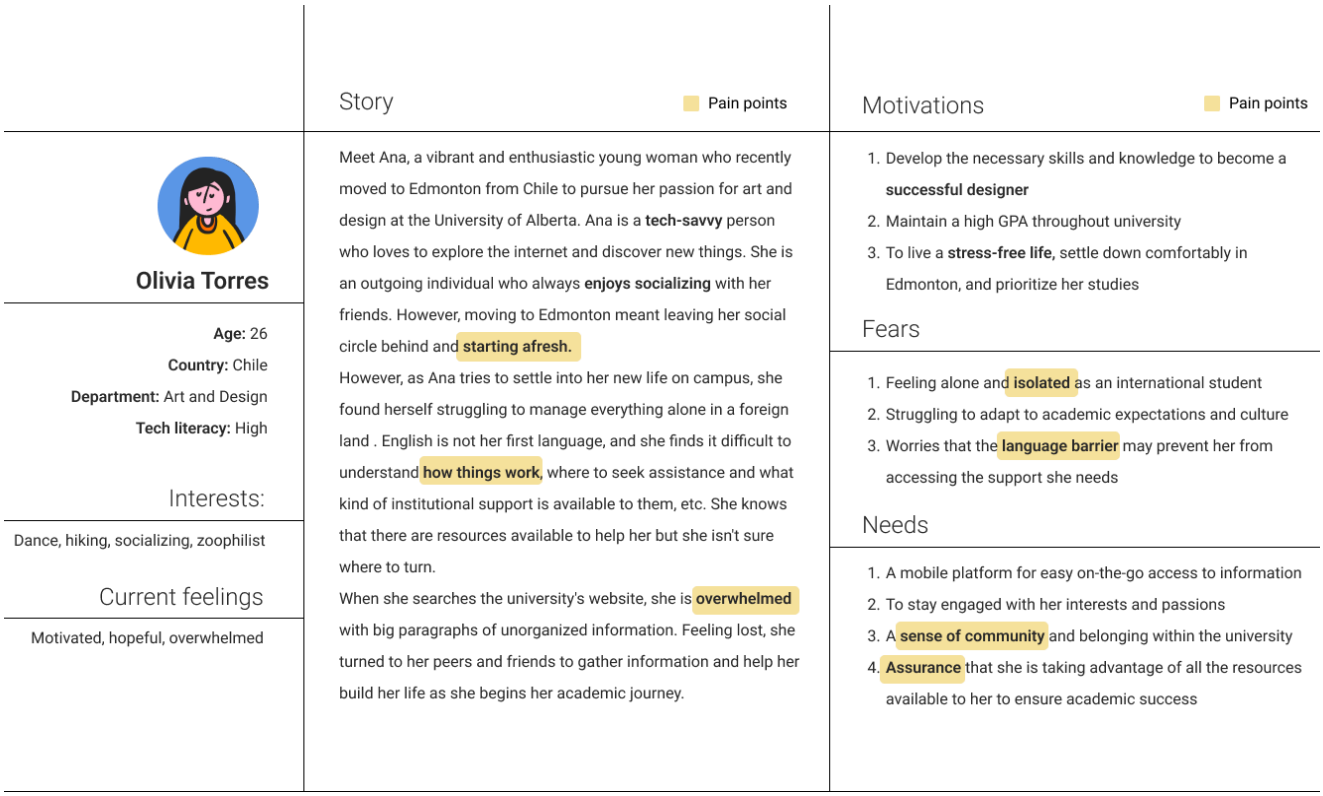
This process was chosen for its ability to facilitate iterative development and continuous improvement, ensuring that the final product meets users' needs effectively. The flexibility of the design process also allows it to be adaptable to various project scopes and challenges, making it a highly effective approach for problem-solving in design contexts (Dam, 2024).

4.1 User Research

This phase began with creating detailed user personas and empathy mapping to understand the needs, experiences, and challenges faced by international students. This step was followed by brainstorming sessions to generate a wide range of potential solutions. The insights gathered from these activities informed the subsequent card sorting exercise, which aimed to organize the website content in a way that aligns with the users' mental models and preferences. This comprehensive approach ensured that the design process was grounded in a deep understanding of the users and their specific needs

4.1.1 User Personas

User personas were developed to represent the diverse backgrounds, needs, and pain points of international students at the University of Alberta. These personas were crafted based on data collected from surveys and interviews. Three target group profiles were defined, Olivia (Chile, 26), Majid (Iran, 29) and Sara (India, 23) to better empathize with my main user groups and prioritize goals according to their needs:



Olivia Torres

Age: 26
Country: Chile
Department: Art and Design
Tech literacy: High

Interests:

Dance, hiking, socializing, zoophilist

Current feelings

Motivated, hopeful, overwhelmed

Story — Pain points

Meet Ana, a vibrant and enthusiastic young woman who recently moved to Edmonton from Chile to pursue her passion for art and design at the University of Alberta. Ana is a **tech-savvy** person who loves to explore the internet and discover new things. She is an outgoing individual who always **enjoys socializing** with her friends. However, moving to Edmonton meant leaving her social circle behind and **starting afresh.**

However, as Ana tries to settle into her new life on campus, she found herself struggling to manage everything alone in a foreign land . English is not her first language, and she finds it difficult to understand **how things work**, where to seek assistance and what kind of institutional support is available to them, etc. She knows that there are resources available to help her but she isn't sure where to turn.

When she searches the university's website, she is **overwhelmed** with big paragraphs of unorganized information. Feeling lost, she turned to her peers and friends to gather information and help her build her life as she begins her academic journey.

Motivations — Pain points

1. Develop the necessary skills and knowledge to become a **successful designer**
2. Maintain a high GPA throughout university
3. To live a **stress-free life**, settle down comfortably in Edmonton, and prioritize her studies

Fears

1. Feeling alone and **isolated** as an international student
2. Struggling to adapt to academic expectations and culture
3. Worries that the **language barrier** may prevent her from accessing the support she needs

Needs

1. A mobile platform for easy on-the-go access to information
2. To stay engaged with her interests and passions
3. A **sense of community** and belonging within the university
4. **Assurance** that she is taking advantage of all the resources available to her to ensure academic success

Figure 7: First User Persona designed highlighting Motivations, Fears, Needs and Pain Points

Persona 2:

Majid Azadeh

Age: 29
Country: Iran
Department: Art and Design
Tech literacy: Medium

Interests

Painting, photography, sports

Current feelings

Hopeful, motivated, anxious

Story

Majid is a young man from Iran who recently moved to Edmonton to pursue his dream of studying at the University of Alberta's Design Department. Rohit has always been fascinated by the design field and feels fortunate to have been accepted into this prestigious program. Rohit is married and moved to Edmonton with his wife, hoping **to build a better future** for his family.
As Rohit juggles between his studies and his part-time job to support his family, he often finds himself struggling to manage his time effectively. He is curious about how he can benefit from the resources available at the university. He tries to attend university events and workshops whenever he can. He believes that these events are a great way to **learn new skills,** meet new people, and expand his horizons.
However, Rohit often finds it **difficult to keep track** of all the events and resources available at the university. He feels like he is missing out on a lot of opportunities because he doesn't know **where to look.**

Motivations

1. Excel in his studies and achieve his academic goals
2. Build a better future for his family
3. Learn new skills and expand his horizons in the field engineering
4. Manage his time effectively and balance his studies, job, and **family responsibilities**

Fears

1. Missing out on opportunities and resources due to lack of information
2. Struggling by the amount of information available
3. Unable to **manage his time** effectively

Wants and needs

1. Guidance in finding helpful university resources
2. Provide a better future for his family
3. **Connect with like-minded individuals** to expand his network
4. Explore the city of Edmonton and **experience Canadian culture**

Figure 8: Second User Persona designed highlighting Motivations, Fears, Needs and Pain Points

Persona 3:

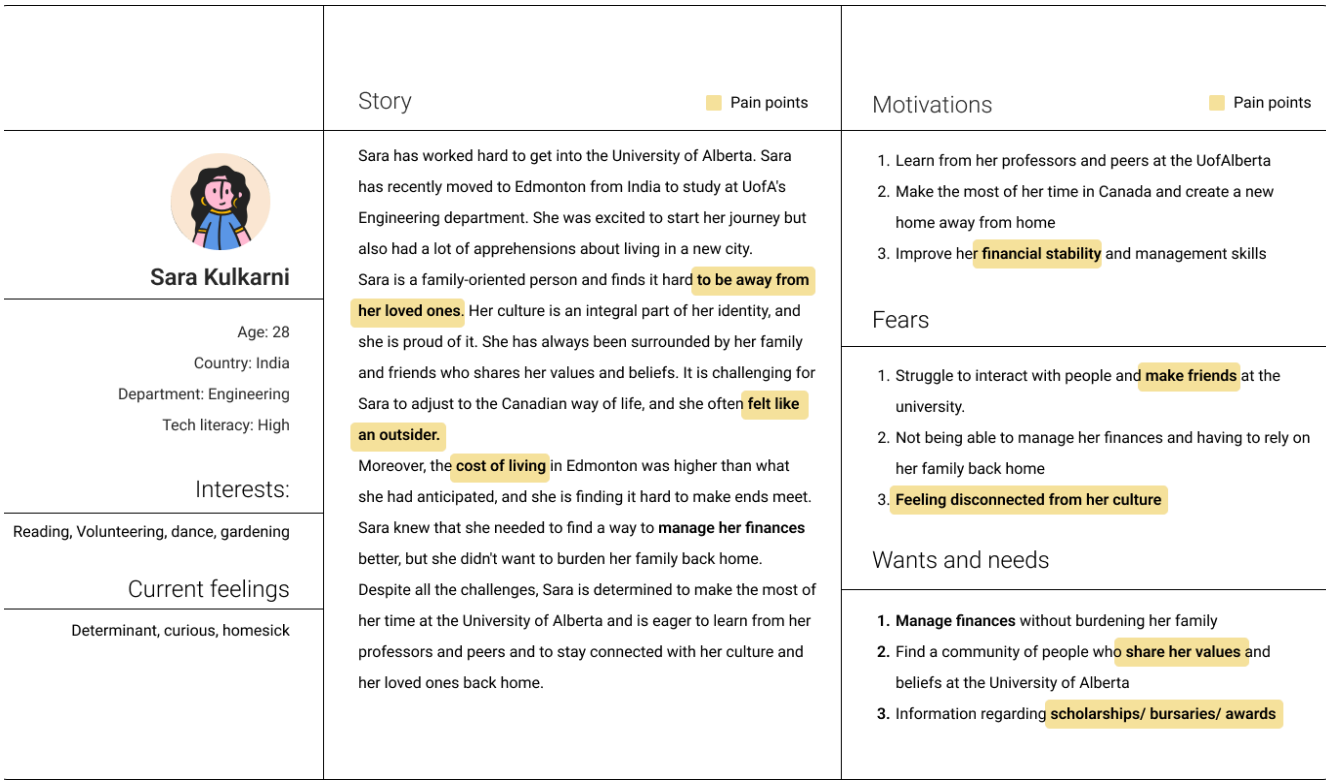


Figure 9: First User Persona designed highlighting Motivations, Fears, Needs and Pain Points

These personas served as a critical tool for guiding the brainstorming sessions and the subsequent card sorting exercise, ensuring that all proposed solutions were user-centered and relevant to the actual experiences of international students.

4.1.2 Brainstorming

The first step involved gathering insights through brainstorming sessions, sticky notes, and other collaborative materials to understand how the website could be made more effective for international students. This process included discussions where ideas and suggestions were

shared about improving the website for international students. During these sessions, sticky notes were used to write down individual ideas, pain points, and potential solutions. These sticky notes were then placed on a board and grouped to identify common themes and recurring issues.

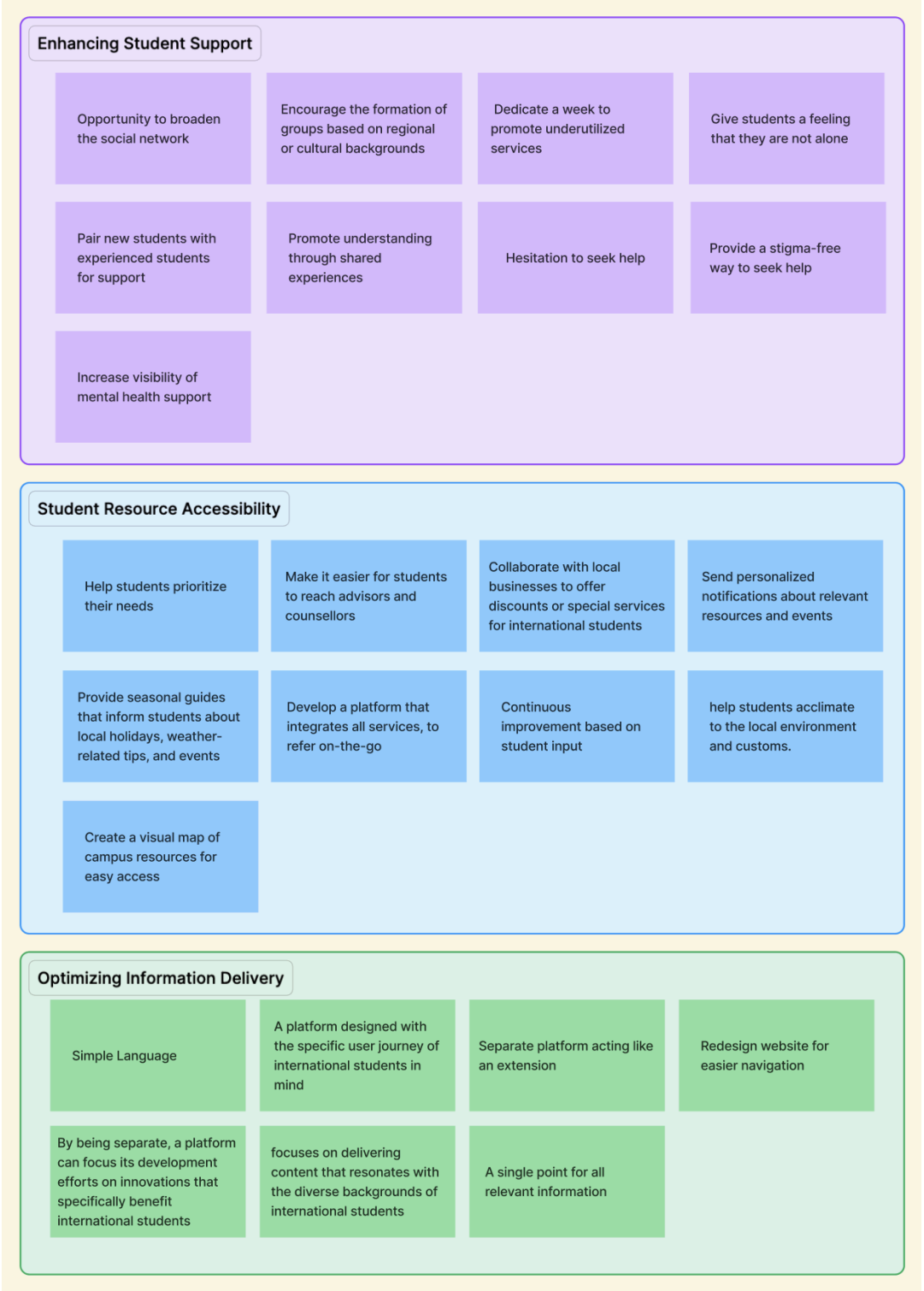

Enhancing Student Support
Opportunity to broaden the social network
Encourage the formation of groups based on regional or cultural backgrounds
Dedicate a week to promote underutilized services
Give students a feeling that they are not alone
Pair new students with experienced students for support
Promote understanding through shared experiences
Hesitation to seek help
Provide a stigma-free way to seek help
Increase visibility of mental health support
Student Resource Accessibility
Help students prioritize their needs
Make it easier for students to reach advisors and counsellors
Collaborate with local businesses to offer discounts or special services for international students
Send personalized notifications about relevant resources and events
Provide seasonal guides that inform students about local holidays, weather-related tips, and events
Develop a platform that integrates all services, to refer on-the-go
Continuous improvement based on student input
help students acclimate to the local environment and customs.
Create a visual map of campus resources for easy access
Optimizing Information Delivery
Simple Language
A platform designed with the specific user journey of international students in mind
Separate platform acting like an extension
Redesign website for easier navigation
By being separate, a platform can focus its development efforts on innovations that specifically benefit international students
focuses on delivering content that resonates with the diverse backgrounds of international students
A single point for all relevant information

Figure 10: Whiteboard brainstorming session to generate ideas in order to address the issue

How Might We Questions (HMW):

The brainstorming session helped in defining the specific problems they face and informed the development of "how might we" questions to guide the design process. How Might We (HMW) is a design thinking method that allows designers to reframe and open up their problem statements for efficient, targeted and innovative ideation sessions to help solve design challenges. HMW is the bridge between the Define and Ideate stages of the design thinking process(Interaction Design Foundation, 2016).

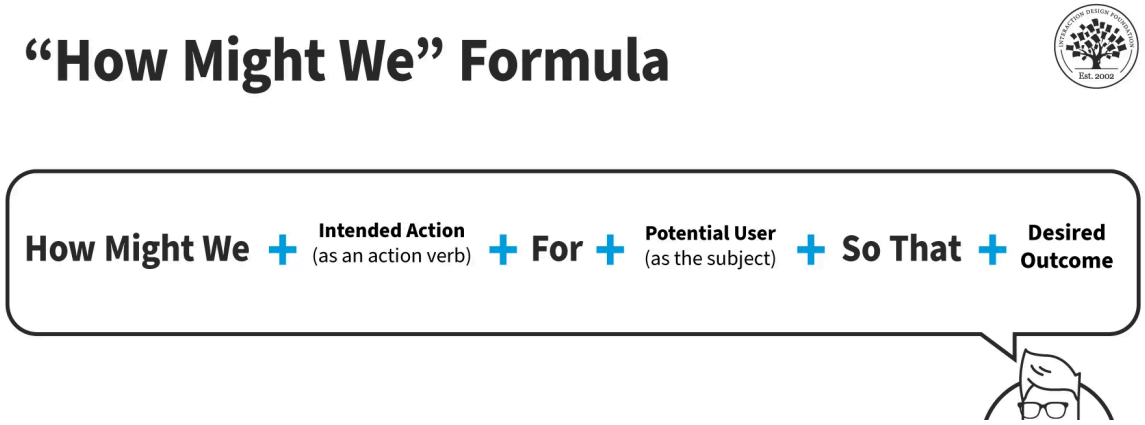
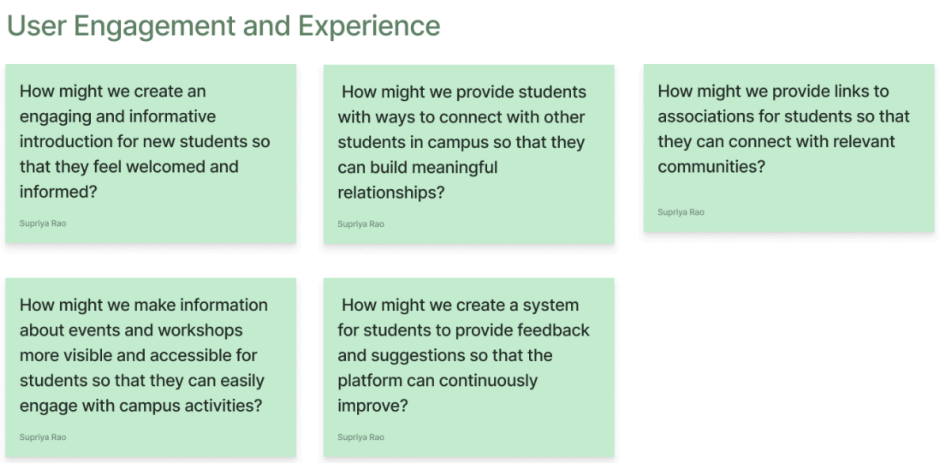


Figure 11: Framing the How Might We questions, (Interaction Design Foundation, 2016)

In the case of our problem statement, here are some examples of the How Might We questions:

"How might we create a platform that feels comfortable for users to interact with, reducing cognitive load and making it easy to understand?" and "How might we use a unified design

language to organize information in a clear and logical way, creating a natural hierarchy in users' minds?"



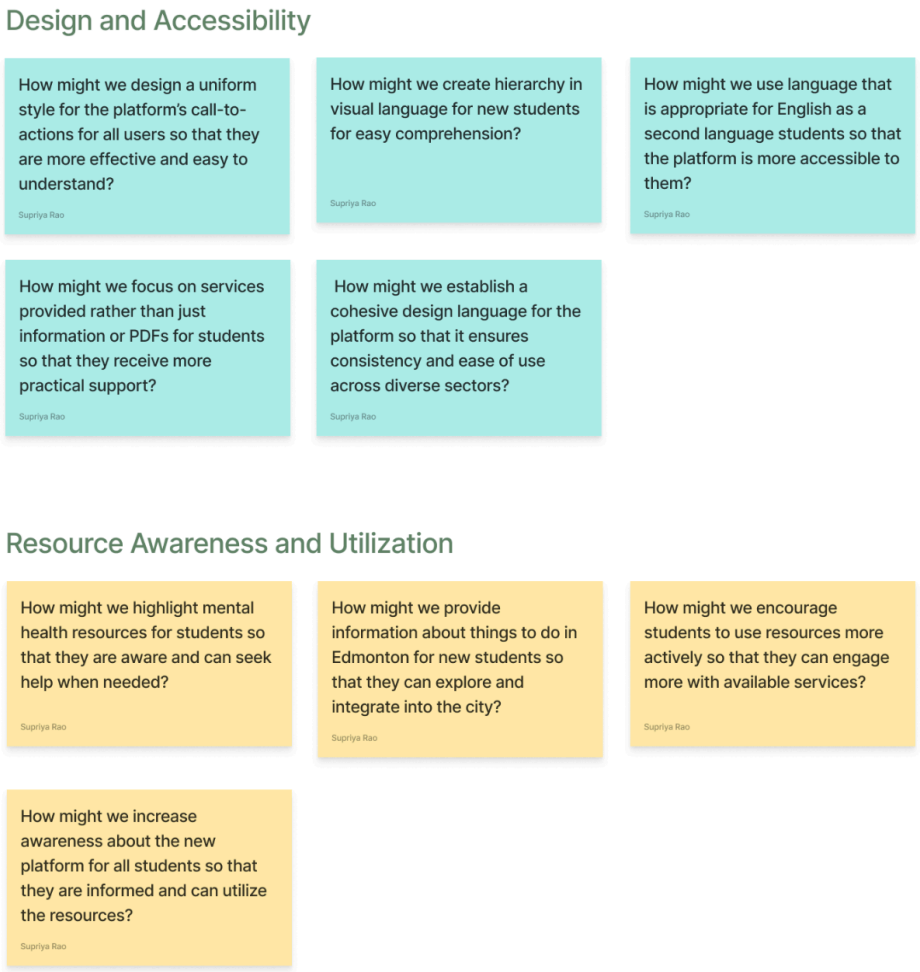


Figure 12: Developing "How MIght We" questions

The "How Might We" (HMW) questions were instrumental in identifying specific challenges and opportunities for improving the information accessibility for international graduate students at the University of Alberta. These questions helped focus on crucial aspects such as creating an engaging introduction for new students, designing a uniform style for effective call-to-actions, and making event information more accessible and visible. The HMW questions guided the development of a more user-friendly and supportive platform, ensuring

that international students can easily navigate university resources, manage their time, and feel a sense of belonging within the university community

4.1.3 Card Sorting

Card sorting is a research method in which study participants place individually labeled cards into groups according to criteria that make the most sense to them (Nielsen Norman Group, n.d.). The session was conducted in-person with 3 participants. Participants were provided with cards representing various pieces of different resources available on the website. They were asked to group the cards in a way that made sense to them and to label each group while thinking aloud as they worked. After the sorting task was completed, a discussion was initiated based on the observations made, with questions asked such as, “Can you explain why these items were grouped together?” and “Has any service been missed that you might be aware of?” Participants were also asked if any cards had been difficult to categorize or if any categories were missing. This detailed feedback session allowed for a deeper understanding of their reasoning and enabled the refinement of the categorization.

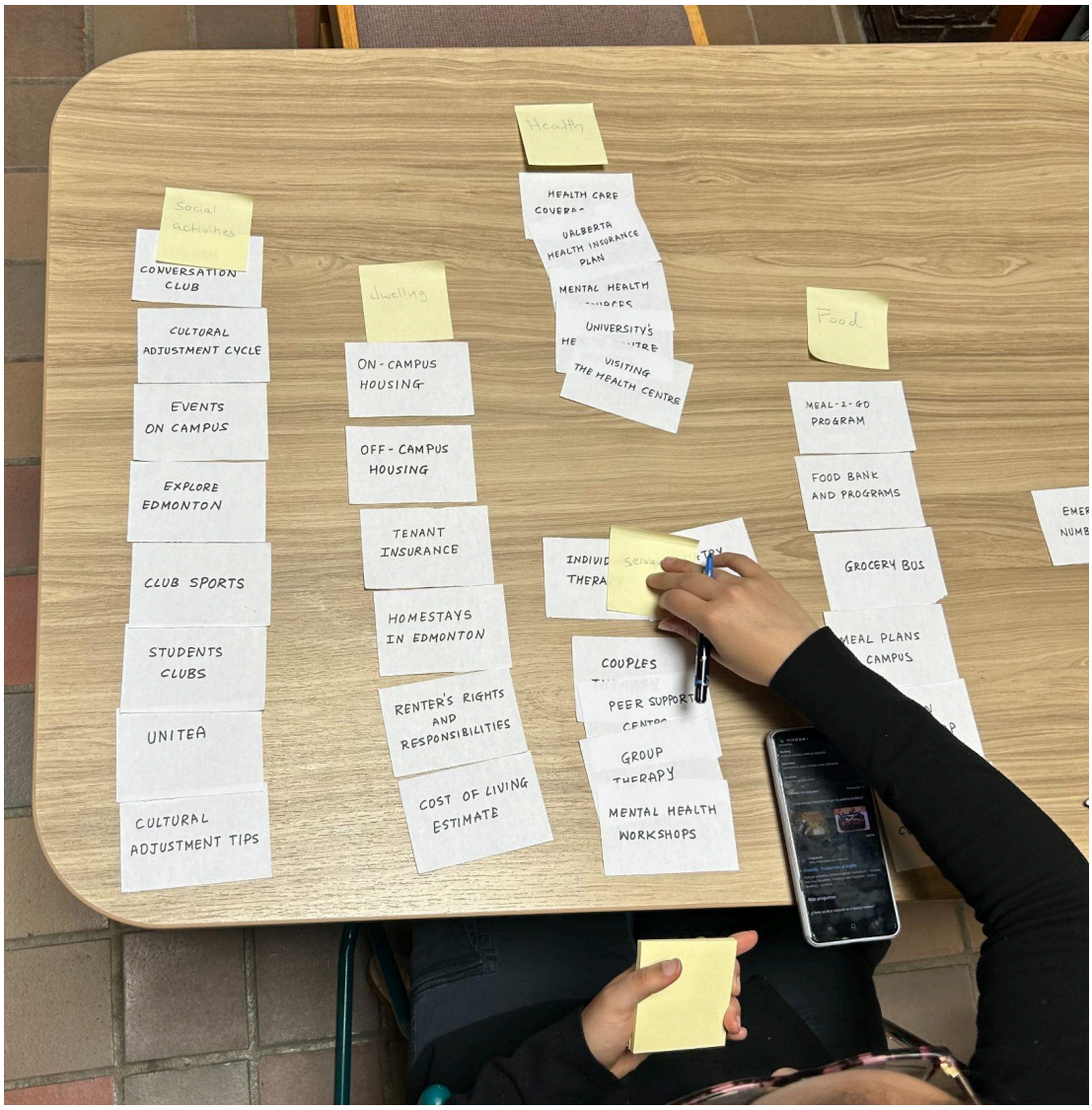


Figure 13 (a): Participant performing the card sorting exercise

Figure 13 (b): Participant performing the card sorting exercise

This exercise was instrumental in understanding how users naturally categorize information. It allowed the website to be structured according to participants' mental models, with the information hierarchy showcased based on importance. This approach led to the creation of wireframes that accurately reflected user preferences, resulting in a logical, organized, and intuitive content structure.

4.2 Ideation

This step follows the research and define phases of the design process. The name Belong was intentionally chosen to embody the platform's core mission of fostering a strong sense of community and inclusivity. It highlights the platform's dual purpose: not only to provide essential tools and information but also to create a welcoming environment where international students feel supported, integrated, and valued within both the university and the larger community. The name Belong serves as a reflection of the platform's role in helping students feel they genuinely fit in, both academically and socially, in their new surroundings. The following key steps were identified moving forward:

4.2.1 Visual Identity

Using the insights gathered from the brainstorming session and the user personas, a separate platform and visual identity was designed. The identity was called ***Belong*** and maintains the University of Alberta colour scheme of green. It was important to align the design with the University's brand guidelines while giving "Belong" its own unique identity. This balance helps in creating a seamless connection with the University's existing resources while providing a fresh and engaging platform for new students. It was crucial to develop a strong identity and style guide to make it memorable and relatable for international students. A consistent and recognizable design helps create a sense of belonging and trust, making it easier for students to connect with the platform and feel supported in a new environment. This approach ensures that the platform communicates clearly and meets the diverse needs of its audience. The

style guide needed to ensure consistency in visual elements across all touchpoints. This includes the selection of typography, imagery, iconography, and user interface components that resonate with the brand's ethos.

The identity for "Belong" was thoughtfully developed to visually represent the platform's core mission. The green shape serves a dual purpose: it symbolizes both the structure of the university and subtly forms the letter "B", representing Belong. The yellow circle symbolizes the student—their individuality and experience—illustrating the journey of trying to fit in and find their place within the established structure.

The fluid curves and balance between the two shapes signify the interaction between the university and the student, representing the support, growth, and integration. The design, with its combination of geometric forms and soft lines, emphasizes both the structure and openness of the platform, reflecting the balance between the institution and the individual.

The following identity was developed for "Belong":

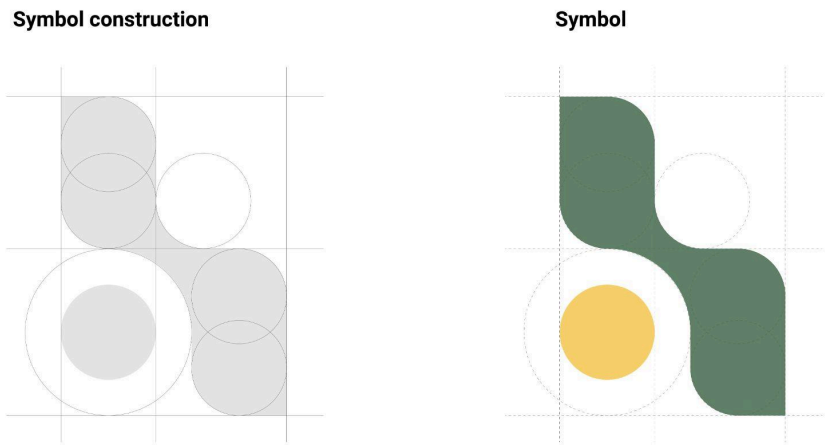


Figure 14: "Belong" Visual Identity and logo construction

Color Palette

The print color palette for "Belong" was designed to maintain the theme of the University of Alberta while introducing unique elements that make the platform stand out. The primary colors are green and yellow, similar to the University's established brand identity guide. In addition to that, secondary colours were used like coral orange, seaform green and light lime green to compliment the primary colours, adding depth and flexibility to the design.

Figure 15: Moodboard and color palette generation for the"Belong" platform

The color palette for "Belong" consists of Primary, Secondary, and Neutral colors, each represented in CMYK (Cyan, Magenta, Yellow, Black) values with multiple shades. In this

system, lower numbers indicate lighter shades, while higher numbers represent darker or more intense versions of the color. This approach ensures a consistent and organized use of various tones, maintaining harmony and flexibility across the design.

For example, a Primary color might be represented as CMYK (60, 30, 90, 0) for a mid-tone. Lighter shades, such as CMYK (20, 10, 30, 0), can be used for backgrounds and subtle elements, while darker shades, like CMYK (80, 50, 100, 20), are suitable for text, buttons, and other key interactive elements.

This nuanced CMYK color system is essential for maintaining a cohesive visual identity on the platform. By strategically using these shades, the design can effectively differentiate between elements, aiding in user navigation and interaction while ensuring visual consistency throughout the platform.

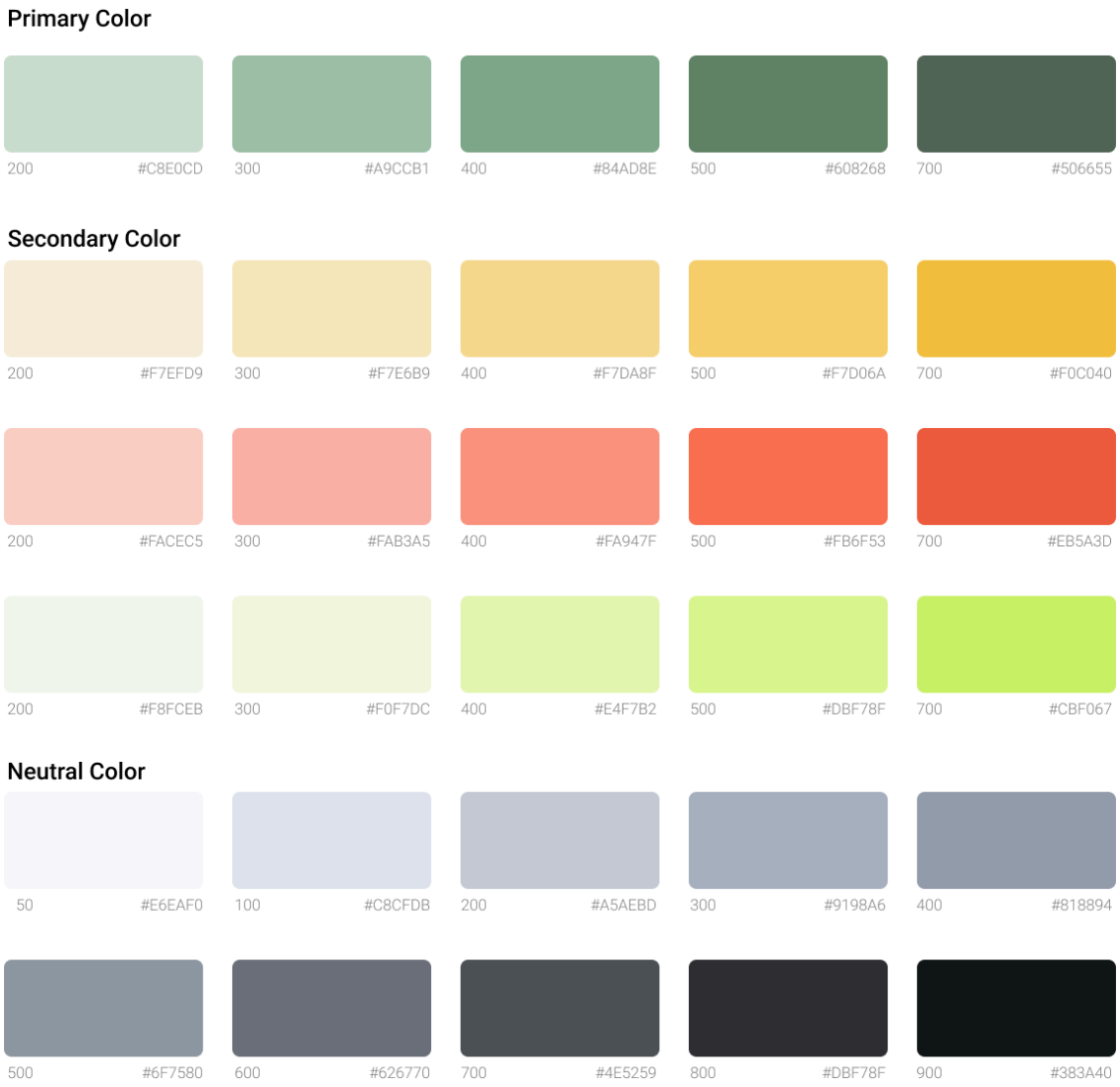


Figure 16: Color Scale for Design System

4.2.2 Illustrations and Icons:

The style of illustrations and icons for “Belong” was crafted using a design spectrum to ensure consistency and alignment with the platform’s core values. Key attributes such as simplicity, youthfulness, and friendliness were prioritized, placing the visuals closer to these

characteristics while avoiding extremes like complexity or authority. This careful balance helps convey an approachable, inclusive, and supportive tone while maintaining a level of professionalism. The design spectrum provided a framework for creating cohesive visual elements that resonate with international students, reinforcing the platform's mission of fostering belonging and trust.

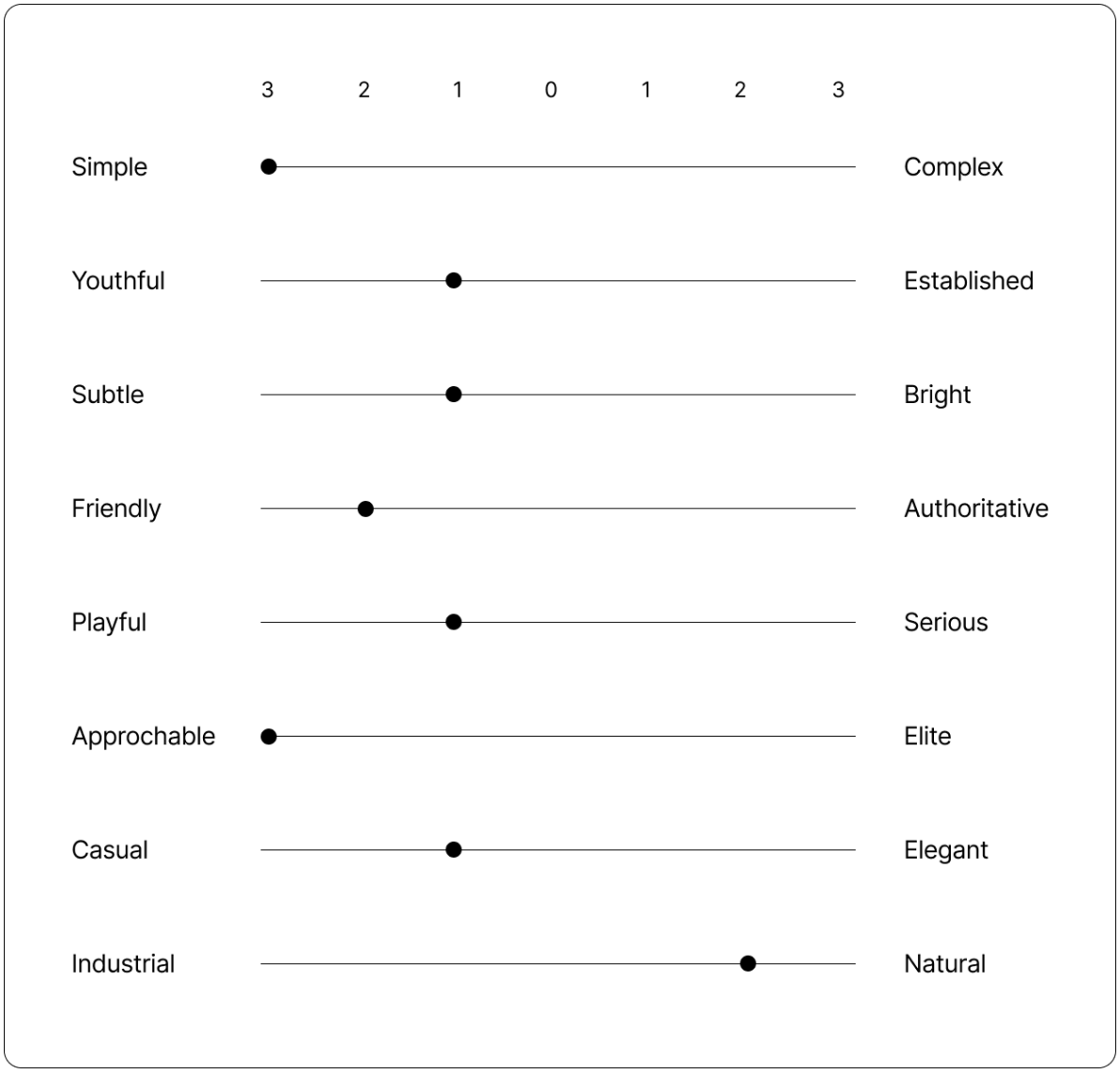


Figure 17: Visual Style Spectrum for Design Attributes

The design decisions for the illustrations and icons in “Belong” were based on understanding the target audience of international students, aligning with the platform’s goals of ease of use and engagement, maintaining consistency with the University of Alberta’s brand identity, ensuring accessibility and usability, and following best practices in UX design. Following best practices in UX design for illustrations and icons includes ensuring simplicity and clarity, using consistent styles and themes, maintaining appropriate contrast for visibility, designing with accessibility in mind, using recognizable and intuitive symbols, and incorporating responsive design to ensure visuals look good on all devices The designed visuals are simple, friendly, and playful to resonate with the youthful and diverse user base, create a welcoming and inclusive atmosphere, and provide a seamless and engaging user experience. Following are the illustrations and icons designed for “Belong”

Icon Construction

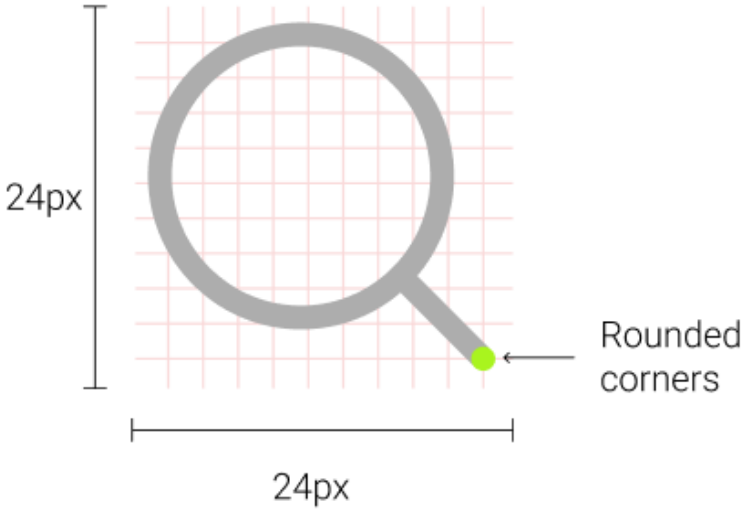


Figure 18 (a): 24 X 24px Icon base construction

Figure 18(b): Designed set of icons to be used across "Belong" platform

Illustrations for Housing, Cultural Integration and Events

Figure 19(a): Illustration set 1

For Health Services provided at the University

Figure 19(b): Illustration set 2

For Counselling Services provided at the University

Figure 19(c): Illustration set 3

4.2.3 Typography

The typography for “Belong” was selected to ensure modernity, and alignment with the University of Alberta’s branding. The combination of Acorn and Roboto fonts is used to provide a balanced and engaging visual experience. Acorn adds approachability with its playful curves and clean lines, ensuring clarity and readability. Paired with Roboto, official University of Alberta website’s font.

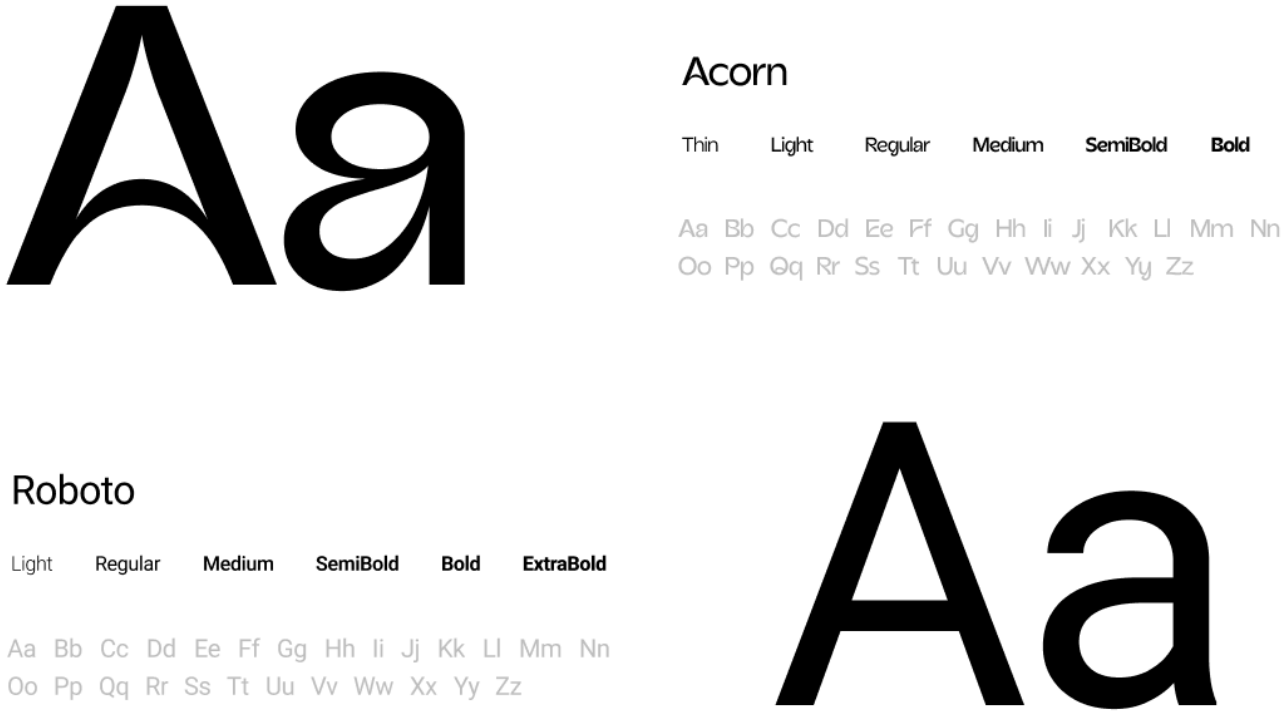


Figure 20: Typography Styles - Acorn and Roboto

A type guide, which is a set of predefined font sizes, was established for both fonts to ensure visual harmony and consistency throughout the design. This scale includes various heading levels for Acorn and text elements for Roboto, ensuring each typographic element complements the other. The type scale streamlines the design and development process by providing a standardized set of text styles that designers and developers can consistently apply across the platform. This predefined hierarchy reduces the need for ad-hoc decisions about sizes, stroke weights, and heights, saving time and ensuring uniformity. It also facilitates easier collaboration, as everyone works from the same set of guidelines, reducing

inconsistencies and revisions. Furthermore, a type scale ensures that new content can be quickly and efficiently integrated into the existing design, maintaining a cohesive look and feel without extensive rework.

Hierarchy	Font-Weight	Font-Size	Line Height
Display	Medium	120px	160px
Headline 1	Medium	96px	120px
Headline 2	Medium	72px	96px
Headline 3	Regular	56px	80px
Headline 4	Medium	42px	64px
Sub Headline	Regular	32px	42px
Body Large	Regular	24px	40px
Body Medium	Regular	20px	32px
Body Small	Regular	18px	27px
Button Large	Medium	18px	27px
Button Medium	Medium	16px	24px

Figure 21: Typography Scale and Hierarchy

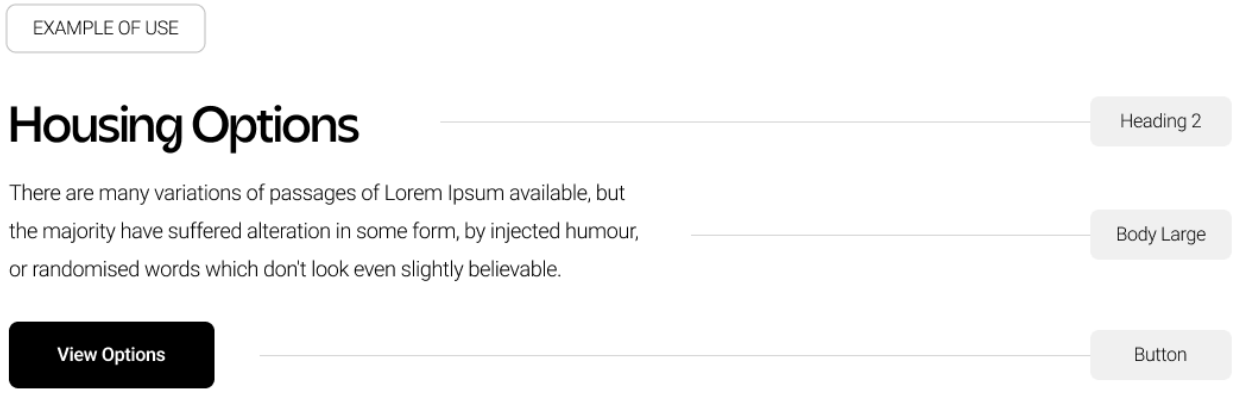


Figure 22: Typography Scale and Hierarchy Example

4.2.4 Summary

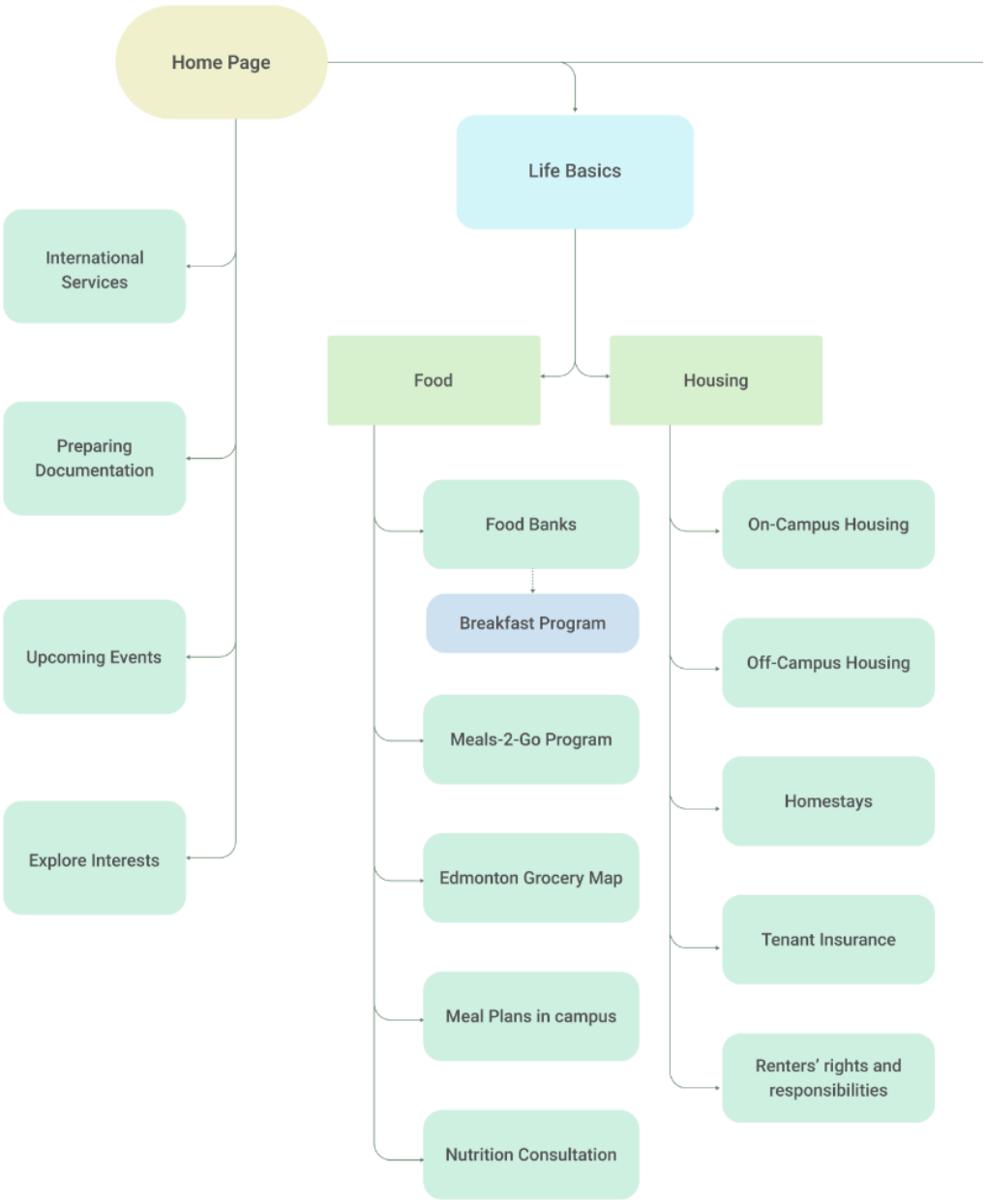
The design of the identity for the “Belong” platform followed a structured design process focused on understanding user needs, generating ideas, and refining the concept. Building a separate platform was crucial because it is dedicated, focused environment specifically reworked to the needs of international students, free from the complexity of the main university website. Initial efforts centered on empathizing with users and defining their challenges, which guided the ideation of potential solutions. The design phase established a unique visual identity that balanced familiar elements with new ones to ensure consistency and appeal. A standardized type guide was implemented to maintain uniformity and simplify the design workflow. Simple and engaging illustrations and icons were to enhance usability and accessibility. This methodical approach resulted in a well-organized and accessible platform, “Belong,” created to help international students at the University of Alberta to find and access the support resources they need.

4.3 Prototype

The next step in the involves developing a prototype, guided by the Information Architecture (IA), User journey flow, and Wireframes.

4.3.1 Information Architecture (IA)

The IA serves as a blueprint for organizing and structuring content on the “Belong” platform. This structured approach helps in presenting information logically ensuring that students can quickly find the resources they need without feeling overwhelmed. This structure was also informed by the insights gathered from the card sorting exercise, ensuring that the organization of content aligns with the preferences of the users.The information architecture begins with the Home Page, which serves as the central hub, linking to major sections identified through survey responses to address the needs of international students. The Home Page is designed to provide a welcoming entry point, offering clear and straightforward navigation to various sections:


Home Page
Life Basics
International Services
Food
Housing
Preparing Documentation
Food Banks
On-Campus Housing
Breakfast Program
Upcoming Events
Off-Campus Housing
Meals-2-Go Program
Homestays
Explore Interests
Edmonton Grocery Map
Tenant Insurance
Meal Plans in campus
Renters' rights and responsibilities
Nutrition Consultation

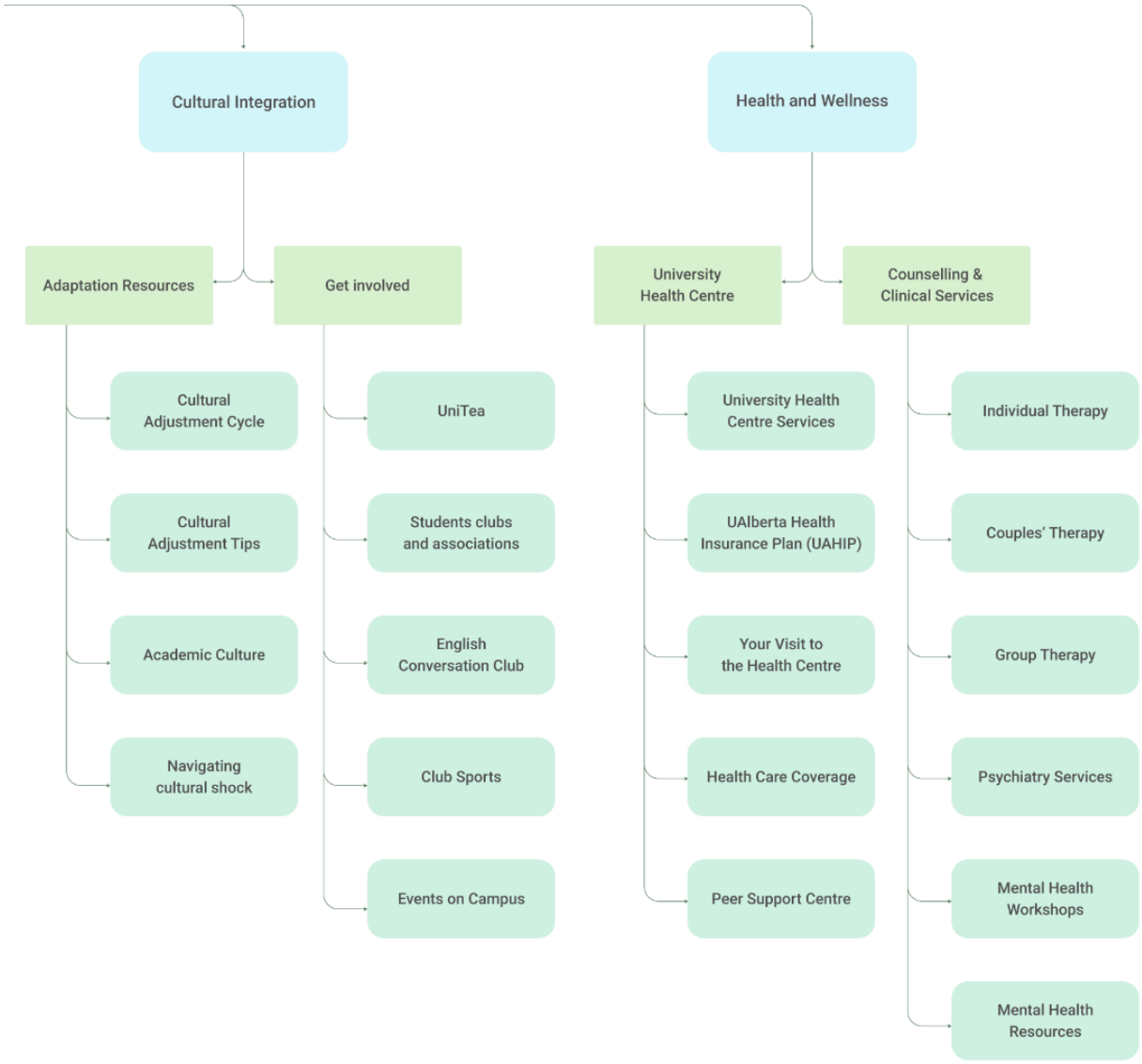


Figure 23: Information Architecture

The information architecture displayed in Figure 18, outlines the structure of a digital platform designed to support international students at the University of Alberta. This hierarchy organizes essential resources into intuitive categories, ensuring easy access and navigation for users. The main sections include Life Basics, Cultural Integration, Health and Wellness, and Deals and Discounts, each further divided into specific subcategories.

Life Basics covers fundamental needs such as food and housing, providing links to resources like food banks, meal programs, and both on-campus and off-campus housing options. It also includes tenant insurance information and a grocery map for Edmonton, helping students manage daily living essentials efficiently.

Cultural Integration focuses on helping students adapt to their new environment. It offers resources on cultural adjustment cycles and tips, academic culture, and navigating cultural shock. Additionally, it encourages involvement in community activities through student clubs, associations, and events.

Health and Wellness provides information about the University Health Centre, health insurance plans, and various counseling and clinical services, including individual, couples, and group therapy, as well as mental health workshops and peer support services.

Deals and Discounts helps students find cost-saving opportunities and benefits available to them, further easing their financial burdens.

This information architecture is designed to streamline access to vital resources, ensure visibility for international students, and enable them to easily find the support they need without having to navigate through multiple pages

4.3.2 User Journey Flow

A user journey provides the macro view of the interactions between the user or customer with your business from start to finish. User journey flows are crucial as they streamline the user's journey through a platform, making navigation intuitive and efficient. They help identify and eliminate obstacles, ensuring users can easily find the information they need. By clarifying the user's path, user flows improves overall satisfaction, inform design decisions, support collaboration, and facilitate ongoing improvements through testing and feedback. This ensures "Belong" remains user-centric and functional.

Task: Locate Group therapy

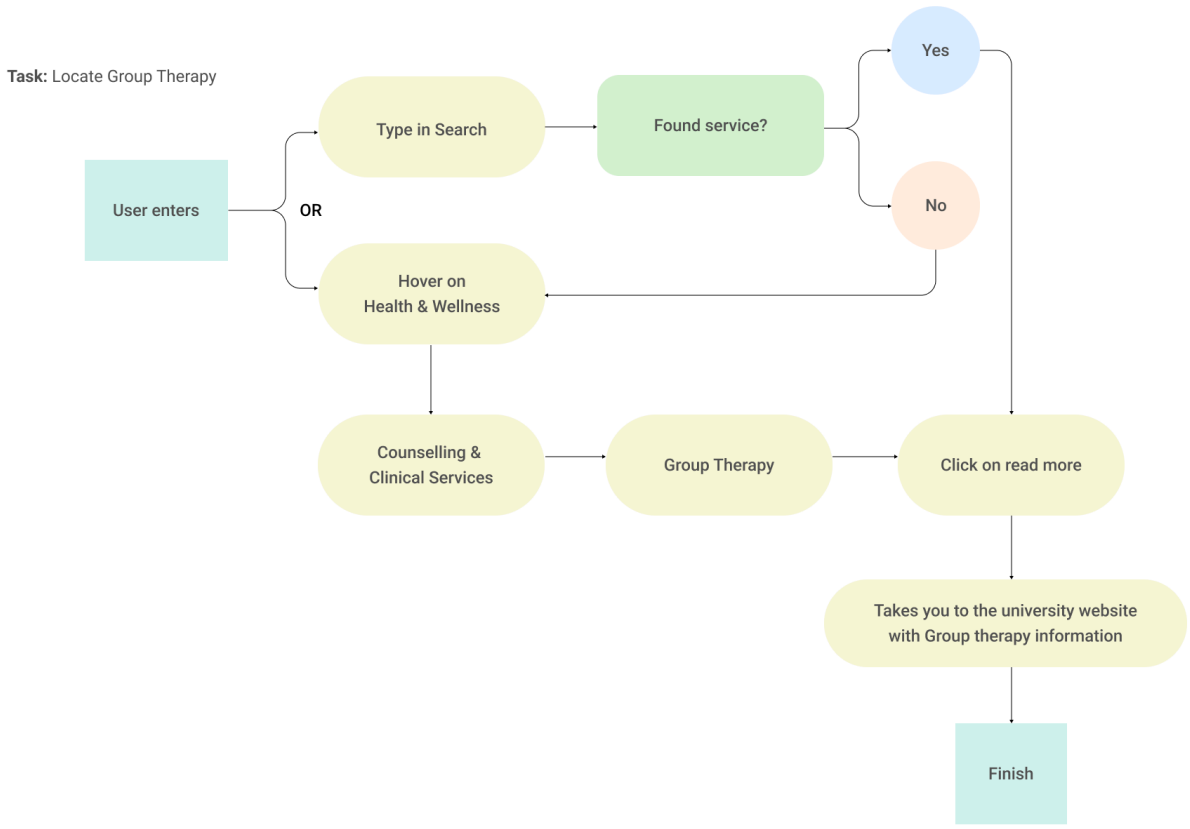


Figure 24: User journey flow to locate group therapy

#24 illustrates the user flow for locating group therapy services on a university's digital platform. The process begins when the user enters the platform and is presented with two primary options to find the desired service **a) Search Option b) Navigation Option**
By offering both search functionality and structured navigation, the platform accommodates different user preferences and improves visibility to mental health resources.

4.3.3 Wireframes

Wireframes are basic visual guides that represent the skeletal framework of a digital interface, such as a website or application. They are used in the early stages of the design process to establish the structure, layout, and organization of content and functionalities without focusing on detailed design elements like colors, typography, or graphics (Interaction Design Foundation, n.d.). These wireframes are essential for the "Belong" project, providing a detailed blueprint for layout of the platform, navigation, and user interface using a structured grid. By mapping out the structure and organization of content, wireframes enable the design team to identify and address potential usability issues early in the design process, well before development begins. **Paper prototyping** was introduced to facilitate more informed design decisions early in the process. Paper prototyping is a process where design teams create paper representations of digital products to help them realize concepts and test designs. They draw sketches or adapt printed materials and use these low-fidelity screenshot samples to cheaply guide their designs and study users' reactions from early in projects (Interaction Design Foundation, 2017). They facilitate clear communication among team members,

aligning design decisions and providing a concrete reference for developers during the build phase.

Paper prototype:

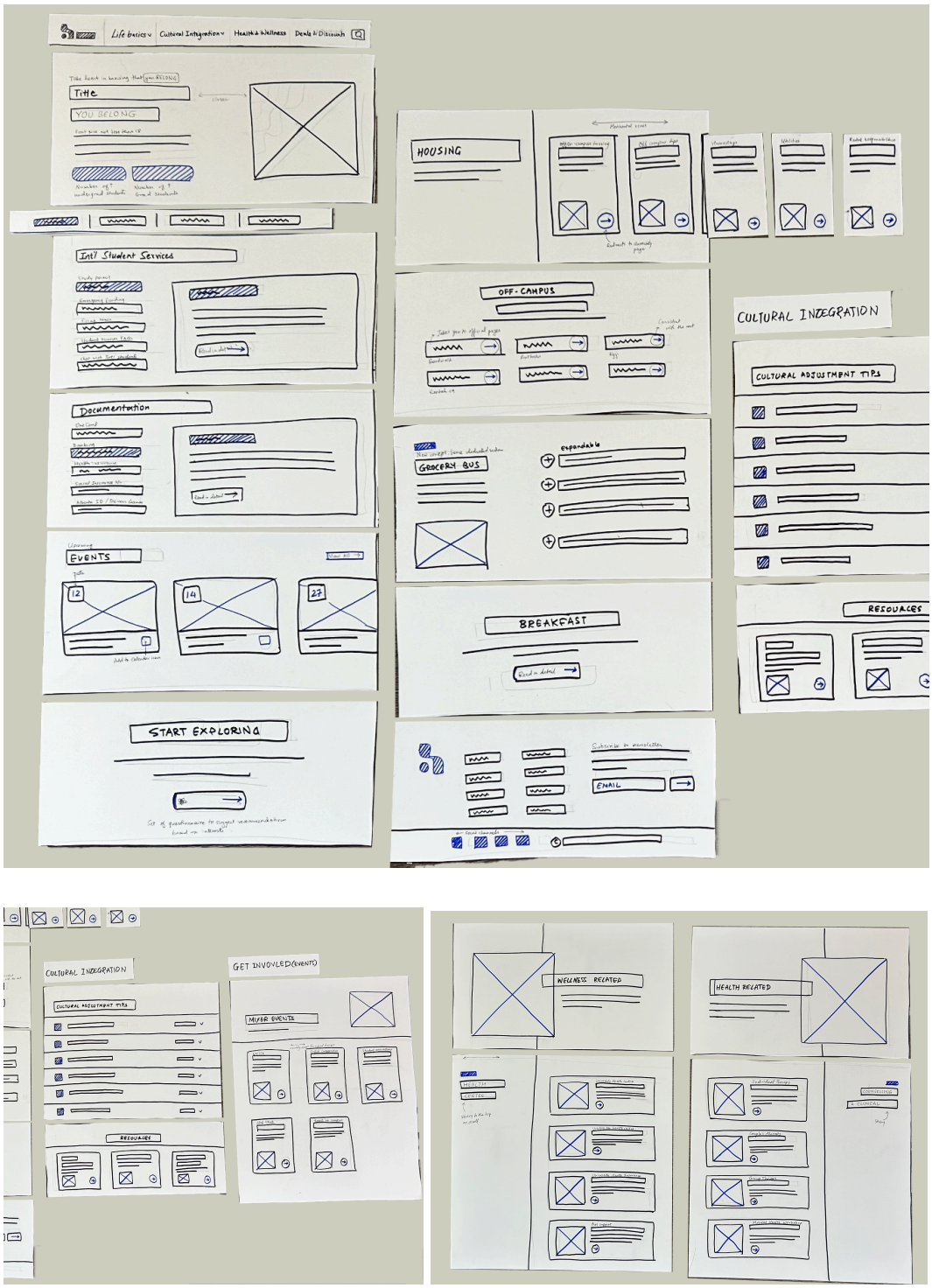


Figure 25: Paper Prototying for "Belong"

A grid is comprised of columns , gutter space, and margins offering a structural framework to arrange elements on a page. Designed with a 1440px width using a 12-column grid system with 32px gutter space, these wireframes ensure a balanced and responsive layout that adapts seamlessly across various devices like desktop, tablet and mobile devices.

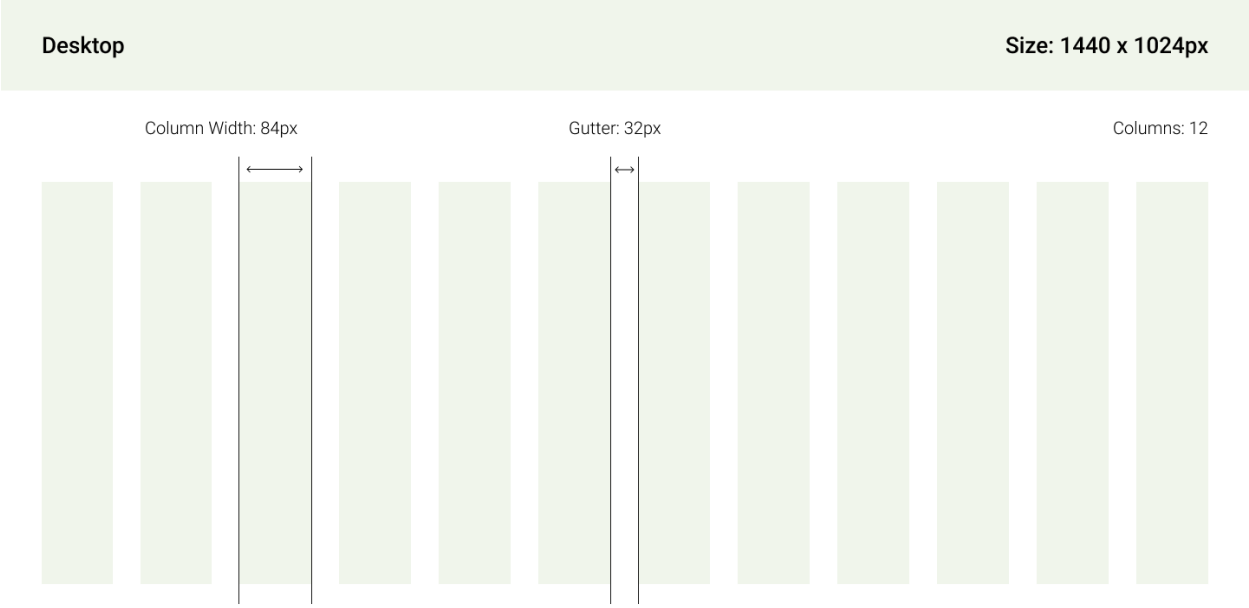


Figure 26: Desktop Grid Layout for Design Framework

Screen High Fidelity Wireframes:

Header/ Navigation Bar

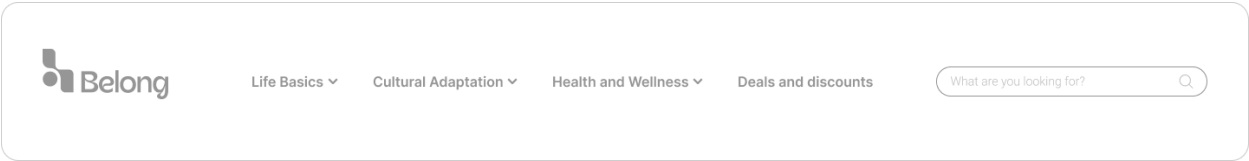


Figure 27(a): Navigation bar

Footer

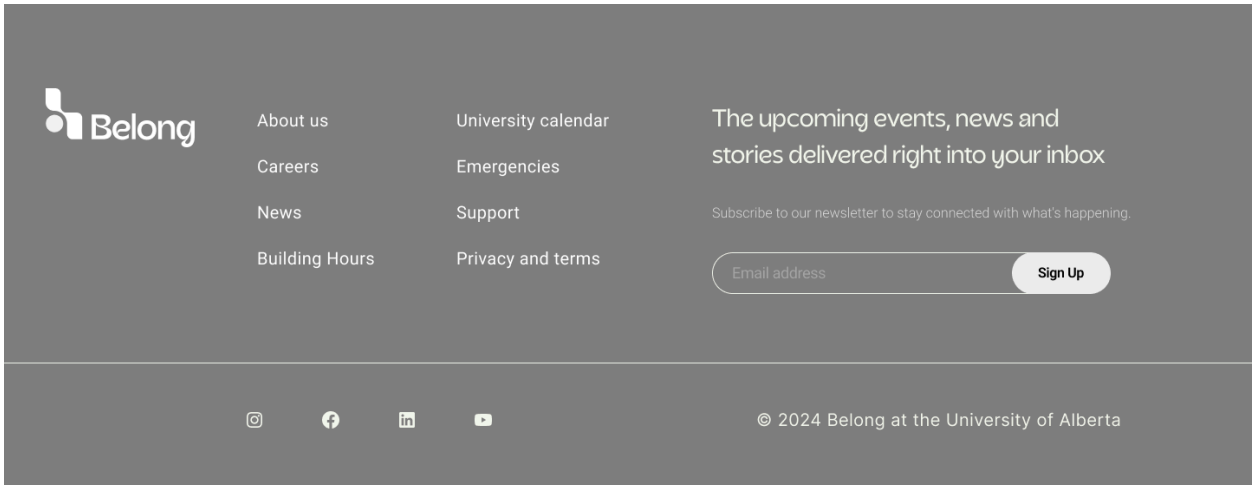
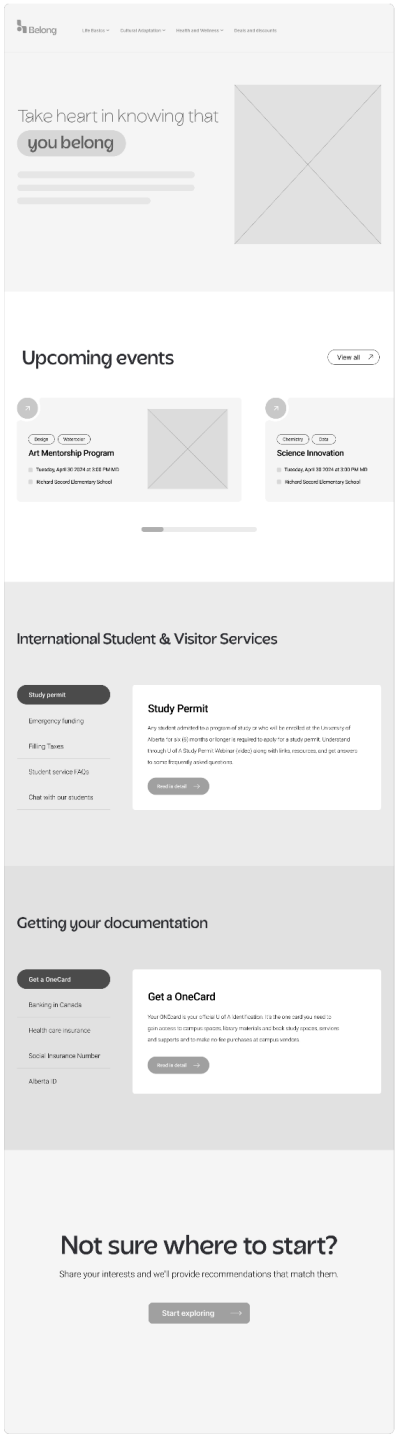


Figure 27(b): Footer

Homepage and Housing Page:



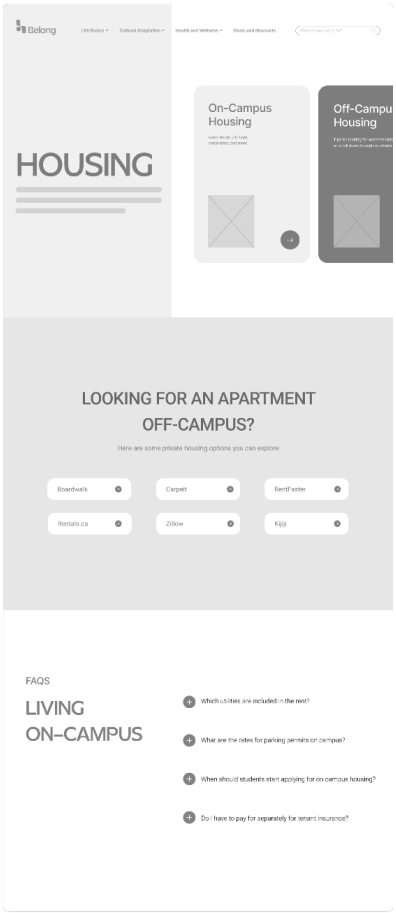


Figure 27(c): Wireframes of Homepage and the housing page

Food and Culture:

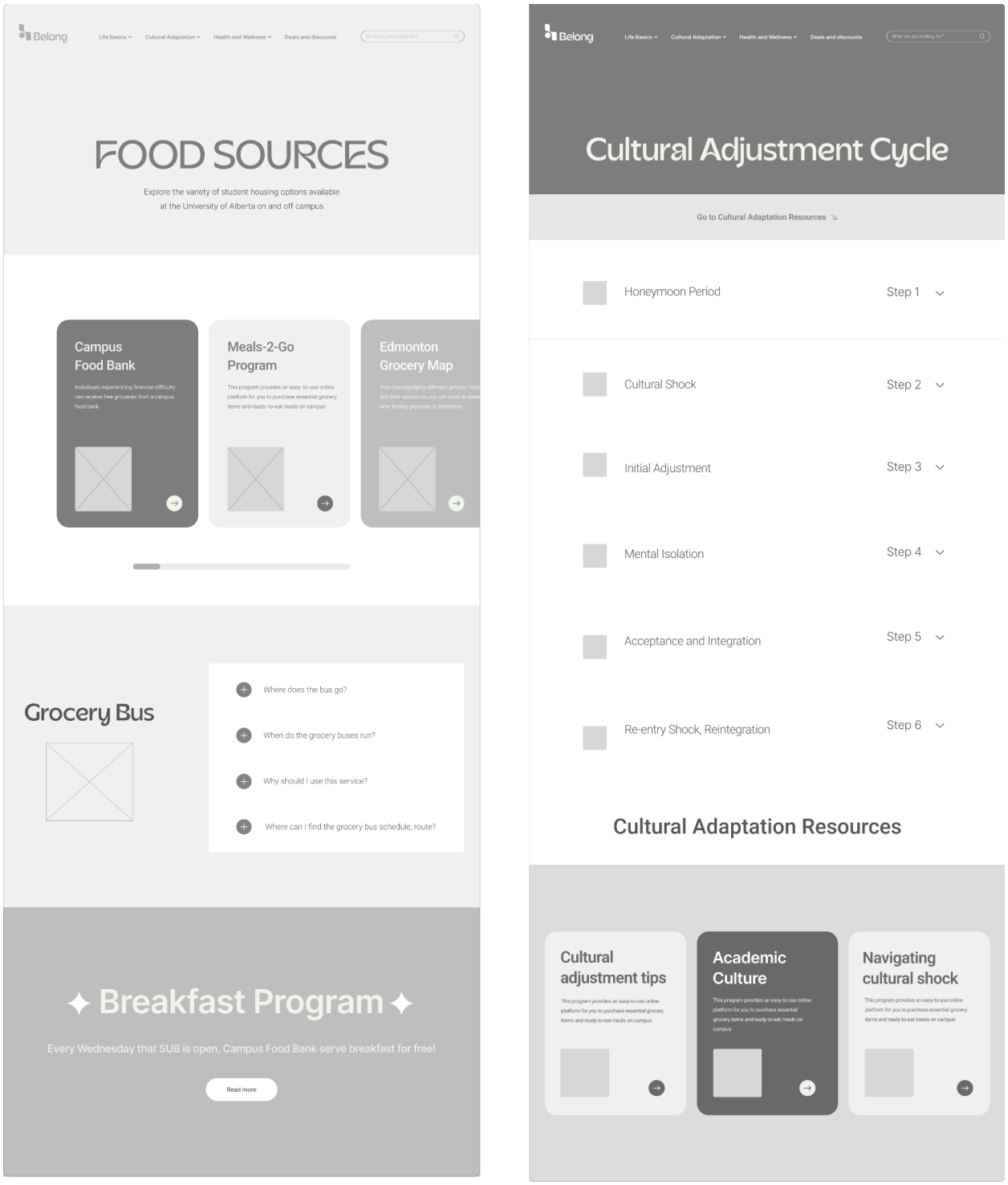
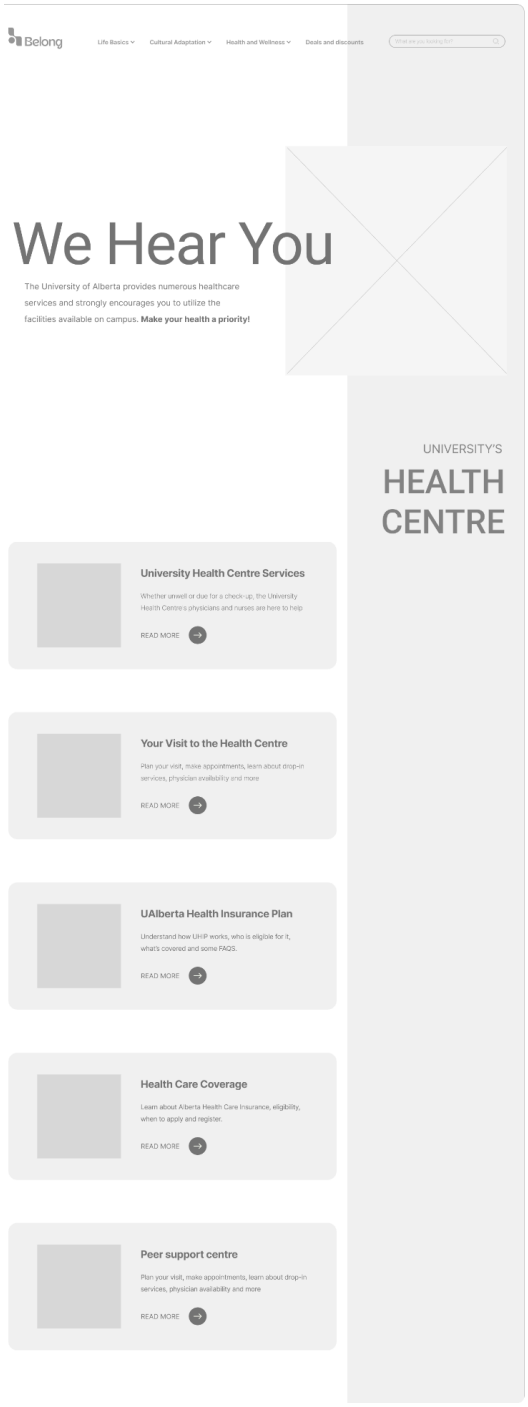


Figure 27(d): Wireframes of food and cultural adjustment page

Health and Wellness:



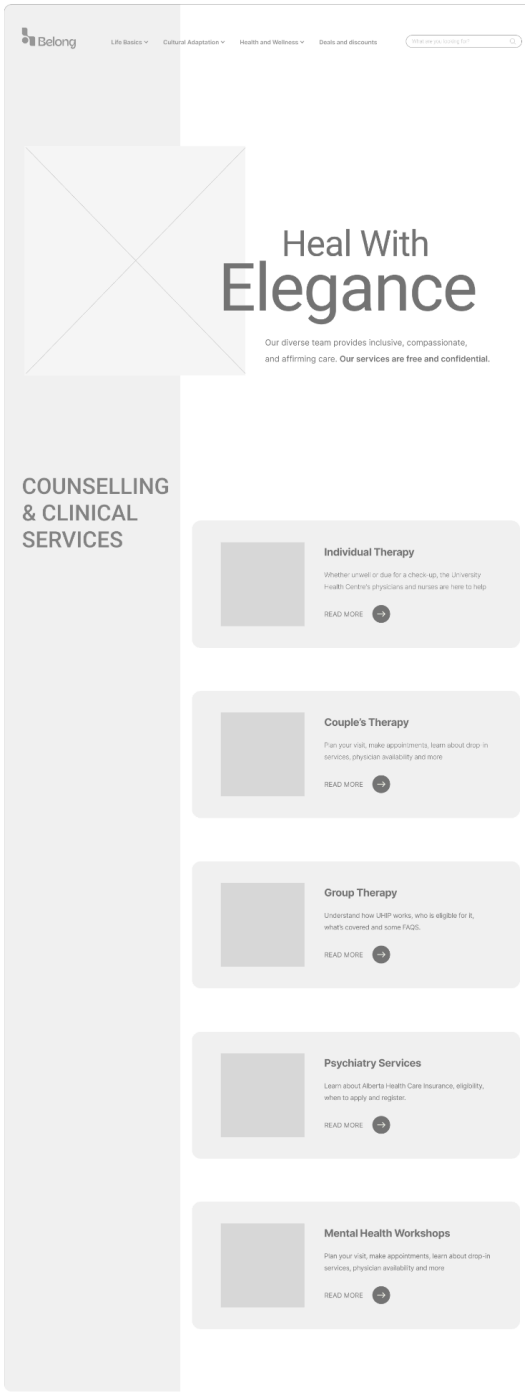


Figure 27(e): Wireframes of health and wellness page

4.4 User Testing

During the testing phase, users provided valuable feedback on the prototype, highlighting both its strengths and areas for improvement. Many users appreciated the intuitive layout and clear navigation, noting that these elements made it easy to locate essential features quickly. However, one user noted that the “Start Exploring” option wasn’t immediately visible, which could make it difficult for new users to discover its existence. To address this, it was suggested to add a prominent button on the home screen to better anchor this feature and ensure it is easily accessible. Another user recommended relocating the peer support service to the health page, rather than keeping it on the main navigation bar. They suggested replacing it with a link to emergency numbers, which they felt would be more relevant and immediately useful in the navigation bar. Based on the user testing results, it’s clear that the prototype has a strong foundation but requires several key adjustments to better align with user expectations and needs. The feedback received has provided actionable insights, leading to refinement in the interface to improve accessibility.

4.4.1 Molecules - Buttons, Accordions, NavBars

In UX design, “Molecules” are intermediate components in the Atomic Design methodology created by Brad Frost (Atomic Design, 2013). They consist of combinations of basic UI elements, or “atoms,” working together as functional units. For example, in the “Belong” project, I have designed molecules such as buttons, an accordion, and a navigation bar. These

molecules help build a modular and scalable design system, allowing for the reuse of these components across different parts of the interface. This modularity enhances consistency, maintainability, and efficiency in the design process, ensuring that the User Interface (UI) remains cohesive and user-friendly as it scales up to more complex structures like organisms, templates, and pages.

4.4.2 Usability testing

Following the molecules, a structure was built with the design systems, and developed coloured high-fidelity wireframes and conducted tree testing. Tree testing is an evaluation of a hierarchical category structure, or tree, by having users find the locations in the tree where specific resources or features can be found (Nielsen Norman Group, n.d.) with participants to validate the information architecture. In the tree testing session, participants were presented with a series of tasks, such as locating cultural adjustment tips (expected navigation: Home > Cultural Adaptation > Cultural Adjustment Tips) and finding information on what to do when visiting the UAlberta Health Centre (expected navigation: Home > Health and Wellness > Visiting Health Centre).

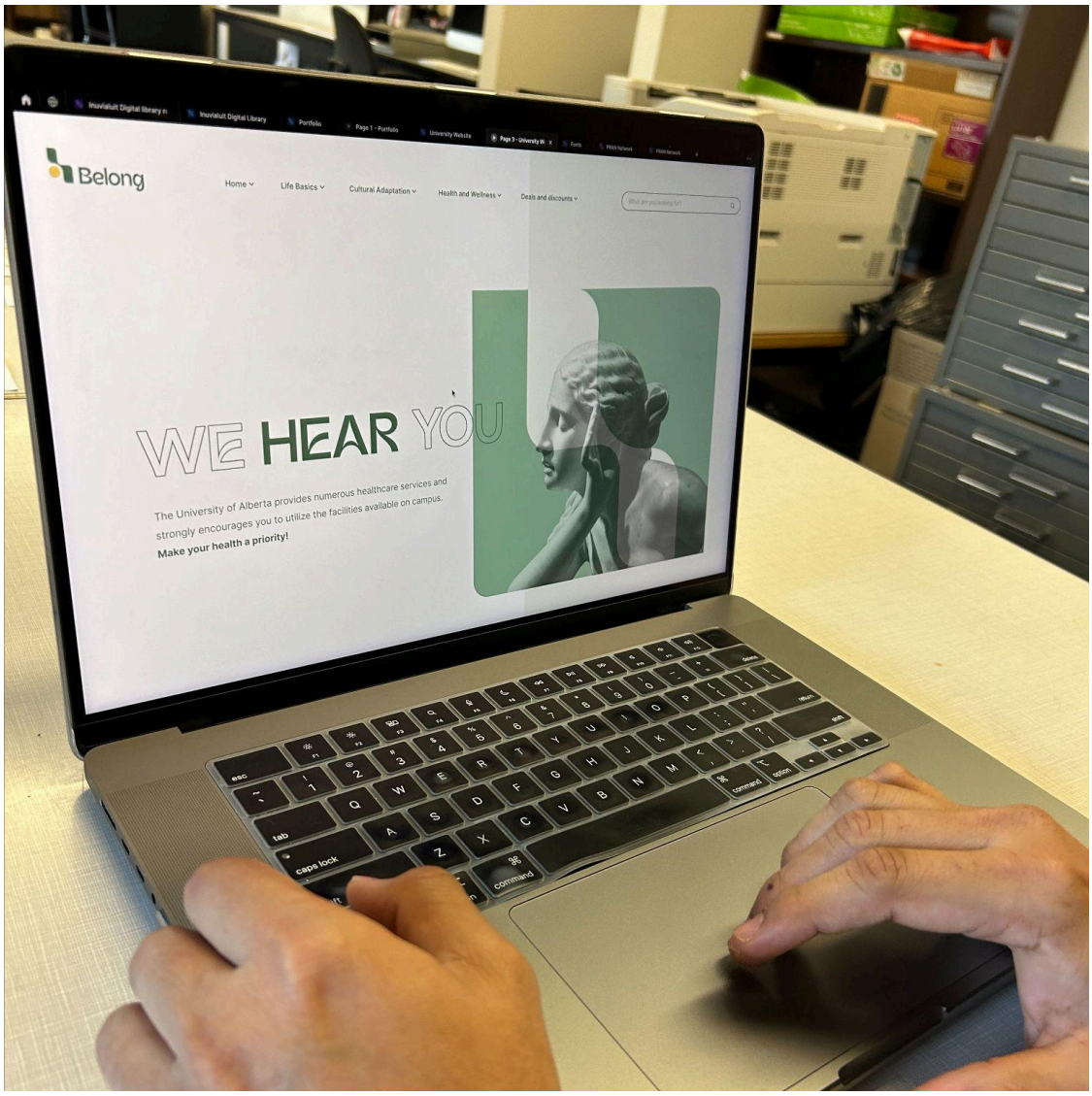


Figure 28(a): User testing session

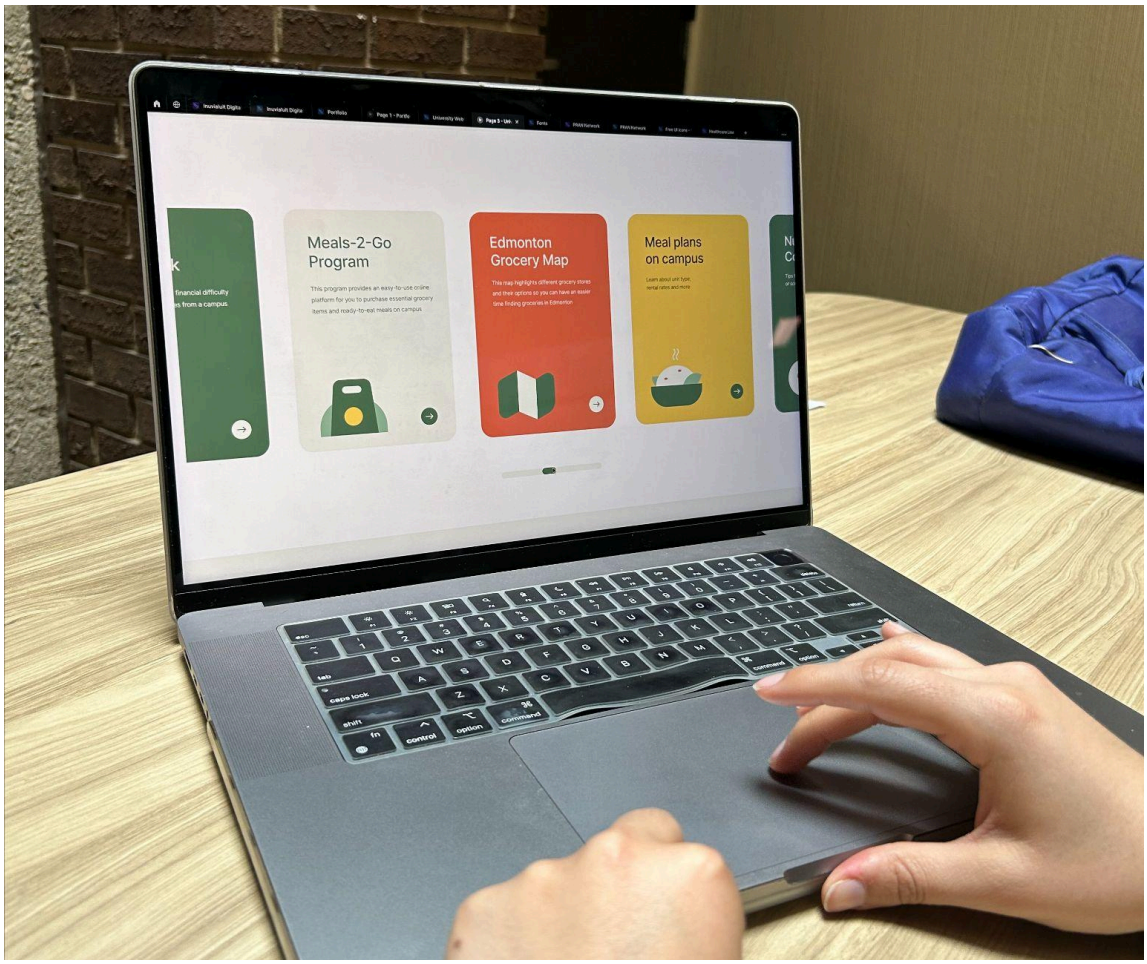


Figure 28(b): User Testing session

During the session, participants were observed navigating paths and difficulties or hesitations they experienced were noted. For instance, some participants took time finding the section on banking in Canada, while one user suggested moving the emergency numbers section to a more visible location instead of being buried within the Health and Wellness page. A comparison was made between the expected navigation paths and the participants' interactions and the time was recorded for each task to assess efficiency. Following the tasks,

I engaged participants in discussions based on my observations, asking them about any challenges they faced and seeking their suggestions on how the structure could be improved. This iterative testing process provided feedback on the usability of the wireframes and identified areas for improvement.

4.4.3 Final design and prototyping

The final design of the “Belong” platform reflects a culmination of extensive user research, iterative testing, and careful consideration of user feedback. By integrating the insights gained from wireframe testing, tree testing, and direct user interviews, the final prototype presents a user-centered experience adapted to the needs of international students. The interface is designed to be intuitive and accessible, with a clear and consistent navigation structure that ensures ease of use. The color palette and typography have been carefully selected to create a welcoming and inclusive environment, while the content is organized to prioritize the most critical resources. Key features, such as the “Start Exploring” button and emergency contact links, have been prominently positioned based on user recommendations. The final design not only meets the functional requirements but also fosters a sense of belonging and support for international students, aligning with the overarching goals of the project.

Navigation Bar:

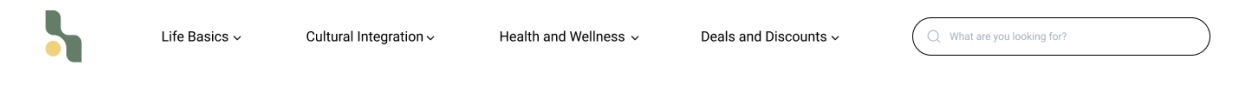


Figure 29(a): Navigation bar design to use across the website pages

Footer:

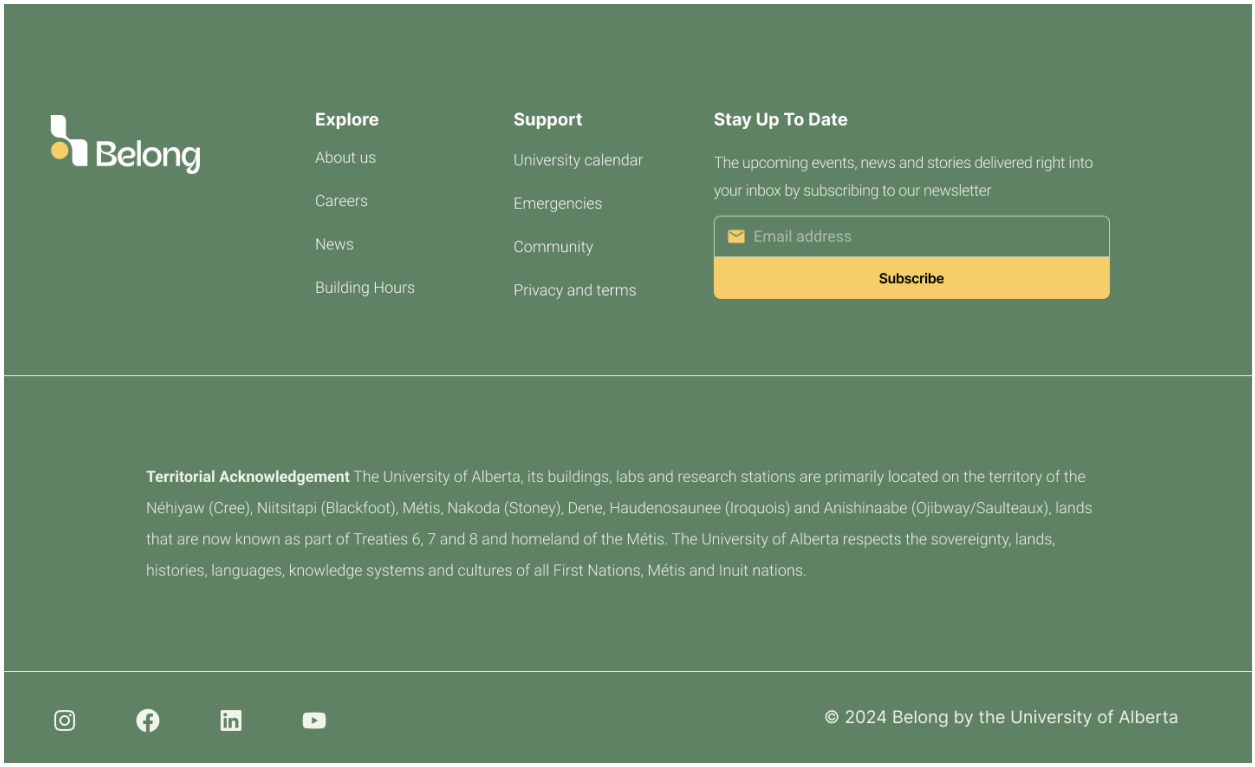


Figure 29(b): Footer design to use across the website pages

Navigation Menu:

Life Basics

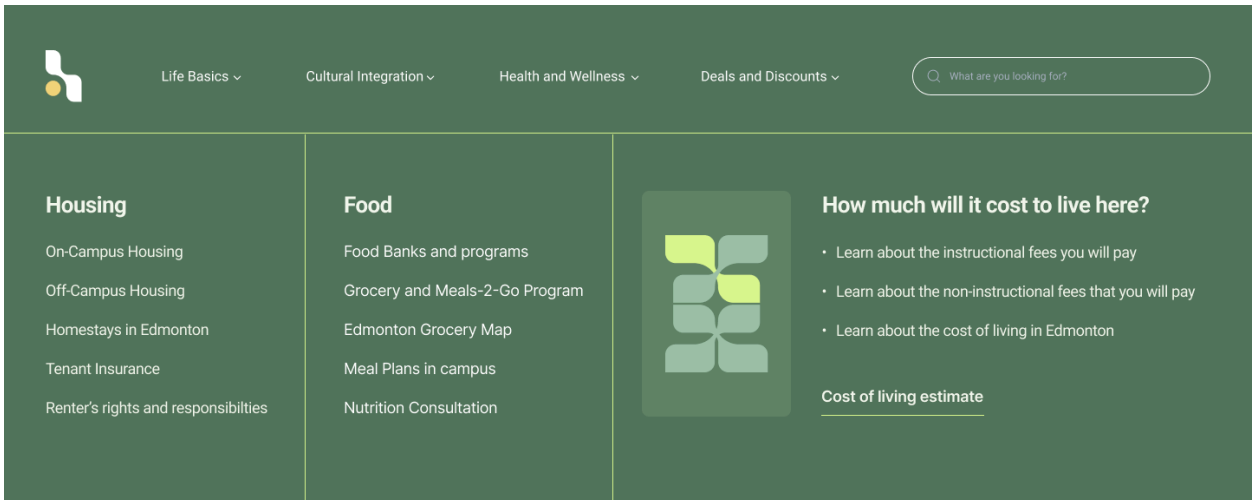


Figure 30(a): Main navigation menu for "Life Basics" section

Cultural Adaptation

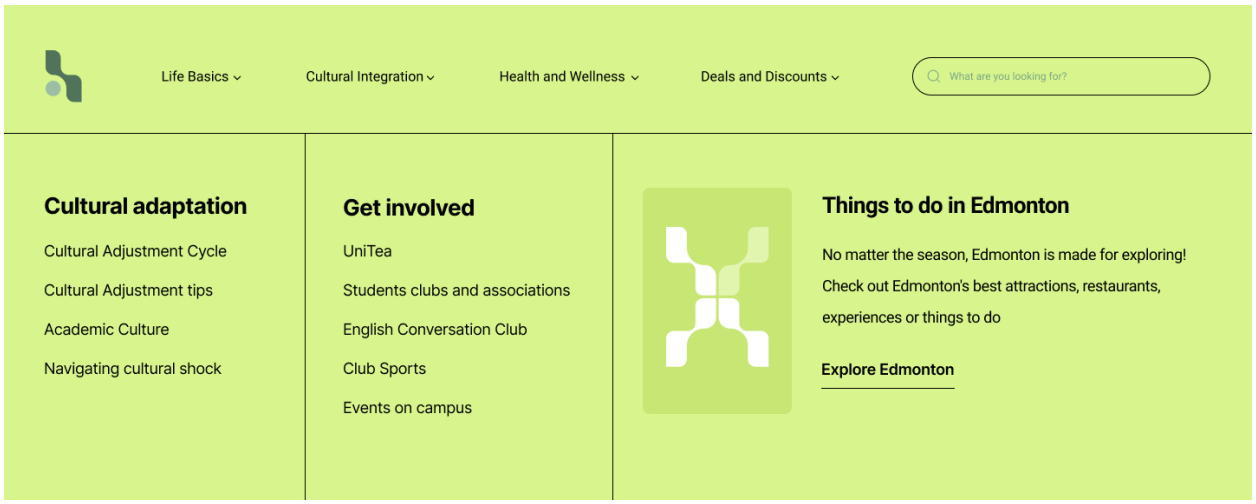


Figure 30(b): Main navigation menu for "Cultural Integration" section

Health and Wellness

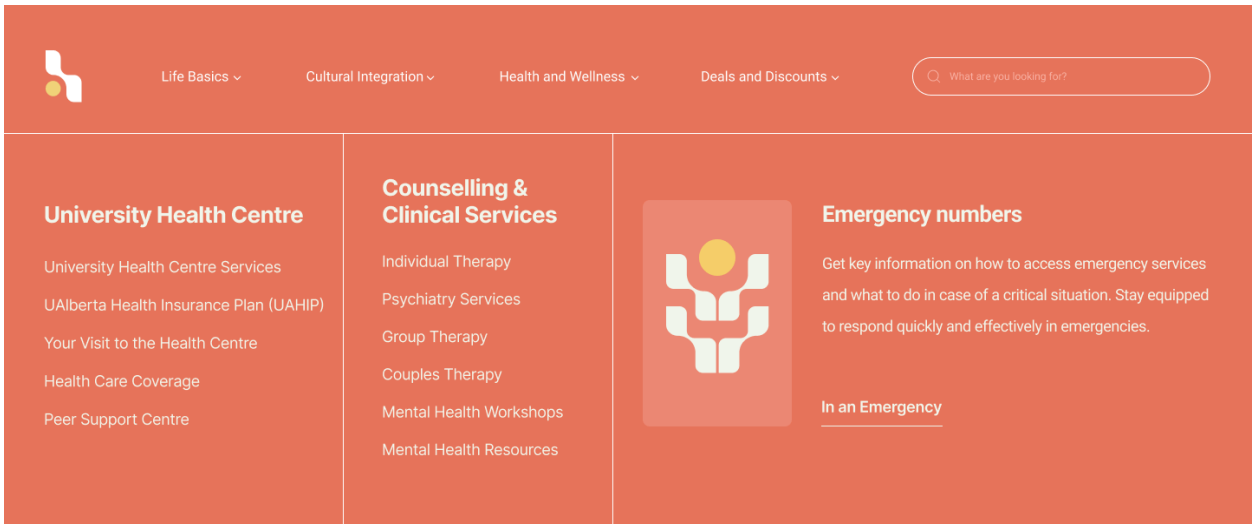
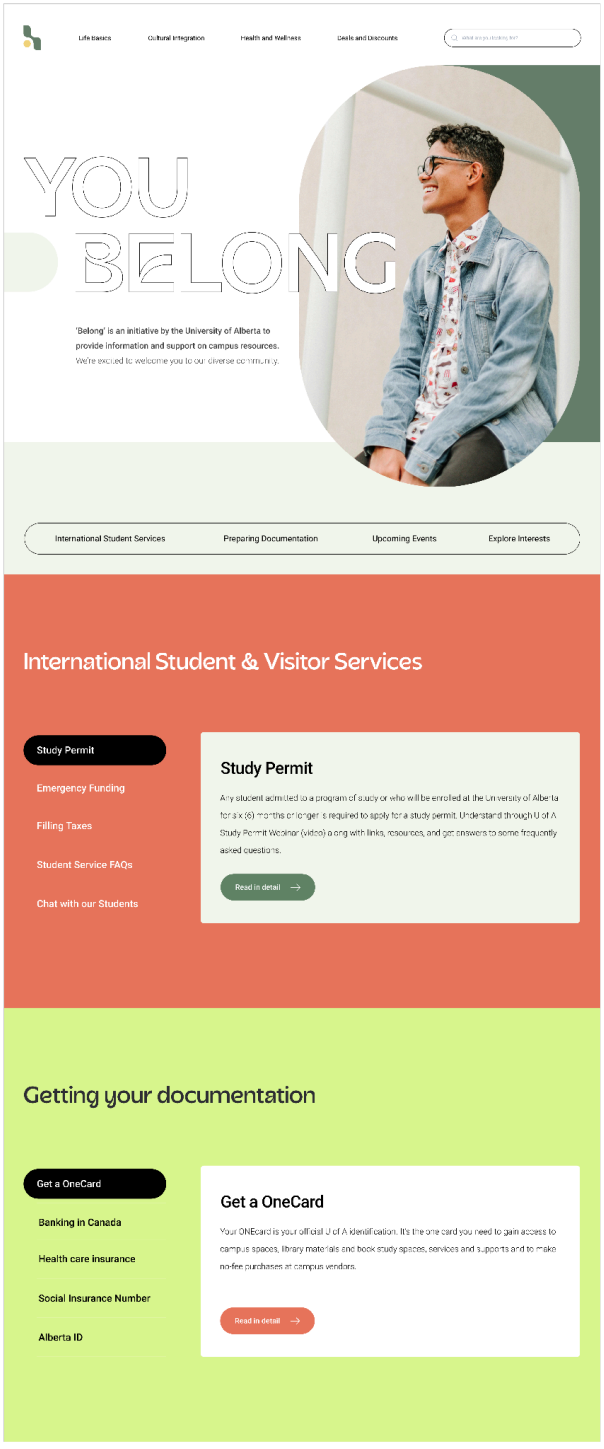


Figure 30(c): Main navigation menu for "Health and Wellness" section

Homepage sections (separated in half)



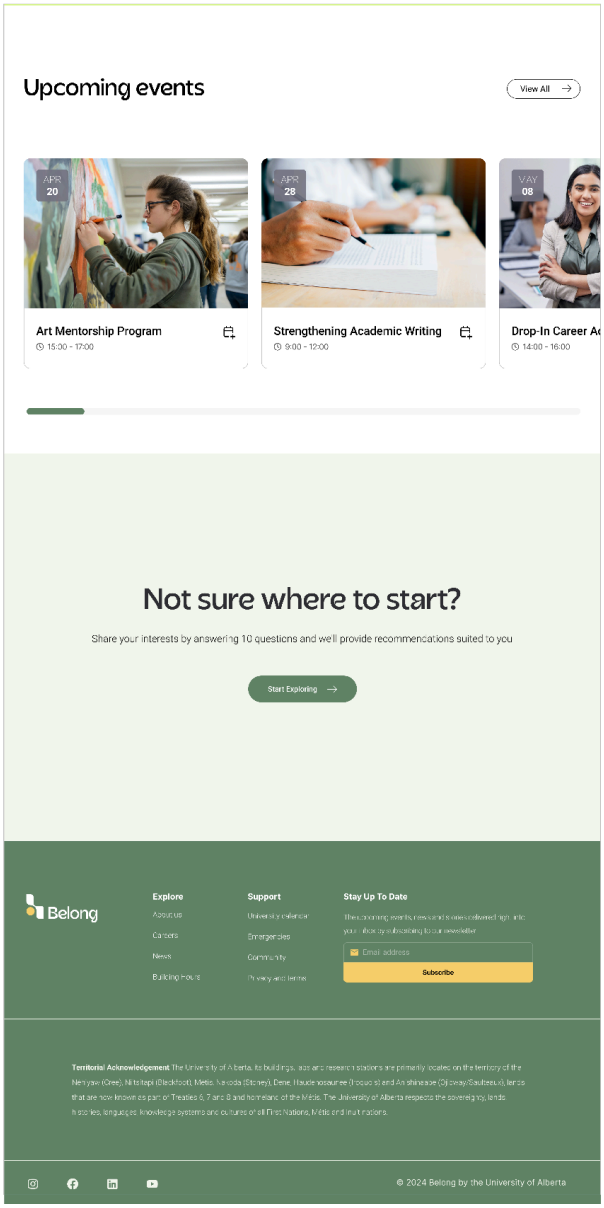


Figure 31: Landing page for "Belong"

Life Basics > Housing page:

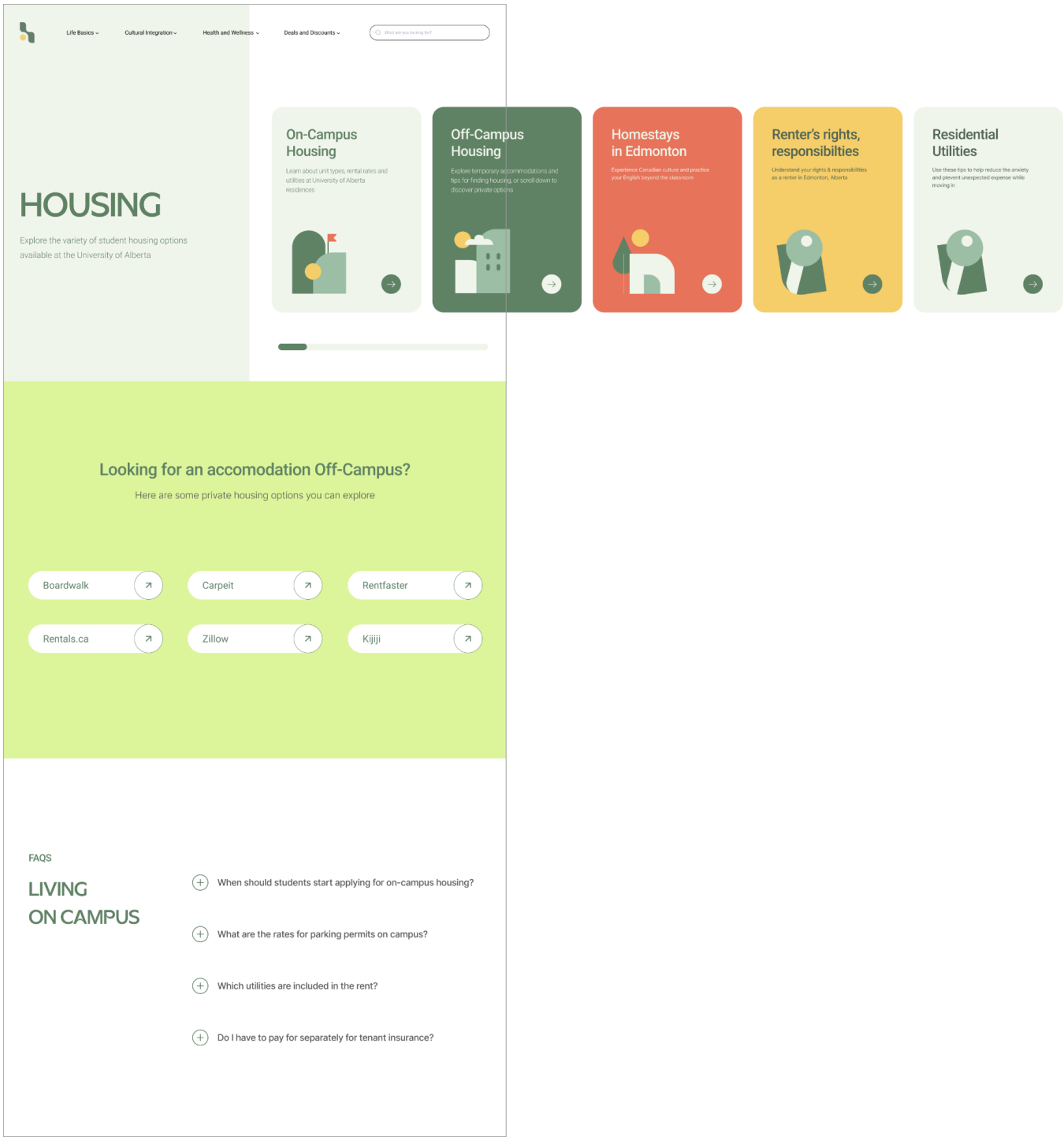


Figure 32: Student Housing Options

Life Basics > Food Sources Page:

Figure 33: Food resources around the campus

Cultural Adaptation > Adaptation Resources:

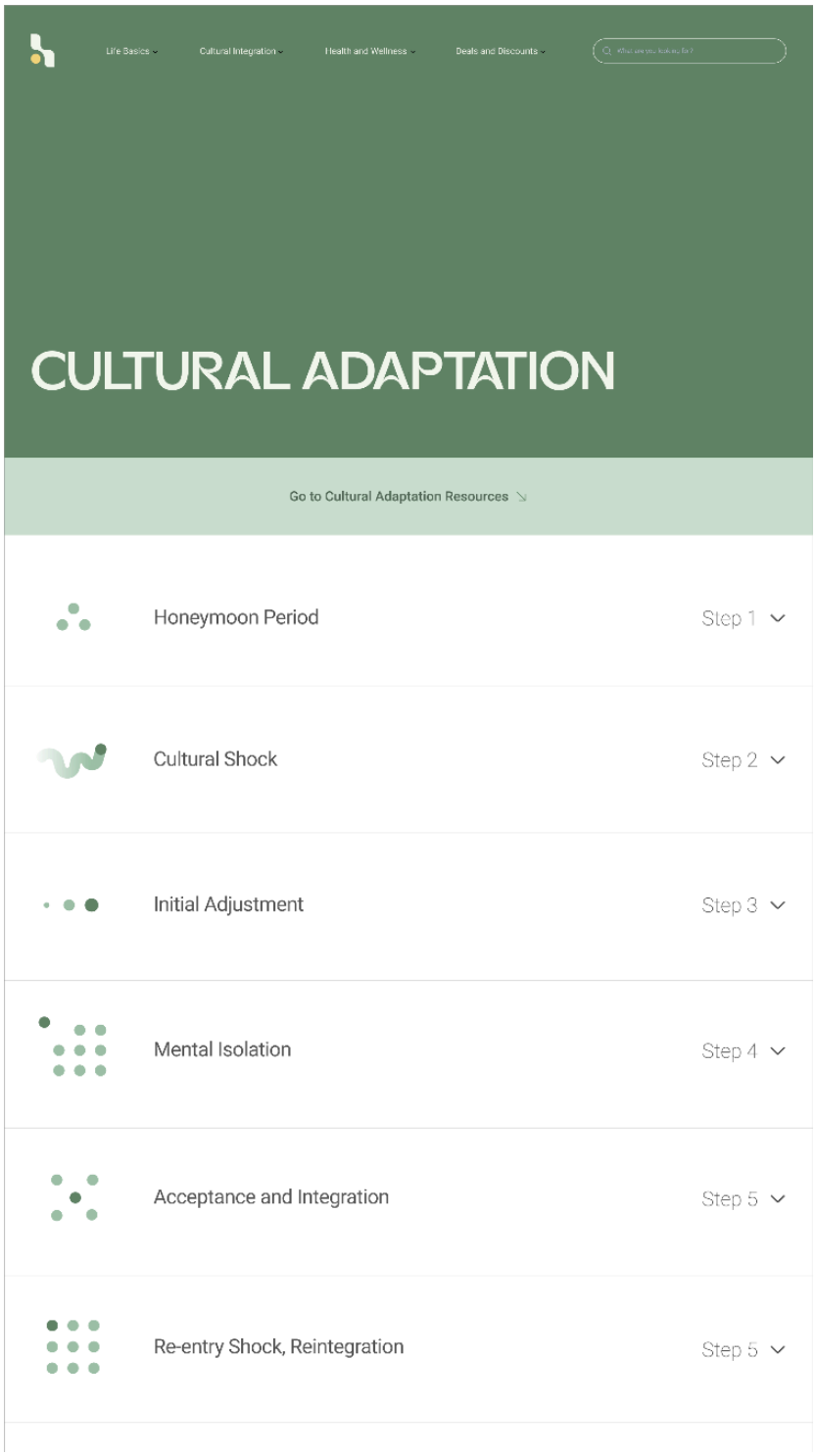

Life Basics
Cultural Integration
Health and Wellness
Deals and Discounts
CULTURAL ADAPTATION
Go to Cultural Adaptation Resources
Honeymoon Period
Step 1
Cultural Shock
Step 2
Initial Adjustment
Step 3
Mental Isolation
Step 4
Acceptance and Integration
Step 5
Re-entry Shock, Reintegration
Step 5

Figure 34: Cultural adaptation resources

Cultural Adaptation > Get Involved:

Figure 35: Campus life engagement for students

Health and Wellness > University's Health Centre

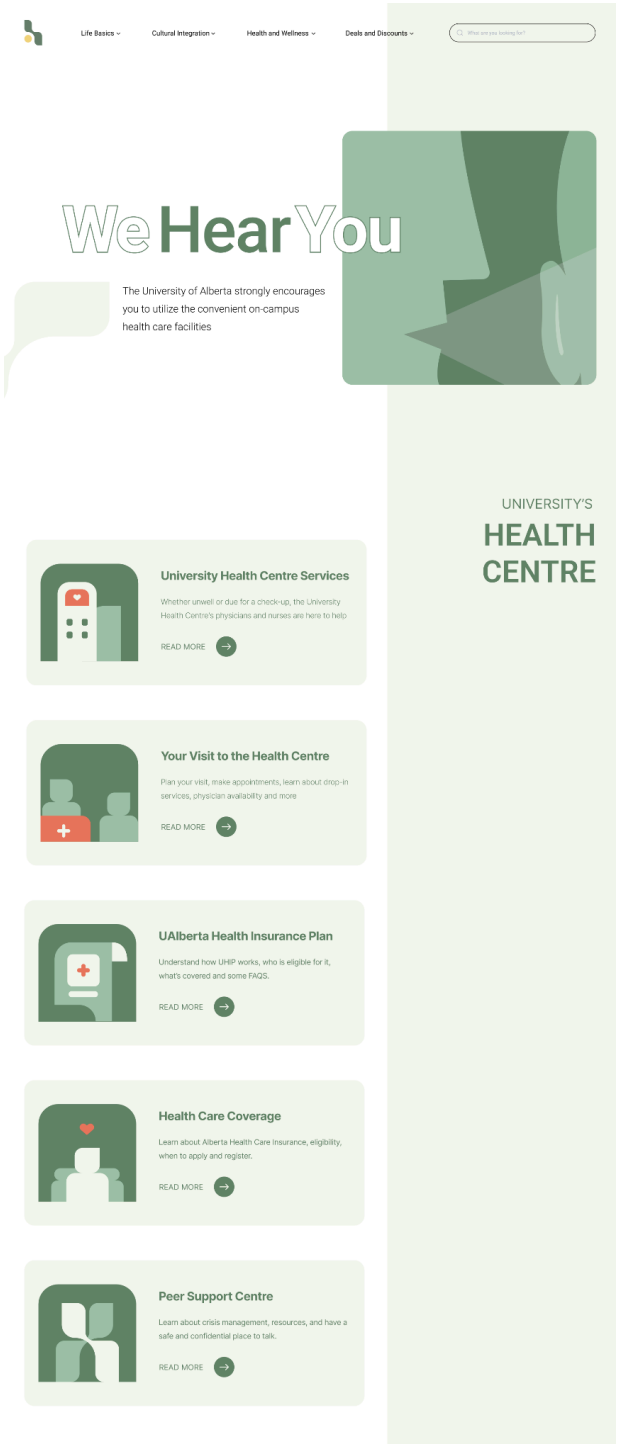


Figure 36: University Health Centre: Healthcare Services and Support

Health and Wellness > Counseling & Clinical Services

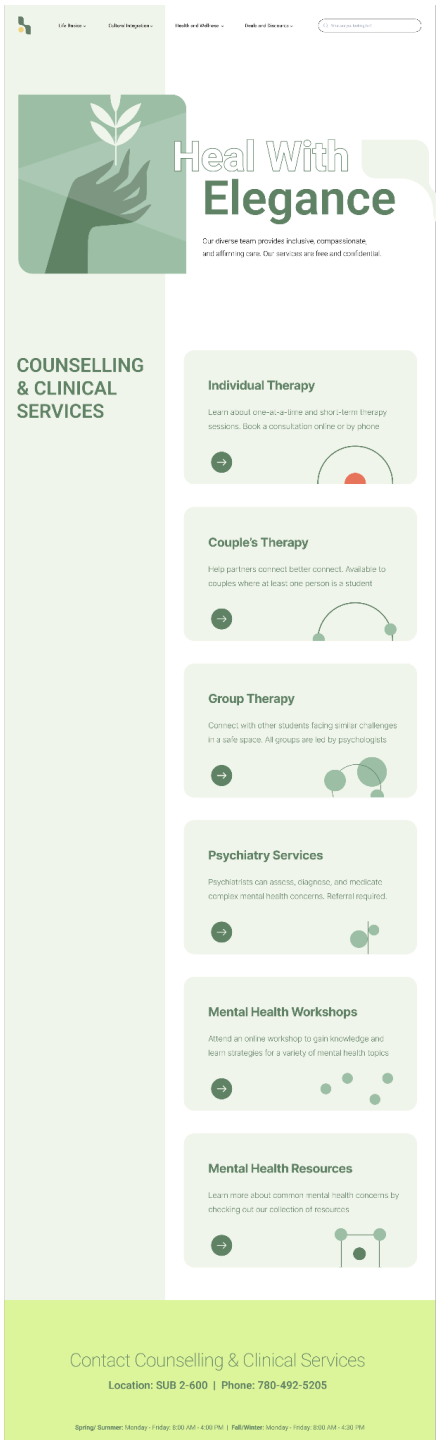


Figure 37: Counselling & Clinical Services: Mental Health Support and Resource

5. Conclusion

5.1 Summary of Study

The study aims to improve information accessibility for international graduate students at the University of Alberta, addressing the significant challenges they face in adapting to a new educational environment. By enhancing the presentation and accessibility of information on the university's website, it aids academic and social integration of international students, ultimately contributing to their success and well-being. The primary hypothesis is that better-organized and accessible information will significantly improve support for international students, easing their adjustment and reducing stress.

To test this hypothesis, a combination of qualitative and quantitative methods was employed. Surveys were conducted with six international graduate students from diverse backgrounds to assess their experiences and perceptions of the university's website.
A comprehensive website audit was carried out to evaluate the current user experience design and information accessibility. User experience activities, including card sorting and usability testing sessions, provided further insights into how students interact with the website and highlighted areas for improvement.

To address these issues, the study proposes "Belong," a dedicated platform designed to enhance information accessibility and organization for international students. "Belong" offers a centralized, user-friendly interface that aggregates essential resources, reducing the need

for extensive navigation and simplifying the user experience. It incorporates interactive elements, visual aids, and a consistent visual hierarchy to improve usability. By doing so, “Belong” aims to make the transition smoother for international students, helping them feel more supported and integrated into the university community.

In conclusion, this study highlights the critical role of accessible information in supporting the transition and success of international students at the University of Alberta. By implementing “Belong” and addressing usability issues, the university can better meet the needs of its diverse student population, creating a more supportive and effective environment for their academic and social integration.

5.2 Key questions, findings, implications

The project explored the specific challenges faced by international students in accessing information and assessed the efficacy of the university’s current information dissemination methods. Key questions included:

- How well do international students understand and access the available resources?
- What are the cultural and systemic barriers impacting their information access?
- How can the university’s website be redesigned to better meet their needs?

The findings revealed that international students often struggle with information overload, lack of awareness about available resources, and unfamiliarity with the local education system. These issues result in increased cognitive load, missed opportunities for assistance, and overall frustration, hindering their ability to adapt and succeed.

The findings also underscore the need for a more user-centric design approach to the university websites. Simplifying navigation, establishing a clear visual hierarchy, and integrating interactive elements were identified as crucial steps to improve the user experience. By addressing these issues, the university can create a more supportive and accessible environment for international students.

Improving information accessibility on the university's website can significantly enhance international students' ability to navigate their academic journey, reducing stress and increasing their overall satisfaction. This research contributes valuable insights into the broader field of educational user experience design, highlighting the critical role of user-centered approaches in supporting diverse student populations.

By focusing on these areas, the study aims to foster a more inclusive and supportive academic environment for international students at the University of Alberta, ultimately contributing to their success and well-being.

5.3 Recommendations

The University of Alberta could initiate a redesign of its website to significantly improve information accessibility, ensuring international students can easily navigate and access the resources they need for a smoother transition and successful experience. This can be a

significant project encompassing various sections and functionalities to better meet the diverse needs of the student population. Key recommendations include simplifying the navigation structure, creating a clear visual hierarchy, and incorporating interactive elements such as search functions and filters to ease information retrieval. Providing multilingual support and culturally sensitive content can further help in addressing the unique challenges faced by international students. This project could also expand to include dedicated sections for housing, healthcare, academic advising, social integration, and mental health resources, ensuring a holistic approach to student support. By adopting these recommendations, the university can create a more inclusive, supportive, and user-friendly online environment that significantly enhances the experience and success of its international student community.

5.4 Challenges and Limitations

The challenges and limitations of this project are multifaceted, reflecting the complexity of addressing the needs of international students at the University of Alberta. One significant limitation is the relatively small sample size used in the study, which may not fully capture the diversity of the international student population. This limitation could result in findings that do not adequately represent the varied experiences and needs of all international students, potentially skewing the results and reducing the overall validity of the conclusions drawn. Given the wide range of backgrounds, experiences, and perspectives of the participants, the feedback was often varied and sometimes conflicting. This made affinity mapping an essential part of the process to identify common themes and patterns in the diverse feedback.

Language posed a significant challenge throughout the project, as the idea of including a language filter was considered. However, with the university's student population representing 156 different countries, including all languages would have required an in-depth linguistic study and could still exclude some students, creating bias and compromising inclusivity. To address this, I chose to simplify the language used throughout the platform, aligning it with a basic English proficiency level at the University of Alberta, avoiding jargon and complex sentences, ensuring that communication remained easy to understand for a broad audience.

The scope of the analysis primarily focused on specific aspects of the university's website, particularly its information architecture, interactive visualizations, and content organization. While these are critical components in enhancing the accessibility of resources, the focus on digital aspects might inadvertently overlook other essential factors, such as the quality and availability of in-person support services, which are equally important for international students. This narrow focus may limit the extensiveness of the project and could result in a failure to address other significant barriers that international students face.

Another challenge is the issue of generalizability. The findings and recommendations generated through this research are tailored to the specific context of the University of Alberta. As such, they may not be applicable to other institutions, especially those with different student demographics, resource availability, or institutional structures. This limitation could restrict the broader applicability of the research, making it less useful to other universities seeking to address similar issues.

User personas were developed primarily to focus on international students. However, to implement this solution in real life, it is essential to consider a more diverse range of students, including domestic students, First Nations students, part-time students, students with disabilities, LGBTQ+ students, and those from various socioeconomic backgrounds. Ensuring inclusivity in the platform design requires addressing the needs of all student groups, not just international students.

Furthermore, the implementation of the recommended website redesign poses several practical challenges. Technological constraints, such as the existing infrastructure of the university's website, may limit the extent to which the proposed changes can be made. Financial and time resources are also significant considerations, as redesigning and restructuring a major university platform can be costly and time-consuming. These constraints may hinder the full realization of the project's goals, leading to compromises in the final implementation.

User adoption presents another potential challenge. Even with an improved website, there may be resistance or slow uptake from the student body, particularly if the changes are not communicated effectively or do not align with students' expectations and preferences. Ensuring that the redesigned platform is user-friendly and meets the needs of international students will require careful testing, iteration, and ongoing user feedback.

5.5 Future research

Future research should aim to address the limitations of this study by expanding the sample size to include a more diverse and representative group of international students from various academic disciplines and cultural backgrounds. Longitudinal studies could be conducted to track the long-term impact of improved information accessibility on international students' academic performance, social integration, and overall well-being. Further research could also explore the integration of emerging technologies, such as AI-driven chatbots and personalized content delivery, to enhance user experience and support. Comparative studies between different universities' approaches to international student support could provide valuable insights and best practices. Finally, involving international students in the design and continuous improvement process of the platform can ensure that the evolving needs and preferences of this population are consistently met.

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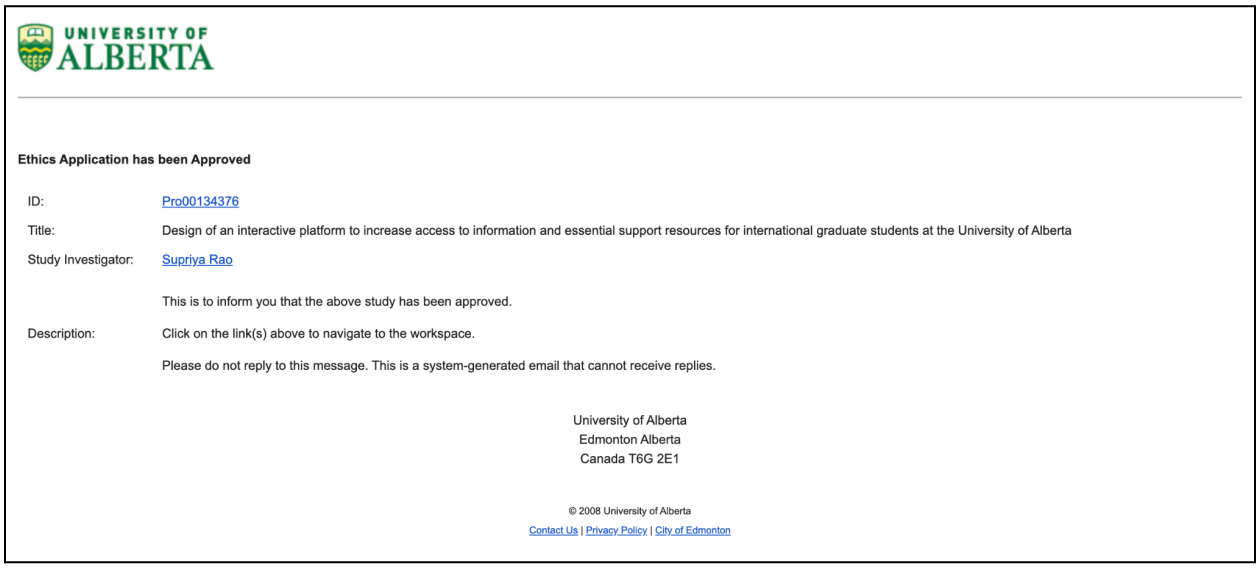
7. Appendices

7.1 Ethics Application



UNIVERSITY OF ALBERTA

Ethics Application has been Approved

ID:	Pro00134376
Title:	Design of an interactive platform to increase access to information and essential support resources for international graduate students at the University of Alberta
Study Investigator:	Supriya Rao
	This is to inform you that the above study has been approved.
Description:	Click on the link(s) above to navigate to the workspace.
	Please do not reply to this message. This is a system-generated email that cannot receive replies.

University of Alberta
Edmonton Alberta
Canada T6G 2E1

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ID: Pro00134376 **Pro00134376** 1.1 Study Identification
Status: Approved

1.1 Study Identification

Please answer all relevant questions that will reasonably help to describe your study or proposed research.

1.0 * **Short Study Title** *(restricted to 100 characters)*:
Design of an interactive platform to increase access to information and essential support resources for international graduate students at the University of Alberta

2.0 * **Complete Study Title** *(can be exactly the same as short title)*:
Design of an interactive platform to increase access to information and essential support resources for international graduate students at the University of Alberta

3.0 * **Select the appropriate Research Ethics Board (***Detailed descriptions are available at here***):**
Research Ethics Board 2

4.0 * **Is the proposed research:**
Unfunded

5.0 * **Name of local Principal Investigator:**
Supriya Rao

6.0 * **Type of research/study:**
Graduate Student

7.0 * **Institutional Affiliation:**

8.0 **Investigator's Supervisor***(required for applications from undergraduate students, graduate students, post-doctoral fellows and medical residents to REBs 1 & 2. HREB does not accept applications from student PIs)*:
Gillian Harvey

9.0 **Study Coordinators or Research Assistants:** People listed here can edit this application and will receive all email notifications for the study:

Name	Employer
There are no items to display	

10.0 **Co-Investigators:** People listed here can edit this application and will receive email notifications *(Co-investigators who do not wish to receive email, should be added to the study team below instead of here).*
If your searched name does not come up when you type it in the box, the user does not have the Principal Investigator role in the online system. Click the following link for instructions on how to Request an Additional Role.

Name	Employer
There are no items to display	

11.0 **Primary Admin Contact** *(a member of study team)*:

12.0 **Study Team:** *(co-investigators, supervising team, and other study team members) - People listed here cannot view or edit this application and do not receive email notifications.*

Last Name	First Name	Organization	Role/Area of Responsibility	Phone	Email

There are no items to display

ID: Pro00134376 **Pro00134376** 1.4 Conflict of Interest
Status: Approved

1.4 Conflict of Interest

1.0 * **Are any of the investigators or their immediate family receiving any personal remuneration (including investigator payments and recruitment incentives but excluding trainee remuneration or graduate student stipends) from the funding of this study that is not accounted for in the study budget?**
○ Yes ● **No**

2.0 * **Do any of investigators or their immediate family have any proprietary interests in the product under study or the outcome of the research including patents, trademarks, copyrights, and licensing agreements?**
○ Yes ● **No**

3.0 * **Is there any compensation for this study that is affected by the study outcome?**
○ Yes ● **No**

4.0 * **Do any of the investigators or their immediate family have equity interest in the sponsoring company? (This does not include Mutual Funds)**
○ Yes ● **No**

5.0 * **Do any of the investigators or their immediate family receive payments of other sorts, from this sponsor (i.e. grants, compensation in the form of equipment or supplies, retainers for ongoing consultation and honoraria)?**
○ Yes ● **No**

6.0 * **Are any of the investigators or their immediate family, members of the sponsor's Board of Directors, Scientific Advisory Panel or**

comparable body?
○ Yes ● **No**

7.0 * **Do you have any other relationship, financial or non-financial, that, if not disclosed, could be construed as a conflict of interest?**
○ Yes ● **No**

Please explain if the answer to any of the above questions is Yes:

Important
If you answered YES to any of the questions above, you may be asked for more information.

ID: Pro00134376 **Pro00134376**
Status: Approved 1.5 Research Locations and Other Approvals

1.5 Research Locations and Other Approvals

1.0 * **List the locations of the proposed research, including recruitment activities. Provide name of institution, facility or organization, town, or province as applicable**
The research will be conducted at the University of Alberta, Department of Art and
Design in Edmonton, Alberta

2.0 * **Indicate if the study will use or access facilities, programmes, resources, staff, students, specimens, patients or their records, at any of the sites affiliated with the following** *(select all that apply):*
Not applicable

List all health care research sites/locations:

3.0
Multi-Institution Review

* **3.1 Has this study already received approval from another REB?**
○ **Yes** ● **No**

4.0 **If this application is closely linked to research previously approved by one of the University of Alberta REBs or has already received ethics approval from an external ethics review board***(s)*, **provide the study number, REB name or other identifying information. Attach any external REB application and approval letter in the Documentation Section – Other Documents.**

ID: Pro00134376 **Pro00134376** 2.1 Study Objectives and Design
Status: Approved

2.1 Study Objectives and Design

1.0 * **Provide a lay summary of your proposed research which would be understandable to general public**

This research aims to tackle the common problem of students, particularly newcomers and international students, struggling to find crucial information, for example, finances, counseling services, food & clothing, mental health, housing, etc. buried within the university website needed for a smooth transition and settlement in a new country. The difficulty arises from complex navigation, information overload, a lack of centralized resources, and potential language barriers.

The exploration of "Languages-Cultures" brings to light the intricate ways in which students' cultural backgrounds and language abilities intertwine with their interactions with online information resources. This adds a layer of depth to understanding the dynamics of their resource utilization, emphasizing the need to consider these dimensions in a holistic manner rather than attempting to confine them within predefined categories (Hughes, H. 2006). Like many other institutes, the University of Alberta has a ton of important information scattered across its website. This might result in students struggling to navigate through multiple pages, resulting in frustration, wasted time, and end up missing important deadlines. According to research conducted at California State University, Northridge, this fragmented approach to information delivery hinders the ability to plan academic schedules, engage with campus services, stay informed about campus events and policies, and other important information.

Having a clear and organized approach to information delivery to the international students can:

1. Boost emotional well-being
2. Instill confidence among students as they begin their academic journey
3. Reduce their anxieties related to the unknown aspects of university life

My goal is to ensure interactivity through user-friendly navigation, a well-organized information structure, easy access to the needed resources, and a feedback system.

The methods I will use to conduct my research are:

1. Website audit: This analysis will help me understand the current organizational structure of information on the university's website.
2. Interviews with the international students to understand common challenges and gather feedback. Interviews will also be conducted with administrators and faculty members who interact with international students on a regular basis.
3. Usability testing sessions: The designed portal will be tested with a few international students for potential improvements.

2.0 * **Provide a full description of your research proposal outlining the following:**

- **Purpose**
- **Hypothesis**
- **Justification**
- **Objectives**
- **Research Method/Procedures**
- **Plan for Data Analysis**

Purpose:

This study aims to improve the experience of international students (individuals who come to the University of Alberta from countries outside of Canada to pursue their education) by addressing challenges related to accessing and approaching essential information on the university's website. It also seeks to enhance students' emotional well-being and confidence as they begin their academic journeys.

Hypothesis:

The creation of a centralized student portal is anticipated to yield a substantial improvement in students' ability to access crucial university information and resources. This improvement is likely to make the process of transitioning to a new country smoother and more efficient, instilling a sense of confidence, and contributing to a positive and satisfying university experience.

Justification:

The existing website structure at the University of Alberta poses challenges for students, especially newcomers to understand the process of settling in a new country. By creating a dedicated portal, this research seeks to tackle the fragmentation of information and provide a more cohesive platform for students to access critical details, leading to improved engagement and reduced frustration. The need for such an approach is further proved by the documented struggles (Journal for international students) of international students during their initial phases of adjustment, highlighting the importance of dedicated support.

Objectives:

1. Address the specific challenges encountered by international students, including introduction to basic Canadian systems and adapting to a new culture and environment, emphasizing a greater sense of inclusivity and support. To understand what students need in terms of resources and what hurdles do they face for approaching them

2. To identify international students' resource-using strengths, challenges and information literacy learning approaches.

3. Designing an extensive student portal that consolidates essential university information and resources, specifically made to support international students in their settling-in process(ex: Finances, housing, food & clothing, mental health resources, etc). This initiative aims to reduce their emotional stress and practical challenges during their initial days, encouraging a greater sense of belonging and overall well-being.

4. Evaluating the effectiveness of the portal through user feedback and data analysis, with a particular emphasis on understanding how the portal's provisions contribute to the emotional resilience, self-assuredness, and successful integration of international students within the university community.

Research Method/Procedures

To carry out this study, both qualitative and quantitative research methods will be utilized. This mixed-methods approach will allow me for a more holistic understanding of the experiences and needs of international students concerning their use of online information resources. Each method serves a specific purpose and can provide perspectives into user behaviors and preferences. Following are the details for the procedures involving the participants:

Interviews and Surveys

Interviews will involve a set of questionnaires with multiple choice and some open-ended questions and guided discussions with 3-5 international students to obtain understanding and encourage open dialogue into their experiences, requirements, and motivations. It will also help me with their initial reactions, feedback and opinions about the current University portal and to identify further potential improvements. Additionally, surveys will be distributed among the faculty members and administrators to discern the challenges faced by new international students.

Usability testing

The testing will occur in two phases:

Usability tests will be conducted using high-fidelity wireframes of the new design. Participants will be directed through the wireframes, and their interactions and feedback will be closely observed and recorded. In this assessment, I'll check if students can use the portal easily if the steps make sense to them and will also examine the accessibility and findability of information within the portal.
Final Design Evaluation: In the second stage, I will conduct another round of testing with the fully developed and refined design. I will note down observations from students who will be interacting with the portal in its complete and functional form. This part of the testing with the final product is essential to make sure that our design improvements have effectively addressed any potential issues and that the portal is user-friendly and efficient.

Procedure:

1. Participants will be recruited from the University of Alberta by putting up invitation posters across the Department of Art and Design
2. Informed consent will be obtained from all participants, clearly explaining the purpose of the study, their rights, and the use of their data.
3. Interviews will be scheduled with willing participants.
4. Online surveys will be distributed to international students using university email addresses.
5. Usability testing will be organized at the Graduate Lab at the FAB Building or remotely, as per the participant's preference.

Plan for Data Analysis:
I plan to analyze the qualitative data from interviews and open-ended survey questions using thematic analysis and visualization. Visual representations of the collected data, such as charts, graphs, or diagrams will help me identify patterns, themes, and insights within the data. The results of the analysis will be documented in a research report. This report will include clear explanations of findings, supported by evidence from the data.

3.0 Describe procedures, treatment, or activities that are above or in addition to standard practices in this study area *(eg. extra medical or health-related procedures, curriculum enhancements, extra follow-up, etc)*:
Not applicable

4.0 If the proposed research is above minimal risk and is not funded via a competitive peer review grant or industry-sponsored clinical trial, the REB will require evidence of scientific review. Provide information about the review process and its results if appropriate.
Not applicable

5.0 For clinical trials, describe any sub-studies associated with this Protocol.

Not applicable

ID: Pro00134376 **Pro00134376**
Status: Approved 2.2 Research Methods and Procedures

2.2 Research Methods and Procedures

Some research methods prompt specific ethical issues. The methods listed below have additional questions associated with them in this application. If your research does not involve any of the methods listed below, ensure that your proposed research is adequately described in Section 2.1: Study Objectives and Design or attach documents in the Documentation Section if necessary.

1.0 * **This study will involve the following***(select all that apply)*
Interviews and/or Focus Groups
Participant Observation
Surveys and Questionnaires (including internet surveys)

NOTE 1: Select this if you are directly collecting health information as part of your protocol OR will be conducting a chart/record review/reviewing health data secondarily. This includes anonymized or identifiable health information.

NOTE 2: Select this option if this research ONLY involves analysis of blood/tissue/specimens originally collected for another purpose but now being used to answer your research question. If you are enrolling people into the study to prospectively collect specimens to analyze you SHOULD NOT select this box.

NOTE 3: This section is intended to reflect the secondary use of non-health data. Do NOT select this if you are using data that originally came from health sources, i.e., anonymized administrative data.

ID: Pro00134376 **Pro00134376** 2.5 Interview and/or Focus Groups
Status: Approved

2.5 Interview and/or Focus Groups

1.0 **Will you conduct interviews, focus groups, or both? Provide detail.**
I will conduct individual interviews with international students and will request faculty members and administrators to fill out a survey to understand their experiences while interacting with international students and gain their points of view.

2.0 **How will participation take place (e.g. in-person, via phone, email, Skype)?**
Interviews and surveys will preferably be conducted online to establish a comfortable and open environment for participants. Online interviews discussions via platforms like Google Meet or Zoom will be arranged. The

online meetings will be password protected and sent to the participants prior to the meeting.

3.0 How will the data be collected (e.g. audio recording, video recording, field notes)?
For online interviews, audio recording will be used with participants' consent. Additionally, I will take field notes to document non-verbal cues and any contextual information that may be relevant to the analysis. Video recording will take place only while participants are interacting with the new design mockup. Participants can turn off their cameras during this part, if they feel so. The audio/video recording in Zoom or Google meet will be downloaded to a locally secure device following the session and not stored anywhere online.

ID: Pro00134376 **Pro00134376** 2.7 Participant Observation
Status: Approved

2.7 Participant Observation

1.0 Who will the observer be?
The researcher will be the only person observing the sessions.

2.0 Who is being observed?
The participants, which include international students, will be observed during the sessions.

3.0 Why are they being observed?
They are being observed so that I can understand design accessibility issues with the interface. This way, they can feel more confident and emotionally prepared to start their academic journey at the University of Alberta.

4.0 When and where will participants be observed (i.e. during class, during their workday)?
Participants will be observed while interacting with the new design mockup of the student portal. This observation will take place online only, wherever the participants choose to access and use the portal, which could be from their homes or any location of their preference. The participants will be asked to share their screen as they navigate the interface. The screen might be recorded for observational purposes. The participants can turn their cameras off anytime they feel so.

5.0 Will others be present who are not being observed (i.e. non-participants)?
○ Yes ● **No**

6.0 What data will be collected?
Video and/or audio recordings
Field notes

ID: Pro00134376 **Pro00134376**
Status: Approved 2.9 Surveys and Questionnaires (including Online)

2.9 Surveys and Questionnaires (including Online)

1.0 How will the survey/questionnaire data be collected (i.e. collected in person, or if collected online, what survey program/software will be used etc.)?
The survey data will be collected online using Google Forms, a web-based survey platform. Participants will access and complete the survey through a link provided to them electronically.

2.0 Where will the data be stored once it's collected (i.e. will it be stored on the survey software provider servers, will it be downloaded to the PI's computer, other)?
The survey/questionnaire data will be stored safely on the survey software provider's servers and also downloaded to the researcher's password protected computer for analysis

3.0 Who will have access to the data?
Access to the data will be restricted solely to the researcher

4.0 If you are using a third party research tool, website survey software, transaction log tools, screen capturing software, or masked survey sites, how will you ensure the security of data gathered at that site?
To keep the data secure when using external research tools or websites, I will choose trusted platforms with strong data protection. I'll also make sure to follow security best practices, like using secure connections and updating software, to safeguard the collected data. The computer and any additional apps will be password protected.

ID: Pro00134376 **Pro00134376** 3.1 Risk Assessment
Status: Approved

3.1 Risk Assessment

1.0 * Provide your assessment of the risks that may be associated with this research:
Minimal Risk - research in which the probability and magnitude of possible harms implied by participation is no greater than those encountered by participants in those aspects of their everyday life that relate to the research (TCPS2)

2.0 * Select all that might apply:

Description of Possible Physical Risks and Discomforts	
No	Participants might feel physical fatigue, e.g. sleep deprivation
No	Participants might feel physical stress, e.g. cardiovascular stress tests
No	Participants might sustain injury, infection, and intervention side-effects or complications
No	The physical risks will be greater than those encountered by the participants in everyday life

Possible Psychological, Emotional, Social and Other Risks and Discomforts	
Possibly	Participants might feel psychologically or emotionally stressed, demeaned, embarrassed, worried, anxious, scared or distressed, e.g. description of painful or traumatic events
Possibly	Participants might feel psychological or mental fatigue, e.g intense concentration required

No	Participants might experience cultural or social risk, e.g. loss of privacy or status or damage to reputation
No	Participants might be exposed to economic or legal risk, for instance non-anonymized workplace surveys
No	The risks will be greater than those encountered by the participants in everyday life

3.0 * **Provide details of all the risks and discomforts associated with the research for which you indicated YES or POSSIBLY above.**
There is a possibility of participants feeling anxious and emotional stressed while recalling their initial days at the University. Also, the participants might feel mental fatigue while handling the design mockups in the usability test part.

4.0 * **Describe how you will manage and minimize risks and discomforts, as well as mitigate harm:**
Providing the participants with an appropriate consent process and authorizing them to withdraw at any time from the research without consequences.

5.0 **Is there a possibility that your research procedures will lead to unexpected findings, adverse reactions, or similar results that may require follow-up** *(i.e. individuals disclose that they are upset or distressed during an interview/questionnaire, unanticipated findings on MRI, etc.)*?
○ Yes ● **No**

6.0 **If you are using any tests in this study diagnostically, indicate the member(s) of the study team who will administer the measures/instruments:**

Test Name	Test Administrator	Organization	Administrator's Qualification

There are no items to display

7.0 **If any research related procedures/tests could be interpreted diagnostically, will these be reported back to the participants and if so, how and by whom?**

ID: Pro00134376 **Pro00134376** 3.2 Benefits Analysis
Status: Approved

3.2 Benefits Analysis

1.0 * **Describe any potential benefits of the proposed research to the participants. If there are no benefits, state this explicitly:**
By facilitating easier access to information and assistance, the research intends to uplift confidence and emotional well-being of incoming students, contributing to a stronger sense of community and belonging within the university environment. While the immediate impact of this study's findings might not be directly felt by the participants themselves, their experiences and insights will help many future international students at the University of Alberta in the coming years.

2.0 * **Describe the scientific and/or scholarly benefits of the proposed research:**
This research could serve as a benchmark for universities worldwide, facilitating a smoother transition for international students and fostering a sense of belonging. Such applicability could invite comparative studies across institutions, thus advancing the field of international education. The research also stands at the intersection of various disciplines, from User Research to Inclusive Design and social integration. This multidisciplinary approach enriches the project and paves the way for collaborative research opportunities. Scholars from diverse backgrounds, including education, psychology, and technology, could find avenues for exploration within this framework, leading to solutions that benefit both students and academics.

3.0 **If this research involves risk to participants explain how the benefits outweigh the risks.**
Not applicable

ID: Pro00134376 **Pro00134376** 4.1 Participant Information
Status: Approved

4.1 Participant Information

1.0 * **Will you be recruiting human participants** *(i.e. enrolling people into the study, sending people online surveys to complete)***?**
● **Yes** ○ No

1.1 Will participants be recruited or their data be collected from Alberta Health Services or Covenant Health or data custodian as defined in the Alberta Health Information Act?
○ Yes ● **No**

ID: Pro00134376 **Pro00134376** 4.2 Additional Participant Information
Status: Approved

4.2 Additional Participant Information

1.0 **Describe the participants that will be included in this study. Outline ALL participants** *(i.e. if you are enrolling healthy controls as well)*:

International Students:

The participants in this research will comprise graduate international students who have recently relocated to Canada for their academics and are currently enrolled at the University of Alberta. These participants will represent a diverse group in terms of their nationalities and cultures.

University Administrators/Faculty:

This group will consist of administrators and faculty members from the University of Alberta. They will have experience working with international students, particularly those in their early days at the university.

2.0 * **Describe and justify the inclusion criteria for participants** *(e.g. age range, health status, gender, etc.)*:

Participants must be currently enrolled as international students at the University of Alberta. It makes sure that participants are actively experiencing the university environment. Inclusion will be based on various nationalities to gather a wide range of cultural backgrounds and perspectives. The students will be mostly between the ages of 22-40, and there will be no specific gender restrictions. Participants are expected to have a moderate to high level of proficiency in the English language.

Administrators and faculty members from the International Services Centre (ISC) at Telus who have experience working with international students, particularly those in their early days at the university, will be included. There will be no specific age or gender restrictions for them.

3.0 **Describe and justify the exclusion criteria for participants:**

Students who are not currently enrolled at the University of Alberta will be excluded as this study is particularly for the University of Alberta.

Domestic or permanent resident students will be excluded from the study. The primary focus is on international students who face challenges related to immigration and cultural adjustment.

Participants with limited English language proficiency will be excluded. Participants can assess themselves whether or not they fit in this criteria.

Participants outside the range of 24-32 will not be considered.

Administrators or faculty members who do not have experience working with international students, especially during their initial days at the university, may not provide material relevant to the study's objectives. Hence, such individuals may be excluded.

4.0 **Participants**

4.1 How many participants do you hope to recruit *(including controls, if applicable?)*
6
4.2 Of these, how many are controls, if applicable?
NA
4.3 If this is a multi-site study, how many participants do you anticipate will be enrolled in the entire study?

5.0 **Justification for sample size:**
I aim to include around 3-5 international students and 1-2 university administrators/faculty members to get a good mix of perspectives while managing available resources effectively.

ID: Pro00134376 **Pro00134376**
Status: Approved 4.4 Recruitment of Participants (non-Health)

4.4 Recruitment of Participants (non-Health)

1.0 Recruitment

1.1 How will you identify potential participants? Outline all of the means you will use to identify who may be eligible to be in the study*(i.e. response to advertising such as flyers, posters, ads in newspapers, websites, email, list serves, community organization referrals, etc.)*
To identify potential international student participants, I plan to design posters to put up, inviting interested students to connect with me directly. For university administrators and faculty members, I intend to establish direct in-person communication and subsequently use email invitations as the primary mode of contact.

1.2 Once you have identified a list of potentially eligible participants, indicate how the potential participants' names will be passed on to the researchers AND how will the potential participants be approached about the research.
Once the interested participants reach out to me, I will provide them with detailed information about the study, including its objectives, procedures, and expected time commitment. It will also emphasize the voluntary nature of participation and assure anonymity and confidentiality. The study will take place only if the participants agree and sign the consent form.

2.0 Pre-Existing Relationships

2.1 Will potential participants be recruited through pre-existing relationships with researchers*(e.g. Will an instructor recruit students from his classes, or a physician recruit patients from her practice? Other examples may be employees, acquaintances, own children or family members, etc.)*?
○ Yes ● **No**

3.0 Will your study involve any of the following?*(select all that apply)*
None of the above

ID: Pro00134376 **Pro00134376** 4.5 Informed Consent Determination
Status: Approved

4.5 Informed Consent Determination

1.0 Describe who will provide informed consent for this study*(i.e. the participant, parent of child participant, substitute decision maker, no one will give consent – requesting a waiver)*
The participants themselves will provide informed consent for this study.

1.1 Waiver of Consent Requested
If you are asking for a waiver of participant consent, please justify the waiver or alteration and explain how the study meets all of the

criteria for the waiver. Refer to Article 3.7 of TCPS2 **and provide justification for requesting a Waiver of Consent for ALL criteria (a-e)**

1.2 Waiver of Consent in Individual Medical Emergency
If you are asking for a waiver or alteration of participant consent in individual medical emergencies, please review our guidance document**. Justify the waiver or alteration and explain how the study meets all of the criteria outlined in** Article 3.8 of TCPS2 (a-f)

2.0 **How will consent be obtained/documented? Select all that apply**
Signed consent form

If you are not using a signed consent form, explain how the study information will be provided to the participant and how consent will be obtained/documented. Provide details for EACH of the options selected above:
The signed consent form, to be shared with participants, will comprehensively outline and reaffirm their involvement in various activities such as surveys, interviews, and usability testing. It serves as a transparent document, ensuring participants are well-informed about the extent of their engagement in these research activities.

3.0 **Will every participant have the capacity to give fully informed consent on his/her own behalf?**
● **Yes** ○ No

4.0 **What assistance will be provided to participants or those consenting on their behalf, who may require additional assistance?** *(e.g. non-English speakers, visually impaired, etc.)*
Information and protocol will be sent to the participants via email when they indicate that they are interested in participating. We will also ensure that they have an opportunity to ask questions before signing their consent form.

5.0 * **If at any time a PARTICIPANT wishes to withdraw from the study or from certain parts of the study, describe when and how this can be done.**
The participant can leave the study at any point in time with any further consequences. He/she can communicate to the researcher that they wish to withdraw.

6.0 **Describe the circumstances and limitations of DATA withdrawal from the study, including the last point at which participant DATA can be withdrawn** *(i.e. 2 weeks after transcription of interview notes)*
The participant can withdraw their data within four weeks from the user testing session's date.

7.0 **Will this study involve any group(s) where non-participants are present? For example, classroom research might involve groups which include participants and non-participants.**
○ Yes ● **No**

ID: Pro00134376 **Pro00134376** 5.1 Data Collection
Status: Approved

5.1 Data Collection

1.0 * **Will the researcher or study team be able to identify any of the participants at any stage of the study?**
● **Yes** ○ No

2.0 **Primary/raw data collected will be** *(check all that apply)*:
Directly identifying information - the information identifies a specific individual through direct identifiers (e.g. name, social insurance number, personal health number, etc.)

3.0 **If this study involves secondary use of data, list all original sources:**
The study does not involve secondary use of data.

4.0 **In research where total anonymity and confidentiality is sought but cannot be guaranteed** *(eg. where participants talk in a group)* **how will confidentiality be achieved?**

ID: Pro00134376 **Pro00134376** 5.2 Data Identifiers
Status: Approved

5.2 Data Identifiers

1.0 * **Personal Identifiers:** will you be collecting - at any time during the study, including recruitment - any of the following *(check all that apply)*:
Surname and First Name
Email Address
Full Face Photograph or Other Recording

2.0 **Will you be collecting - at any time of the study, including recruitment of participants - any of the following** *(check all that apply)*:
There are no items to display

3.0 * **If you are collecting any of the above, provide a comprehensive rationale to explain why it is necessary to collect this information:**
Email addresses: The participants' emails will be required to get in touch with them, provide them with forms, and arrange the meetings for the user testing sessions.

Video and audio recording: Videos of participants interacting with the prototype will be recorded during the usability testing session. It will not include their faces. Audio will be recorded to hear back their analysis and thoughts throughout the user testing sessions. The recordings will be made locally to the researcher's computer.

Surname and first name: Participants can choose to be identified in this study through a consent form. Their feedback and perspective should be acknowledged if they would like.

4.0 **If identifying information will be removed at some point, when and how will this be done?**

Pseudonyms or arbitrary initials will be used to remove identifying information of the participants upon request.

5.0 * **Specify what identifiable information will be RETAINED once data collection is complete, and explain why retention is necessary. Include the retention of master lists that link participant identifiers with de-identified data:**
The first and last names of participants (who wish to be identified) will be included in the thesis. It is important to acknowledge the feedback and perspectives of the participants who contribute their time.

6.0 **If applicable, describe your plans to link the data in this study with data associated with other studies (e.g within a data repository) or with data belonging to another organization:**
Not applicable

ID: Pro00134376 **Pro00134376** 5.3 Data Confidentiality and Privacy
Status: Approved

5.3 Data Confidentiality and Privacy

1.0 * **How will confidentiality of the data be maintained? Describe how the identity of participants will be protected both during and after research.**
All identifiable data collected from video recording, names and contact information of the participants, will be kept on a password-protected desktop and hard drive accessible by the me as a researcher alone. Any identifiable elements like their face will be not be shared. All the participants who ask to be anonymous will have their names replaced with pseudonyms or arbitrary initials.

2.0 **How will the principal investigator ensure that all study personnel are aware of their responsibilities concerning participants' privacy and the confidentiality of their information?**
Not applicable

3.0 **External Data Access**

* **3.1 Will identifiable data be transferred or made available to persons or agencies outside the research team?**

Note: If you are conducting research recruiting patients or using data within an AHS facility, please note that AHS de-identification standards consider any FULL date as an identifier (i.e. full DOB, full date of admission, discharge or treatment). As such, please review your data collection forms and if any full date forms part of the data you are collecting and sending to a collaborator and/or sponsor you must indicate YES here AND your consent form must inform participants that their data will be sent off site.)

○ **Yes** ● **No**

ID: Pro00134376 **Pro00134376**
5.4 Data Storage, Retention, and Disposal

Status: Approved

5.4 Data Storage, Retention, and Disposal

1.0 * **Describe how research data will be stored, e.g. digital files, hard copies, audio recordings, other. Specify the physical location and how it will be secured to protect confidentiality and privacy.** *(For example, study documents must be kept in a locked filing cabinet and computer files are encrypted, etc. Write N/A if not applicable to your research)*

To protect the confidentiality the data will be stored in computer based encrypted files. The data will be inaccessible to anyone apart from the researcher and the information will be solely used from the study purpose.

2.0 * **University policy requires that you keep your data for a minimum of 5 years following completion of the study but there is no limit on data retention. Specify any plans for future use of the data. If the data will become part of a data repository or if this study involves the creation of a research database or registry for future research use, please provide details.** *(Write N/A if not applicable to your research)*

Not Applicable

3.0 **If you plan to destroy your data, describe when and how this will be done? Indicate your plans for the destruction of the identifiers at the earliest opportunity consistent with the conduct of the research and/or clinical needs:**

The data will be retained for five years after completion, after which all the digital files will be permanently deleted from the encrypted hard drive, and any hard copies will be shredded.

ID: Pro00134376 **Pro00134376** Documentation

Status: Approved

Documentation

Add documents in this section according to the headers. Use Item 11.0 "Other Documents" for any material not specifically mentioned below.

Sample templates are available by clicking HERE.

1.0 Recruitment Materials:

Document Name	Version	Date	Description
Call for participants poster(0.03)	0.03	11/26/2023 11:52 PM	
Email Write Up for the Administrator at International Student Department(0.01)	0.01	11/13/2023 3:08 PM	

2.0 Letter of Initial Contact:

Document Name	Version	Date	Description
Letter of Initial Contact(0.02)	0.02	11/13/2023 3:08 PM	
Letter of Initial Contact(0.01)	0.01	11/13/2023 3:08 PM	

3.0 Informed Consent / Information Document(s):

3.1 What is the reading level of the Informed Consent Form(s):

3.2 Informed Consent Form(s)/Information Document(s):

Document Name	Version	Date	Description
Consent form(0.02)	0.02	11/13/2023 3:09 PM	

4.0 Assent Forms:

Document Name	Version	Date	Description
There are no items to display			

5.0 Questionnaires, Cover Letters, Surveys, Tests, Interview Scripts, etc.:

Document Name	Version	Date	Description
Questionnaire(0.02)	0.02	11/13/2023 3:09 PM	

6.0 Protocol/Research Proposal:

Document Name	Version	Date	Description
There are no items to display			

7.0 Investigator Brochures/Product Monographs:

Document Name	Version	Date	Description
There are no items to display			

8.0 Health Canada No Objection Letter *(NOL)*:

Document Name	Version	Date	Description
There are no items to display			

9.0 Confidentiality Agreement:

Document Name	Version	Date	Description
There are no items to display			

10.0 Conflict of Interest:

Document Name	Version	Date	Description
There are no items to display			

11.0 Other Documents:
For example, Study Budget, Course Outline, or other documents not mentioned above

7.2 Surveys

7.2.1 Consent Form

UNIVERSITY OF ALBERTA

PARTICIPANT CONSENT FORM

Title of Study: Design of an interactive platform to increase access to information and essential support resources for international graduate students at the University of Alberta

Contact Information:
Principal Investigator: Supriya Rao, MDes Student, Visual Communication Design
Mailing Address: 10920, 53 Ave NW
Email: ssr1@ualberta.ca
Phone: 587-879-1908

Supervisor: Gillian Harvey, Associate Professor, Department of Art & Design
Email: gharvey@ualberta.ca

You are being invited to take part in a research study. Before you take part, a study member is available to explain the project, and you are free to ask any questions about anything you do not understand. You will be given a copy of this form for your records.

Why am I being asked to take part in this research study?

You're being asked to join this research study because, as an international student at the University of Alberta, your experiences are vital. Your input will help us better understand the challenges you and others confront when beginning the journey as immigrants at the University of Alberta. By sharing your insights, you're directly contributing to developing an interactive and easily accessible platform for delivering essential information and support to international students like yourself, making the university experience smoother and encouraging mental well-being.

What is the reason for doing the study?

Students who come to Edmonton to pursue their studies at the University of Alberta. This journey is filled with mixed emotions like excitement, nervousness, and even some anxiety, often compounded by the unfamiliarity of a new environment. Despite the wealth of resources available at the University, many students remain unaware of when and how to access these resources when they need them the most. This lack of awareness can lead to emotional stress and hinder their confidence in navigating university life. Consequently, the primary objective of this study is to enhance the information delivery system and provide guidance on effectively

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Version: October 17, 2023

accessing these vital resources, thereby alleviating stress and bolstering students' confidence in their university experience.

What will I be asked to do?

In the first phase? We would like you to complete a survey with questions about your experience at the University of Alberta. This survey involves open-ended questions you would have to answer as per your experience. This survey is an initial data collection method to gather your feedback about your experience dealing with everyday things after you moved to Edmonton. In addition to this, we would like to interview you by discussing to know more about your background and where you come from. These individual discussions will last between 30 and 60 minutes, depending on what you have to say and will take place virtually (Zoom, Skype, Google Meet). While meeting, you can turn off your camera at any time.

In the second phase, I would like you to participate in testing the rough draft of the design virtually. I will direct you through the wireframes, and your interactions and feedback will be closely observed and recorded. In this assessment, I'll check if you can navigate the system proposed and developed by me with ease and note down the observations. I will also examine the accessibility and navigability of information within the portal.

In the third phase, I will conduct another round of testing with the fully developed and refined design. I will note observations from students interacting with the portal in its complete and functional form. This part of the testing with the final product is essential to make sure that our design improvements have effectively addressed any potential issues and that the portal is user-friendly and efficient.

What are the risks?

There is a possibility of participants feeling anxious and emotionally stressed while recalling their initial days at the University. Also, participants might feel minor mental fatigue while handling the design mockups in the usability test part. However, you are able to withdraw at any time from the research without consequences in case of any discomfort. It is not possible to know all of the risks that may happen in a study, but we have taken all reasonable safeguards to minimize any known risks to you.

What are the benefits to me?

By facilitating easier access to information and assistance, the research intends to uplift the confidence and emotional well-being of incoming international students, contributing to a stronger sense of community and belonging within the university environment. While the participants might not directly feel the immediate impact of this study's findings, their experiences and insights will help many future international students at the University of Alberta in the coming years.

Do I have to take part in the study?

Being in this study is your choice. If you decide to take part, you can change your mind and withdraw at any point until the next 30 days. After that point, we cannot remove you from the study because the data will have been analyzed. To withdraw from the study please contact Supriya Rao (ssr1@ualberta.ca).

Will my information be kept private?

During this study, we will do everything we can to ensure that all information you provide is kept private. No information relating to this study that includes your name will be released outside of the researcher's office or published by the researchers unless you give us your express permission.

All identifiable data collected from video recording, names and contact information of the participants will be kept on a password-protected desktop and hard drive accessible by the researcher alone. Any identifiable elements, like participants' faces, will not be shared. All the participants who ask to be anonymous will have their names replaced with pseudonyms or arbitrary initials.

What will happen to the information or data that I provide?

The information you provide will form part of Mrs. Supriya Rao's thesis in Visual Communication Design. What you say may also be used as part of public or academic presentations, in news or scholarly publications, and, for example during teaching. At no point will you be identified in this work. After the study is done, we will store your data for a minimum of 5 years. Any physical papers and transcripts will be stored in the researcher's password-protected computer system. These papers will be securely shredded after Supriya Rao's thesis is complete. Electronic data will be stored on a secure University of Alberta Google drive. The data will be stored for at least 5 years but may be kept longer for future research. Your name will never be associated with any electronic data. Your data may be linked to other data for research purposes only to increase the usefulness of the data.

What if I have questions?

If you have any questions about the research now or later, please contact Supriya Rao (ssr1@ualberta.ca) or my supervisor Gillian Harvey (gharvey@ualberta.ca).
If you have any questions regarding your rights as a research participant, you may contact the University of Alberta Research Ethics Office at reoffice@ualberta.ca or 780-492-2615 and quote Ethics ID Pro00134376. This office is independent of the study investigators.

How do I indicate my agreement to be in this study?

By signing below, you understand:
• That you have read the above information and have had anything you do not understand explained to you satisfactorily.
• That you will be taking part in a research study.
• That you may leave the research study at any time.
• That you do not waive your legal rights by being in the study
• That the investigators' and involved institutions' legal and professional obligations are not changed by participating in this study.
• That you agree to the data being stored as part of a data repository

SIGNATURE OF STUDY PARTICIPANT

_____
Name of Participant

I give permission for my real name to be used: ☐ Yes ☐ No

Pseudonym: _____

_____ _____
Signature of Participant Date
SIGNATURE OF PERSON OBTAINING CONSENT

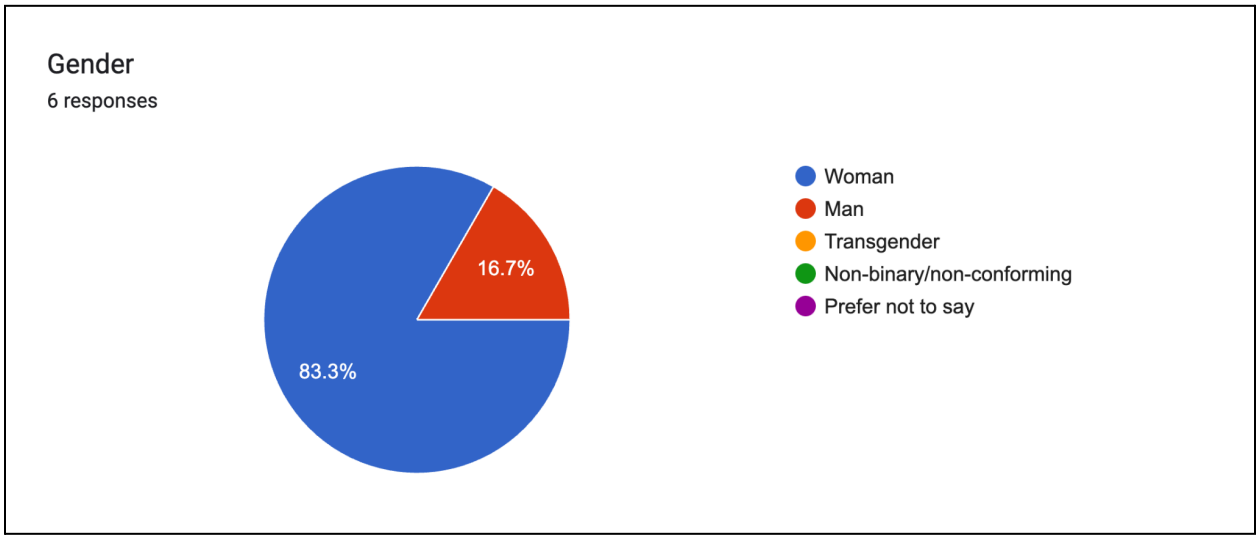
_____ _____
Name of Person Obtaining Consent Contact Email/Number

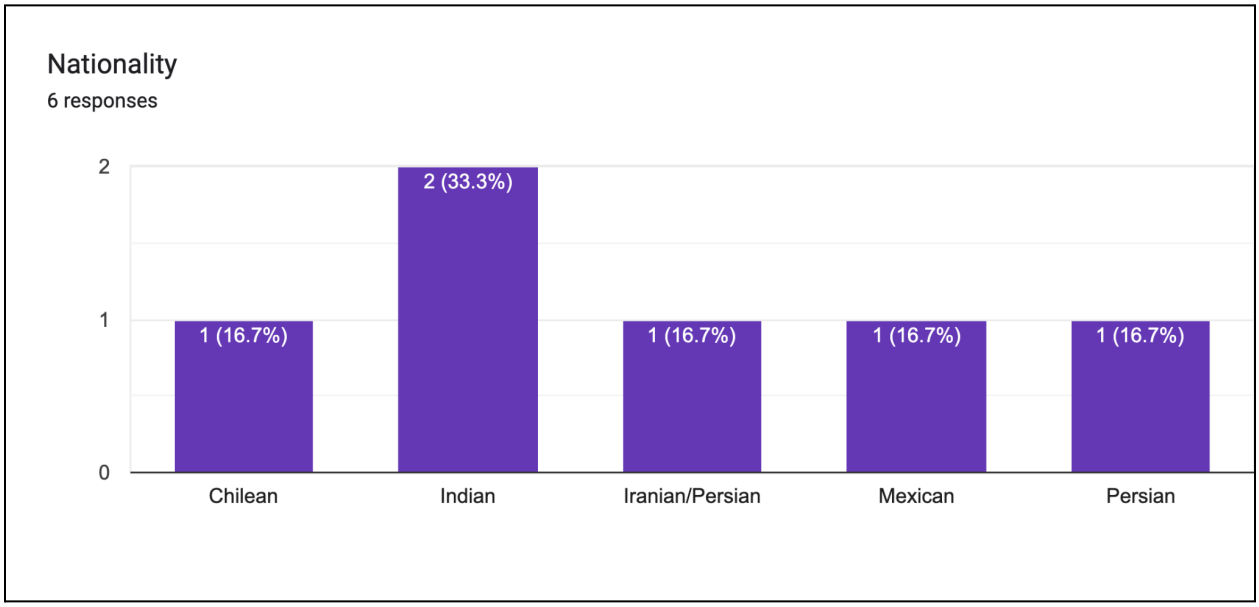
A copy of this information and consent form has been given to you to keep for your records and reference

Ethics ID: Pro00134376
Version: October 17, 2023

Page 4

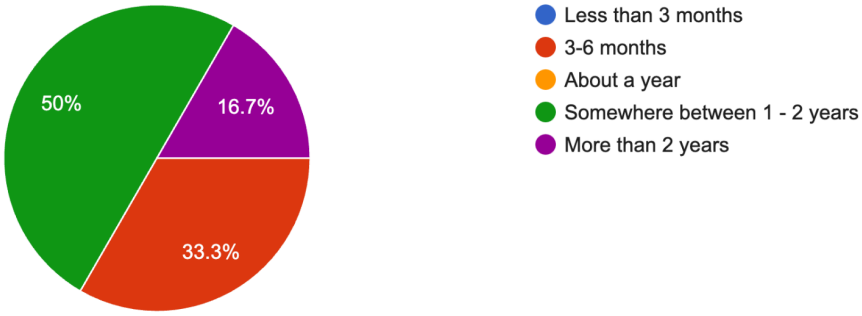
7.2.2 Survey Response Summary





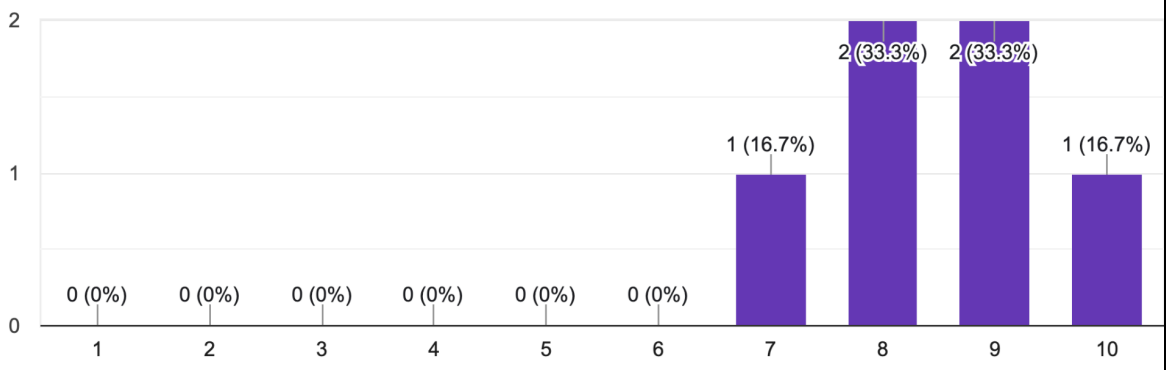
How long have you been a student at the University of Alberta?

6 responses



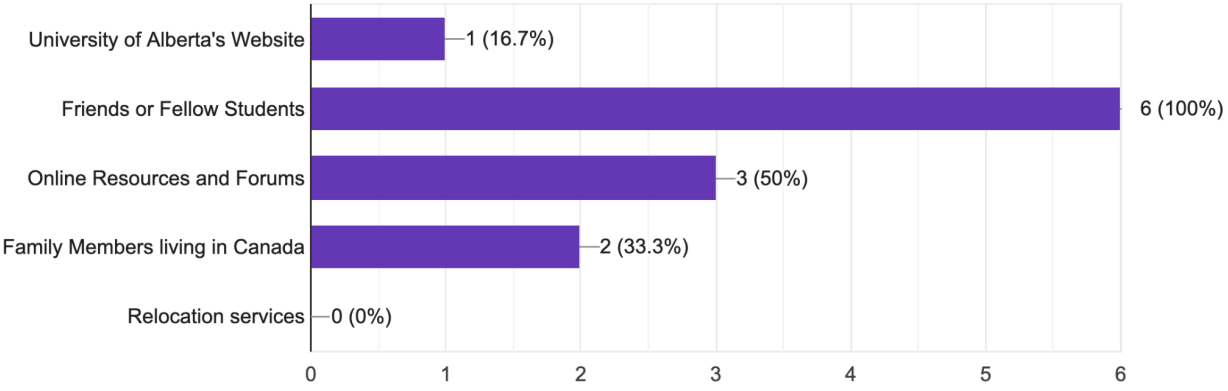
Are you familiar with the steps involved in obtaining necessary documents like a Social Insurance Number (SIN), ID card, a driver's license in Canada?

6 responses



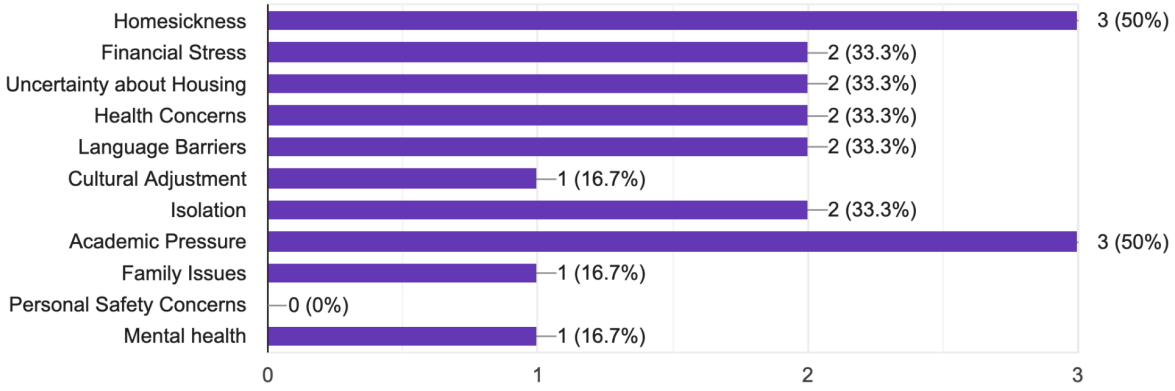
After moving to Edmonton, what was your main source of information to understand important processes like finding a house or getting a health card/SIN?

6 responses



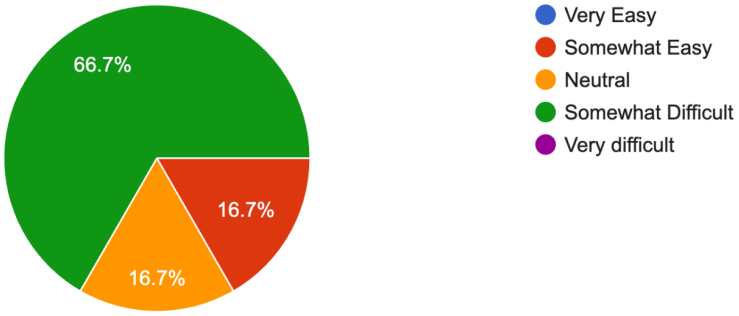
Whenever you have felt unprepared for your academic studies, please select all the reasons that may have affected it.

6 responses



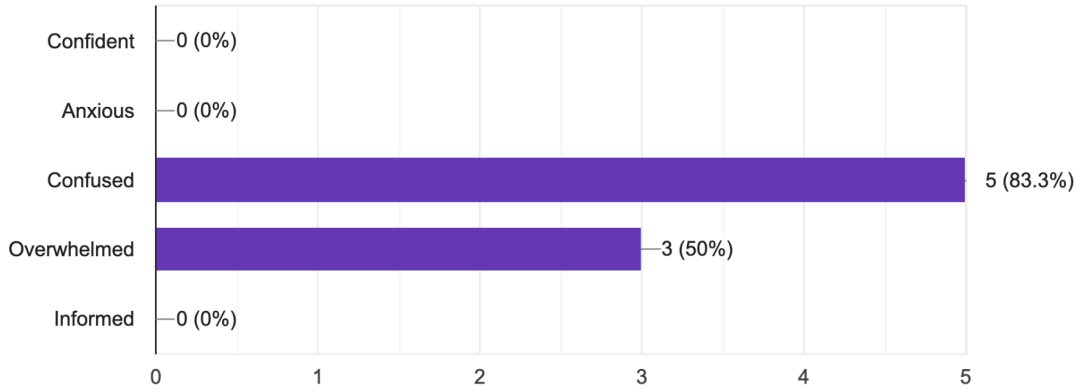
Were you able to easily locate the necessary information regarding the resources on the University of Alberta website?

6 responses



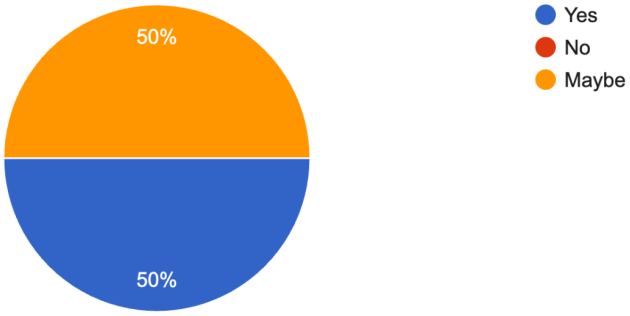
How do you typically feel while interacting with the University of Alberta's website?

6 responses



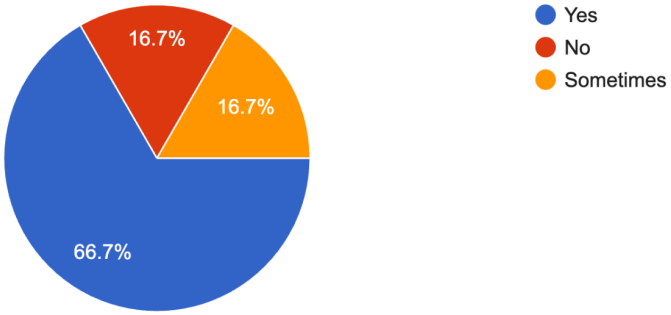
Have you ever missed out on the chance to use a university resource because you had trouble finding it?

6 responses



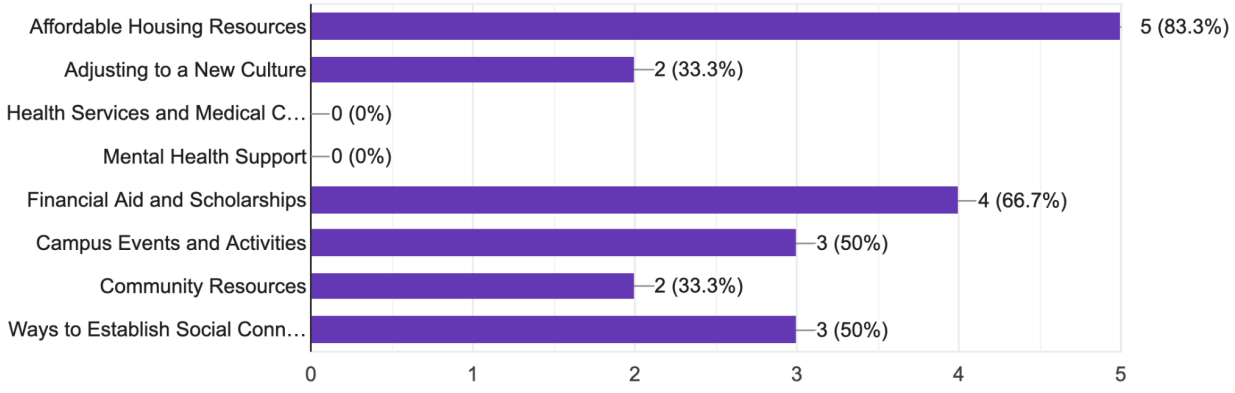
Have you ever encountered difficulties locating specific details about a support resource on the university's website, such as how to approach it, availability hours or eligibility criteria, etc?

6 responses



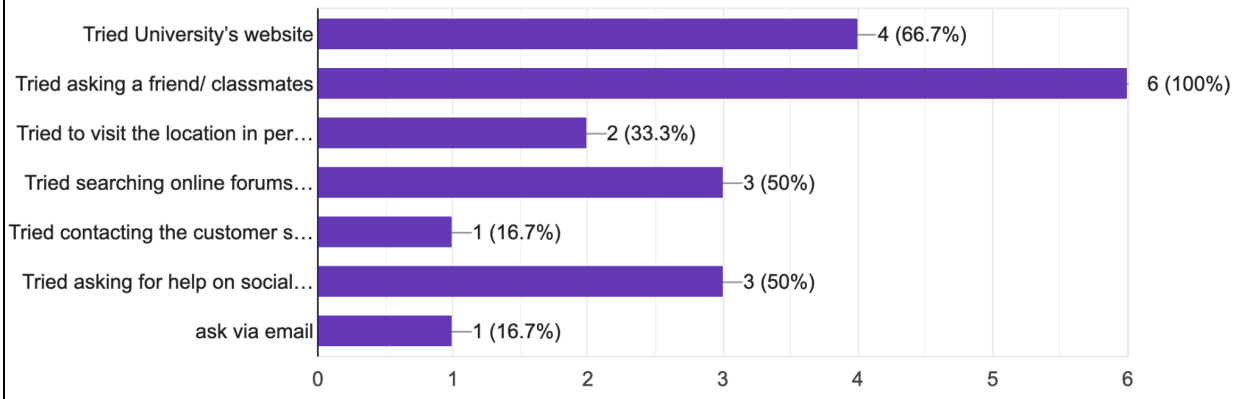
Are there any specific areas of information that you found particularly difficult to access or locate on the website? Select all that apply.

6 responses



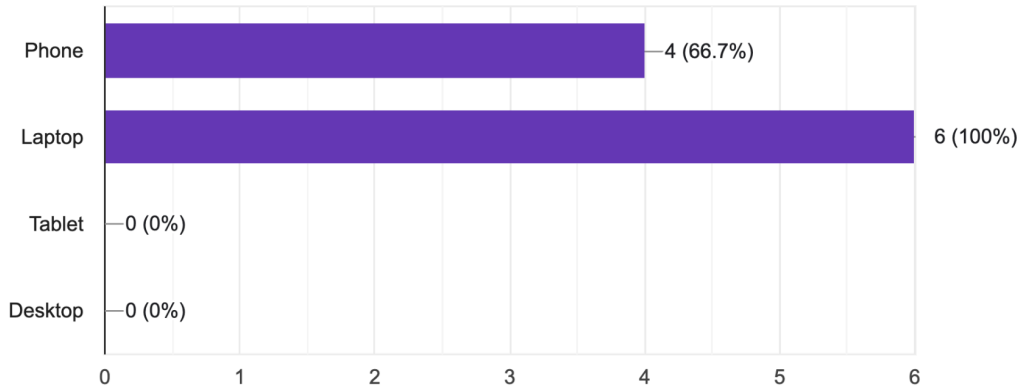
Could you please tell me what steps you have taken so far to get more information about the areas you mentioned in the previous question?

6 responses



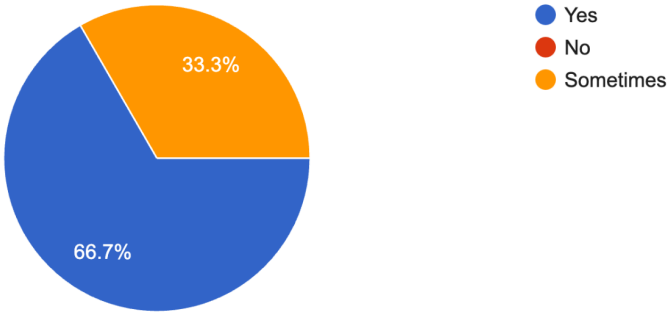
When it comes to browsing such information, what do you prefer using:

6 responses



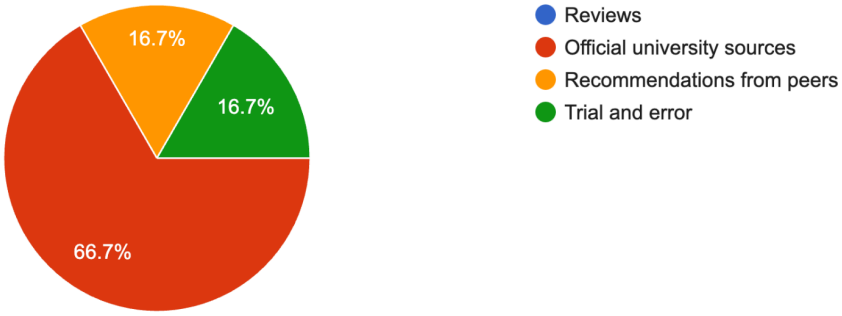
Do you think it is necessary to verify the reliability and credibility of the sources before utilizing them?

6 responses



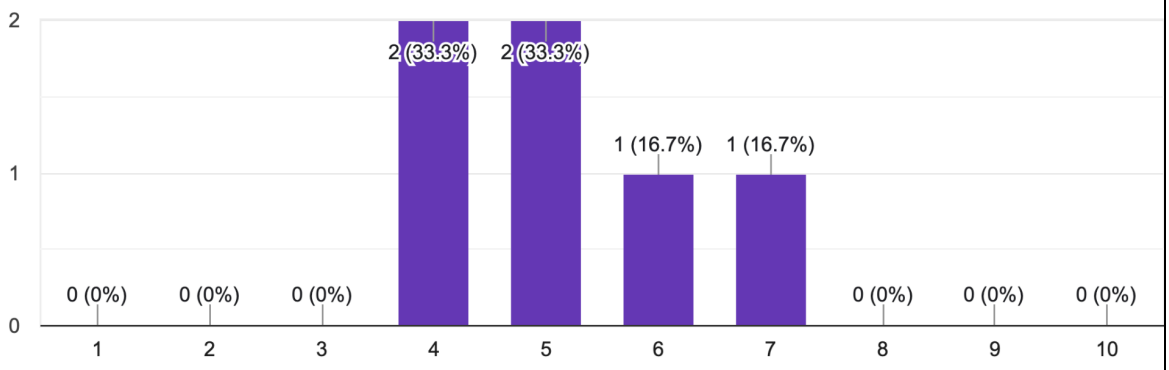
How do you usually assess the reliability and credibility of online support resources you find?

6 responses



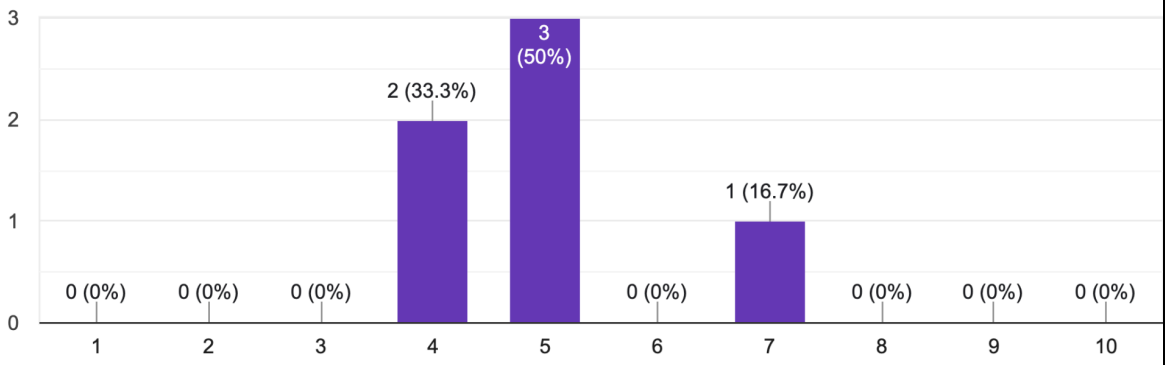
On a scale of 1 to 10, how would you rate the ease of navigating the university's website to find information about support resources?

6 responses

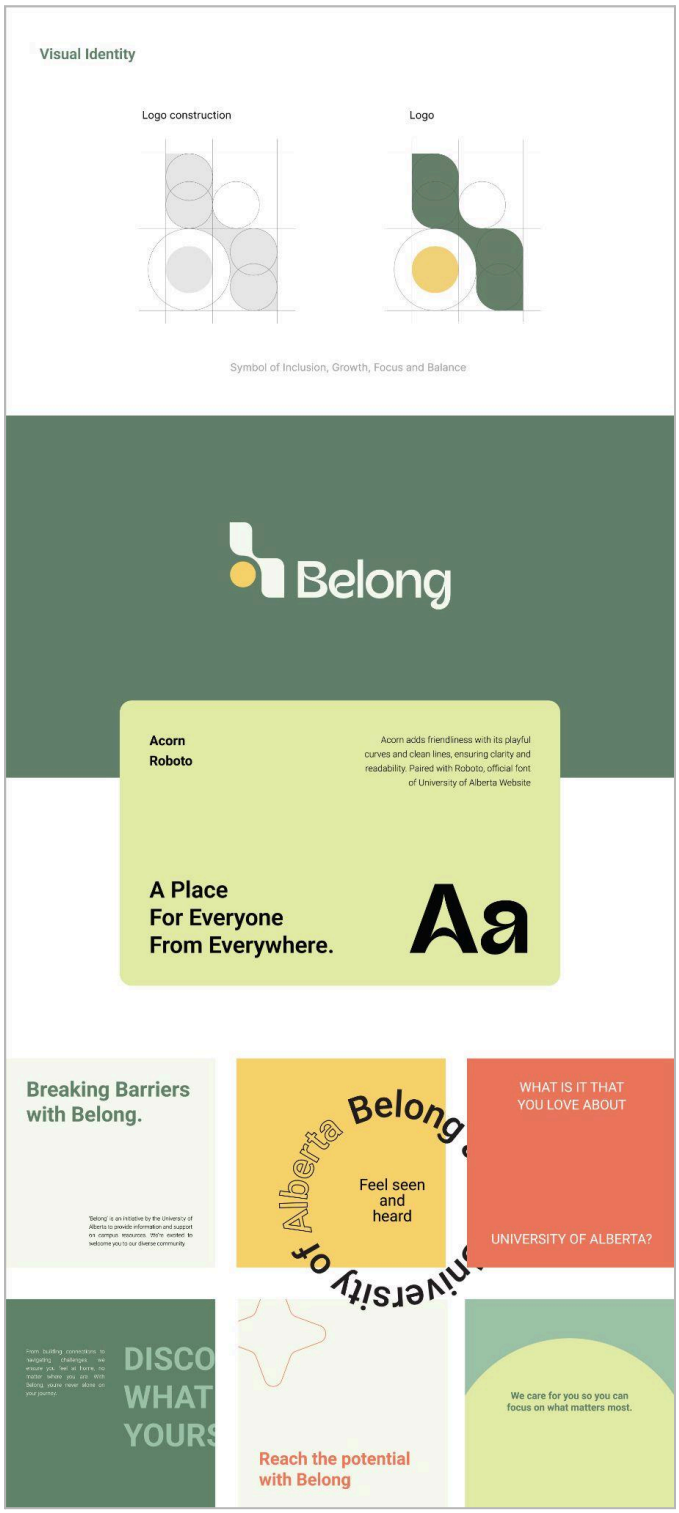


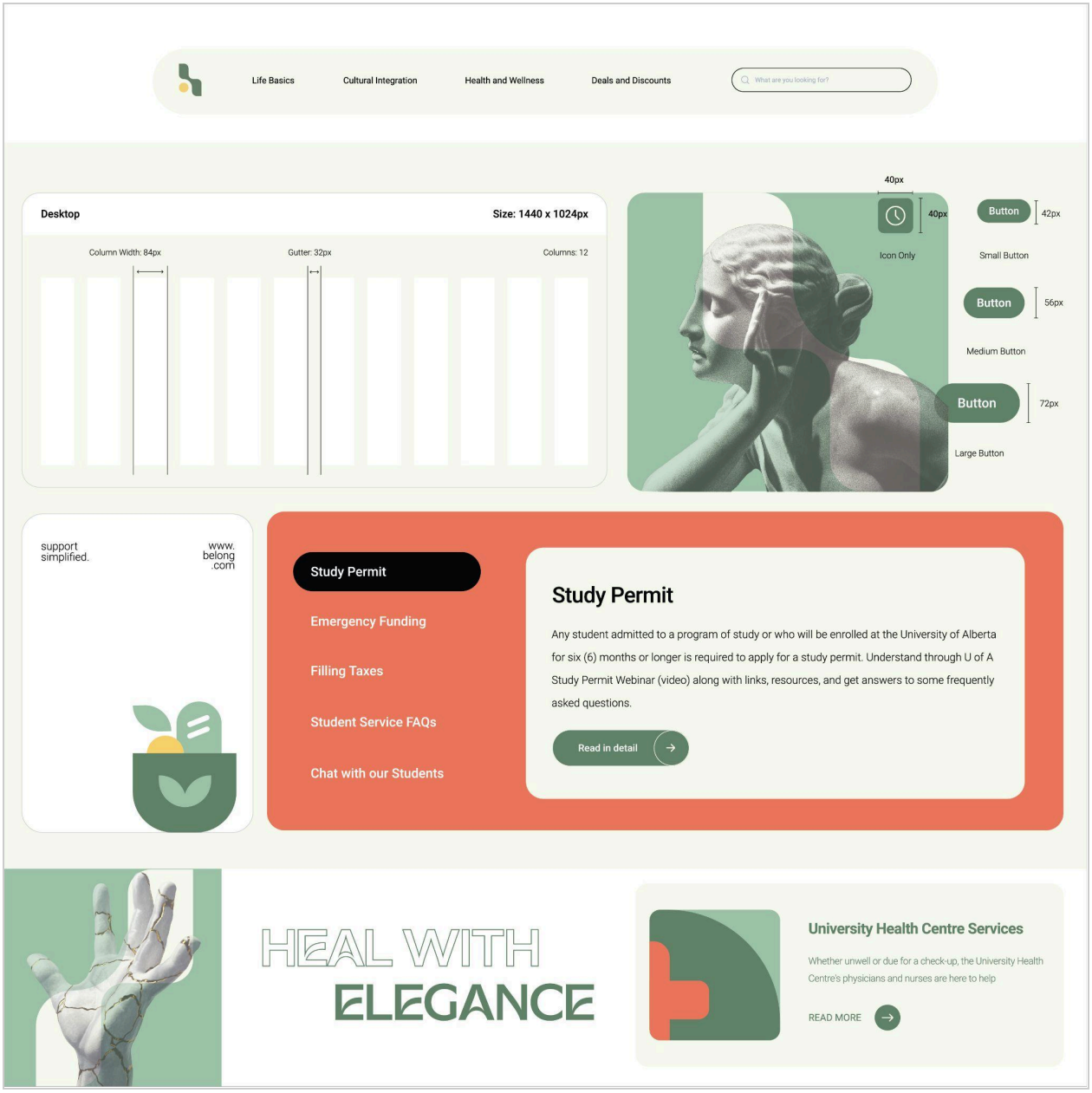
How satisfied are you with the overall online information and accessibility of support resources available to international students at the University of Alberta?

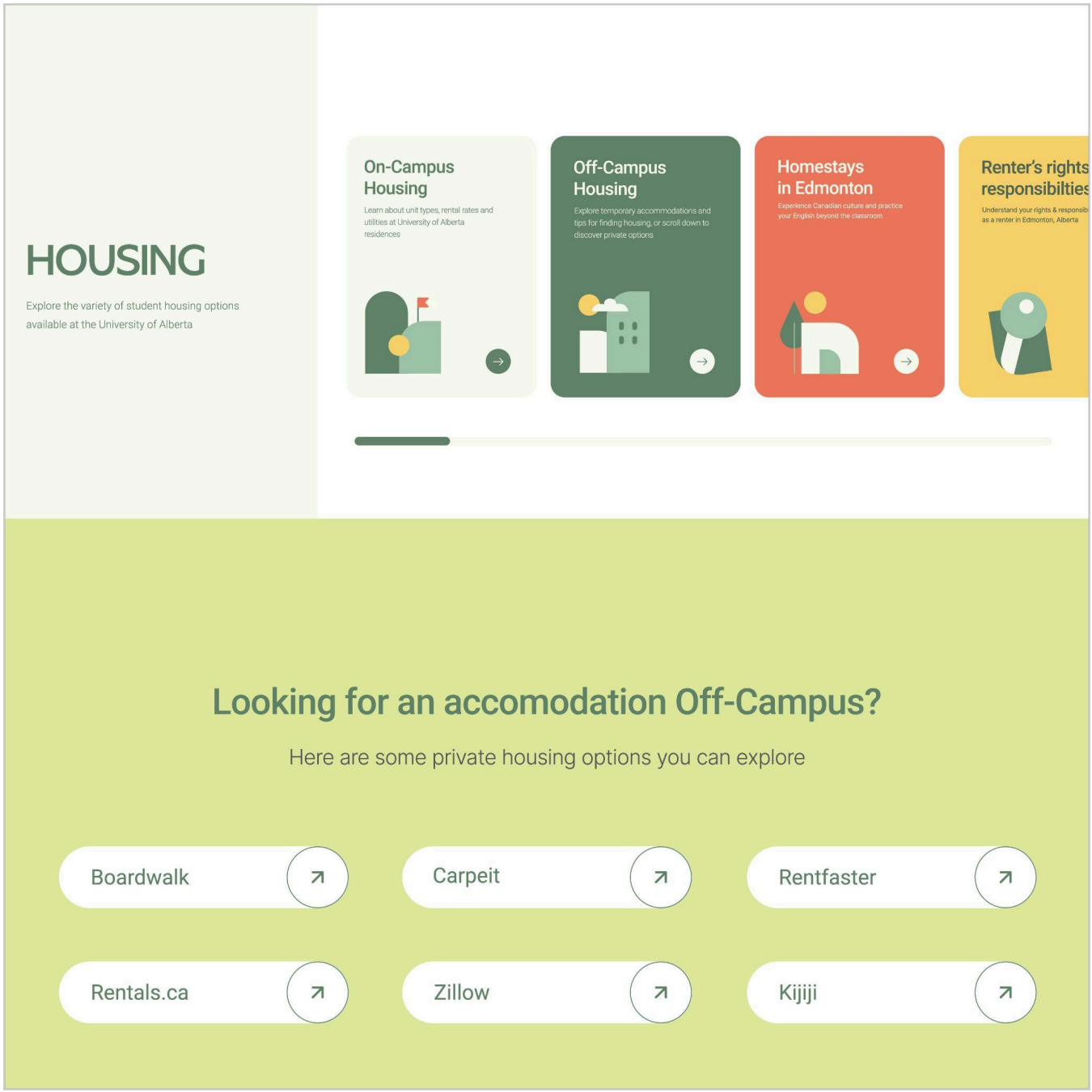
6 responses

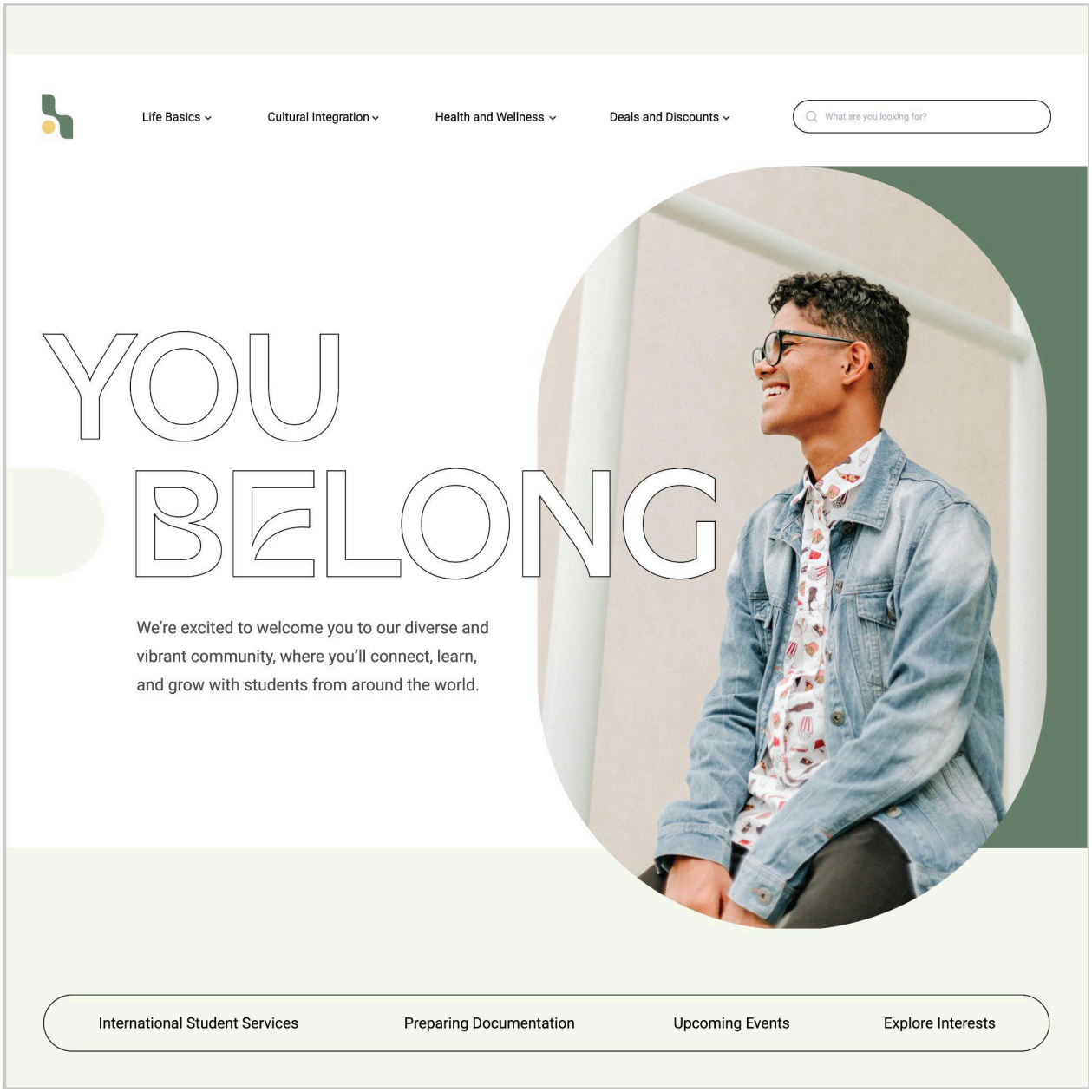


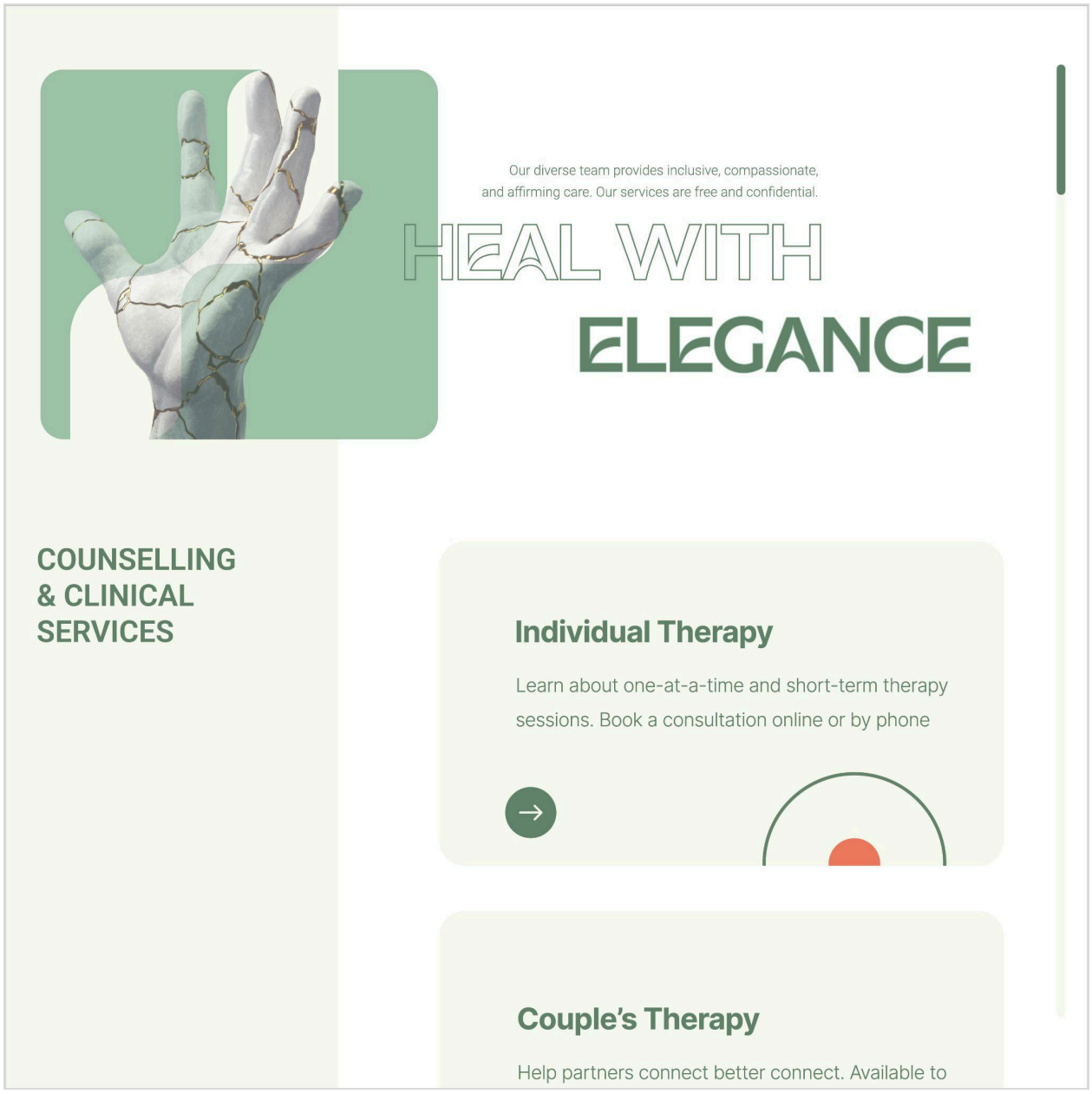
7.3 Exhibition Document




Life Basics
Cultural Integration
Health and Wellness
Deals and Discounts
What are you looking for?
Desktop
Size: 1440 x 1024px
Column Width: 84px
Gutter: 32px
Columns: 12
40px
40px
Icon Only
Button
42px
Small Button
Button
56px
Medium Button
Button
72px
Large Button
support simplified.
www.belong.com
Study Permit
Emergency Funding
Filling Taxes
Student Service FAQs
Chat with our Students
Study Permit
Any student admitted to a program of study or who will be enrolled at the University of Alberta for six (6) months or longer is required to apply for a study permit. Understand through U of A Study Permit Webinar (video) along with links, resources, and get answers to some frequently asked questions.
Read in detail
HEAL WITH ELEGANCE
University Health Centre Services
Whether unwell or due for a check-up, the University Health Centre's physicians and nurses are here to help
READ MORE

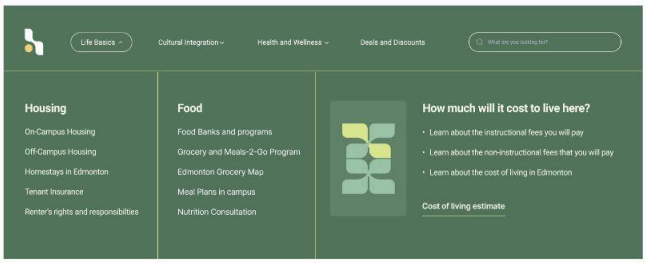

HOUSING
Explore the variety of student housing options available at the University of Alberta
On-Campus Housing
Learn about unit types, rental rates and utilities at University of Alberta residences
Off-Campus Housing
Explore temporary accommodations and tips for finding housing, or scroll down to discover private options
Homestays in Edmonton
Experience Canadian culture and practice your English beyond the classroom
Renter's rights responsibilties
Understand your rights & responsib as a renter in Edmonton, Alberta
Looking for an accomodation Off-Campus?
Here are some private housing options you can explore
Boardwalk
Carpeit
Rentfaster
Rentals.ca
Zillow
Kijiji


Life Basics
Cultural Integration
Health and Wellness
Deals and Discounts
What are you looking for?
YOU BELONG
We're excited to welcome you to our diverse and vibrant community, where you'll connect, learn, and grow with students from around the world.
International Student Services
Preparing Documentation
Upcoming Events
Explore Interests

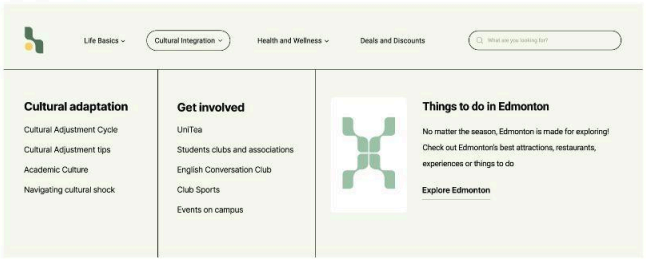

Our diverse team provides inclusive, compassionate, and affirming care. Our services are free and confidential.
HEAL WITH
ELEGANCE
COUNSELLING & CLINICAL SERVICES
Individual Therapy
Learn about one-at-a-time and short-term therapy sessions. Book a consultation online or by phone
Couple's Therapy
Help partners connect better connect. Available to

Main Menu Navigations

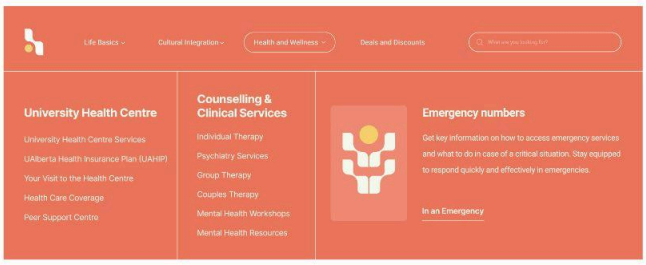
Life Basics



Cultural Integration

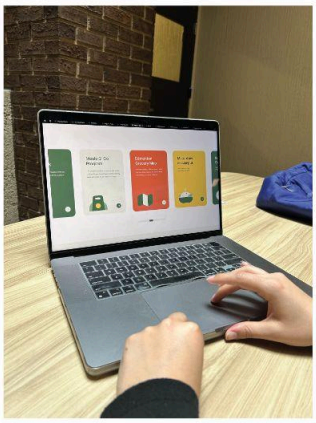


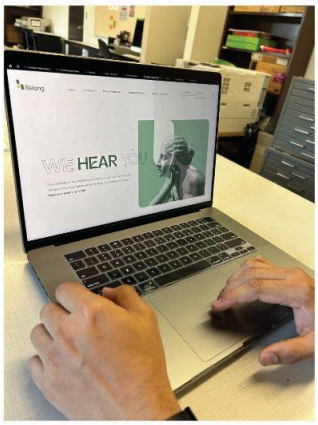
Health and Wellness

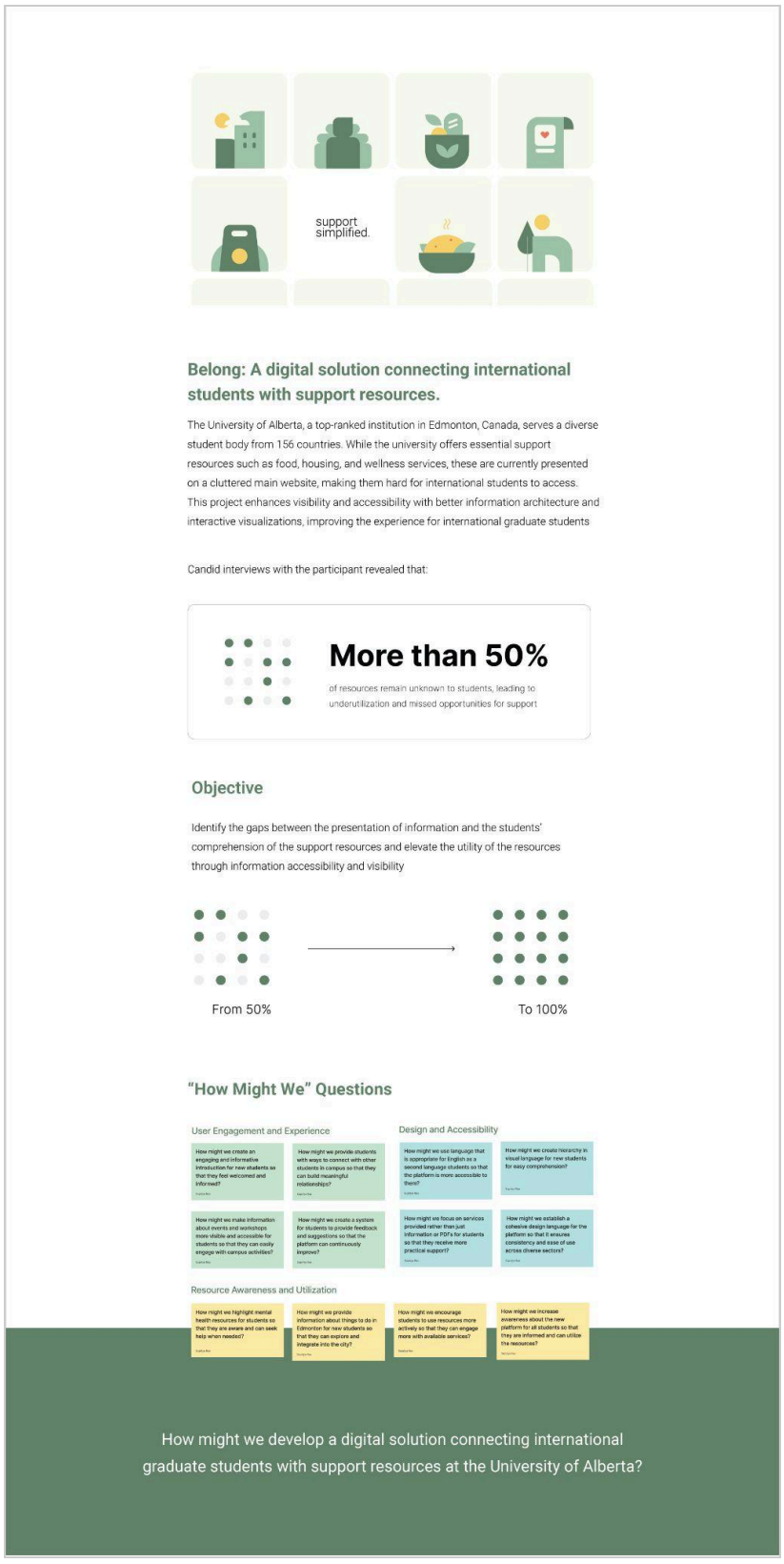


Usability Testing

The usability testing for "Belong" revealed overlooked issues by having real international students, instead of developers, complete usability tasks. The results were analyzed to pinpoint problems and areas for improvement, ensuring the platform meets user needs.

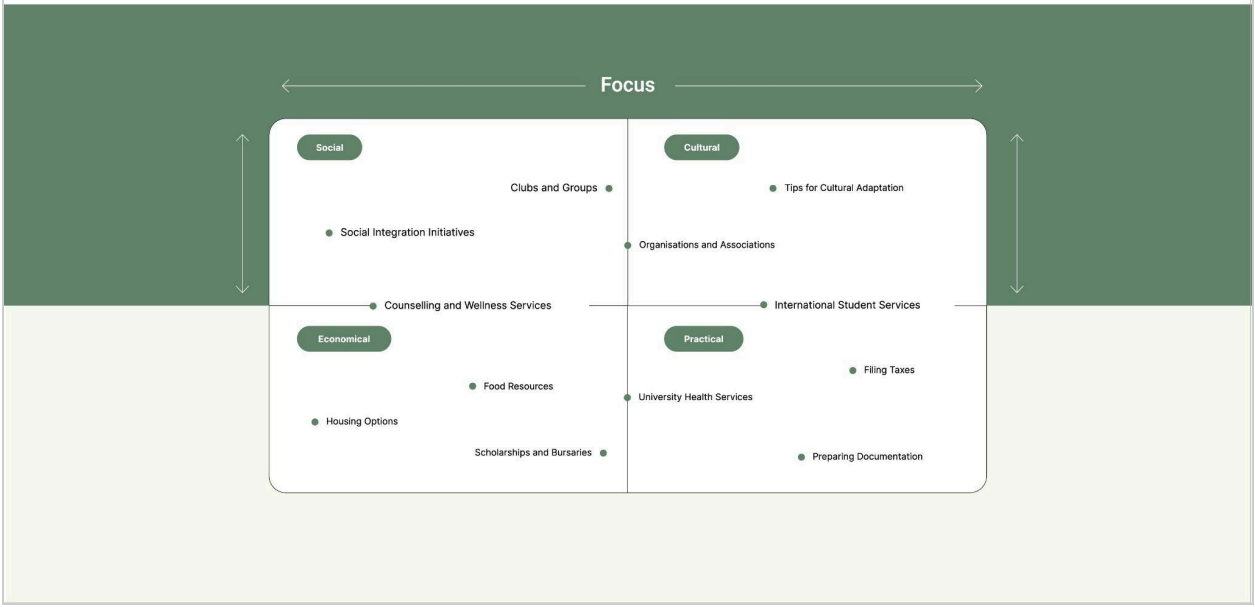


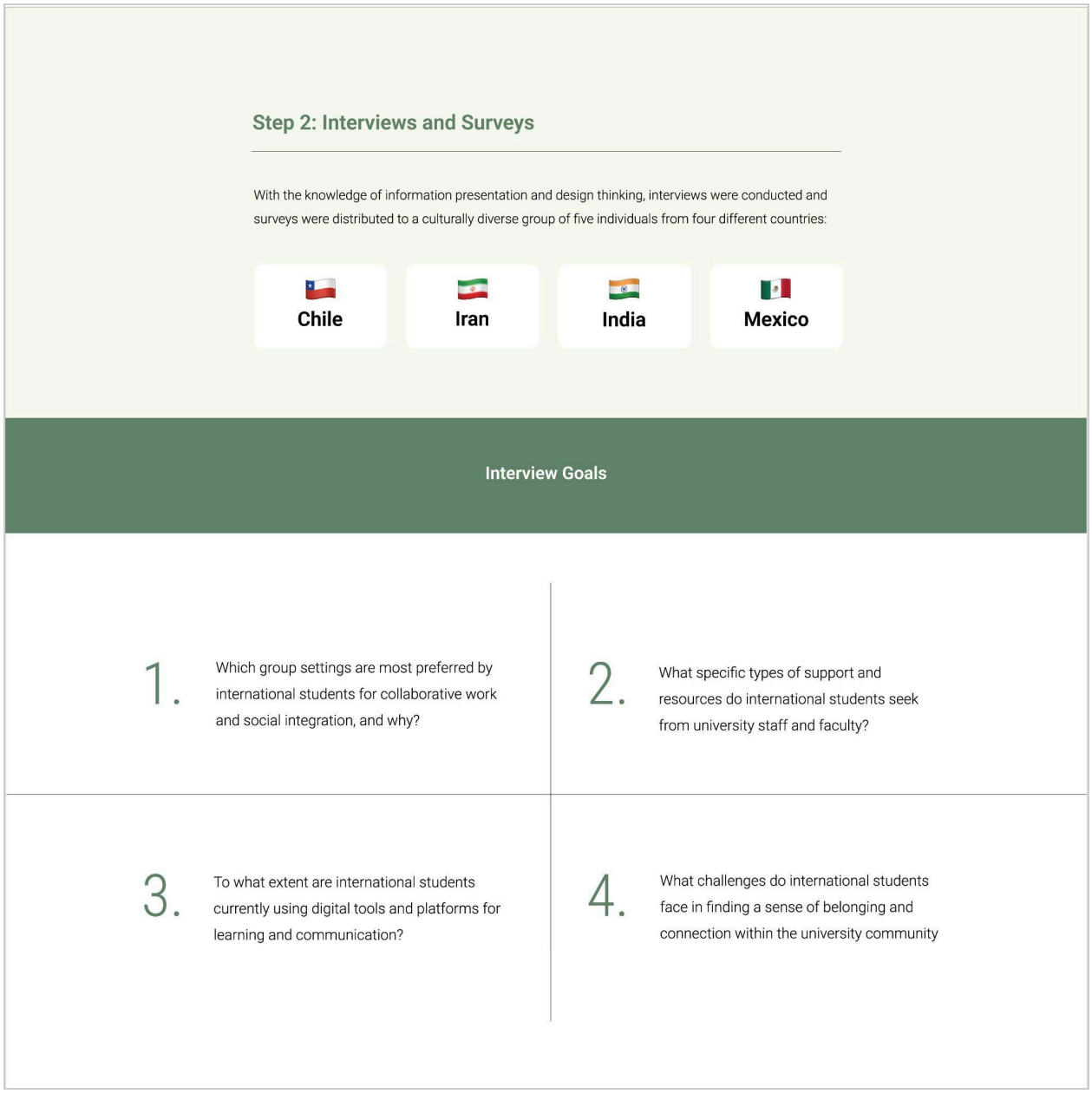


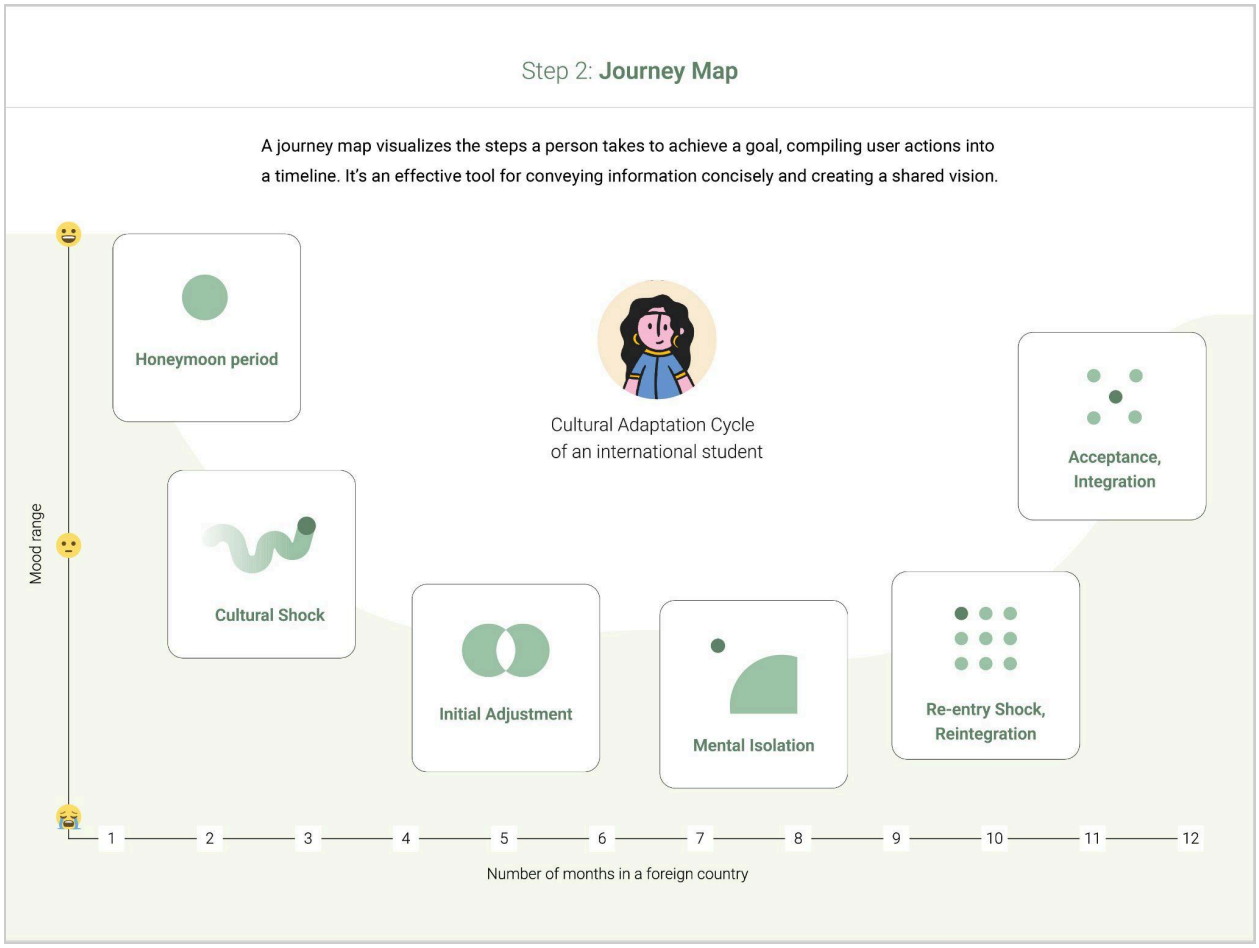

support
simplified.
Belong: A digital solution connecting international students with support resources.
The University of Alberta, a top-ranked institution in Edmonton, Canada, serves a diverse student body from 156 countries. While the university offers essential support resources such as food, housing, and wellness services, these are currently presented on a cluttered main website, making them hard for international students to access. This project enhances visibility and accessibility with better information architecture and interactive visualizations, improving the experience for international graduate students
Candid interviews with the participant revealed that:
More than 50%
of resources remain unknown to students, leading to underutilization and missed opportunities for support
Objective
Identify the gaps between the presentation of information and the students' comprehension of the support resources and elevate the utility of the resources through information accessibility and visibility
From 50%
To 100%
"How Might We" Questions
User Engagement and Experience
How might we create an engaging and informative introduction for new students so that they feel welcomed and informed?
How might we provide students with ways to connect with other students in campus so that they can build meaningful relationships?
How might we make information about events and workshops more visible and accessible for students so that they can easily engage with campus activities?
How might we create a system for students to provide feedback and suggestions so that the platform can continuously improve?
Design and Accessibility
How might we use language that is appropriate for English as a second language students so that the platform is more accessible to them?
How might we create hierarchy in visual language for new students for easy comprehension?
How might we focus on services provided rather than just information or PDFs for students so that they receive more practical support?
How might we establish a cohesive design language for the platform so that it ensures consistency and ease of use across diverse sectors?
Resource Awareness and Utilization
How might we highlight mental health resources for students so that they are aware and can seek help when needed?
How might we provide information about things to do in Edmonton for new students so that they can explore and integrate into the city?
How might we encourage students to use resources more actively so that they can engage more with available services?
How might we increase awareness about the new platform for all students so that they are informed and can utilize the resources?
How might we develop a digital solution connecting international graduate students with support resources at the University of Alberta?

Step 1: Website Audit

A comprehensive website audit was conducted to assess the structure and information arrangement. Resources were categorized for better organization and understanding, followed by a review of the website pages to evaluate the available information and its organization.

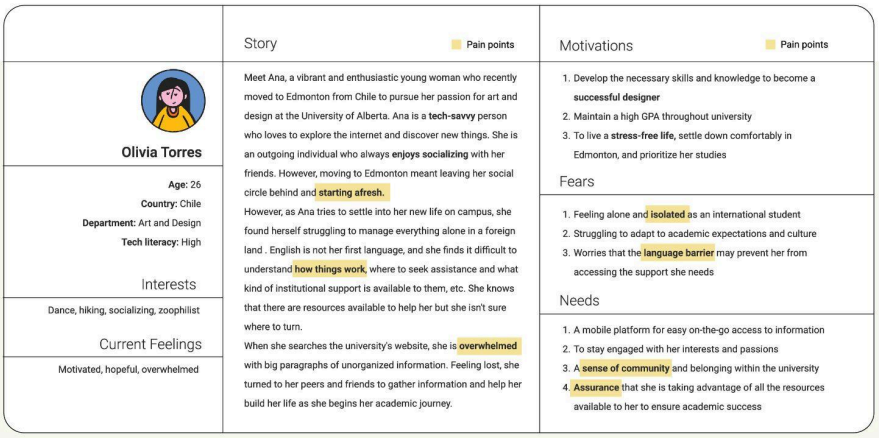



Step 2: Interviews and Surveys
With the knowledge of information presentation and design thinking, interviews were conducted and surveys were distributed to a culturally diverse group of five individuals from four different countries:
Chile
Iran
India
Mexico
Interview Goals
1. Which group settings are most preferred by international students for collaborative work and social integration, and why?
2. What specific types of support and resources do international students seek from university staff and faculty?
3. To what extent are international students currently using digital tools and platforms for learning and communication?
4. What challenges do international students face in finding a sense of belonging and connection within the university community


Step 2: Journey Map
A journey map visualizes the steps a person takes to achieve a goal, compiling user actions into a timeline. It's an effective tool for conveying information concisely and creating a shared vision.
Honeymoon period
Cultural Adaptation Cycle of an international student
Acceptance, Integration
Cultural Shock
Initial Adjustment
Mental Isolation
Re-entry Shock, Reintegration
Mood range
1
2
3
4
5
6
7
8
9
10
11
12
Number of months in a foreign country

Step 1: **User Personas**

A persona is a fictional profile representing a key user group, based on real data. It helps designers empathize with users and prioritize their needs in the design process. I created three personas—Olivia (26, Chile), Majid (29, Iran), and Sara (23, India)—and two are presented below.



Olivia Torres

Age: 26
Country: Chile
Department: Art and Design
Tech literacy: High

Interests

Dance, hiking, socializing, zoophilist

Current Feelings

Motivated, hopeful, overwhelmed

Story — Pain points

Meet Ana, a vibrant and enthusiastic young woman who recently moved to Edmonton from Chile to pursue her passion for art and design at the University of Alberta. Ana is a **tech-savvy** person who loves to explore the internet and discover new things. She is an outgoing individual who always **enjoys socializing** with her friends. However, moving to Edmonton meant leaving her social circle behind and **starting afresh.**

However, as Ana tries to settle into her new life on campus, she found herself struggling to manage everything alone in a foreign land . English is not her first language, and she finds it difficult to understand **how things work**, where to seek assistance and what kind of institutional support is available to them, etc. She knows that there are resources available to help her but she isn't sure where to turn.

When she searches the university's website, she is **overwhelmed** with big paragraphs of unorganized information. Feeling lost, she turned to her peers and friends to gather information and help her build her life as she begins her academic journey.

Motivations — Pain points

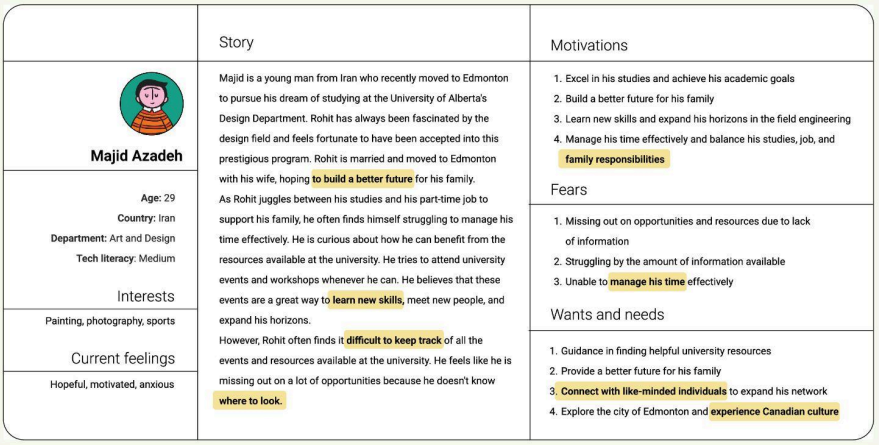
1. Develop the necessary skills and knowledge to become a **successful designer**
2. Maintain a high GPA throughout university
3. To live a **stress-free life,** settle down comfortably in Edmonton, and prioritize her studies

Fears

1. Feeling alone and **isolated** as an international student
2. Struggling to adapt to academic expectations and culture
3. Worries that the **language barrier** may prevent her from accessing the support she needs

Needs

1. A mobile platform for easy on-the-go access to information
2. To stay engaged with her interests and passions
3. A **sense of community** and belonging within the university
4. **Assurance** that she is taking advantage of all the resources available to her to ensure academic success



Majid Azadeh

Age: 29
Country: Iran
Department: Art and Design
Tech literacy: Medium

Interests

Painting, photography, sports

Current feelings

Hopeful, motivated, anxious

Story

Majid is a young man from Iran who recently moved to Edmonton to pursue his dream of studying at the University of Alberta's Design Department. Rohit has always been fascinated by the design field and feels fortunate to have been accepted into this prestigious program. Rohit is married and moved to Edmonton with his wife, hoping **to build a better future** for his family.

As Rohit juggles between his studies and his part-time job to support his family, he often finds himself struggling to manage his time effectively. He is curious about how he can benefit from the resources available at the university. He tries to attend university events and workshops whenever he can. He believes that these events are a great way to **learn new skills,** meet new people, and expand his horizons.

However, Rohit often finds it **difficult to keep track** of all the events and resources available at the university. He feels like he is missing out on a lot of opportunities because he doesn't know **where to look.**

Motivations

1. Excel in his studies and achieve his academic goals
2. Build a better future for his family
3. Learn new skills and expand his horizons in the field engineering
4. Manage his time effectively and balance his studies, job, and **family responsibilities**

Fears

1. Missing out on opportunities and resources due to lack of information
2. Struggling by the amount of information available
3. Unable to **manage his time** effectively

Wants and needs

1. Guidance in finding helpful university resources
2. Provide a better future for his family
3. **Connect with like-minded individuals** to expand his network
4. Explore the city of Edmonton and **experience Canadian culture**