



EVALUATING THE STATE OF ACCESSIBILITY IN ICELAND

WPI A'22

ICELAND

IQP

ADINA PALAYOOR
ARNAV SACHETI
JACK TERVAY
MIGUEL DURAN

ADVISED BY

DR. SARAH STANLICK
JEFFREY SOLOMON

SPONSORED BY

DR. AARON SAKULICH

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EXECUTIVE SUMMARY

Accessibility is a concept that is becoming an increasingly important aspect of any functioning and equitable society. The idea that everyone, regardless of their ability, should be afforded the same opportunity to interact with and use any information or services that are provided to them is paramount in creating a welcoming and fair product or service. Accessibility is a broad topic that includes numerous unique disabilities, all of which require special considerations and accommodations to appropriately address. To promote the adoption of accessibility accommodations in society, some countries have passed laws and created infrastructures around supporting those with disabilities; the United States, for example, has the Americans with Disabilities Act (ADA) - a law that fundamentally changed the way that the United States approached accessibility and how people with disabilities were treated. In this regard, the United States is, relative to the rest of the world, fairly progressive - as a result, those with disabilities must ensure that they understand what can and cannot be accommodated when traveling to another country. The same is true for students looking to travel abroad for WPI's IQP program to work on a real-world problem in a hands-on, group setting. Despite this need for students to be thoroughly informed before departing abroad, most project sites contain insufficient information regarding the state of accessibility and availability of accommodations. With this, we aimed to address three research questions:

1. What are the barriers, challenges, and opportunities for IQP students with disabilities trying to fully experience Iceland?
2. What is the most effective way to inform potential IQP students about project center accessibility?
3. What impact could improving information concerning accessibility have on future IQPs?

With these in mind, we set out to form a data-driven conclusion on how we can best support students with accessibility concerns. To do so, we met with various subject-matter experts and students, as well as conducted a survey sent to past and present IQP students. The information we gathered from these research methods was invaluable, as we were able to evaluate common themes among our dataset - we found that 28% of students felt that there was a lack of information conveyed in eProjects. To address these issues, we developed a set of recommendations: supply project sites with a guiding checklist to assess site accessibility, update eProjects to contain more accessibility information, and our final evaluation of Iceland's accessibility.

BACKGROUND



Figure 1. Image of ramp at a Lutheran church taken by Miguel Duran

What Accessibility Means

Accessibility is the idea that all people, regardless of their ability, can interact with and use any information or services provided to them. If something were to be defined as accessible, it would mean that “a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally effective and equally integrated manner, with substantially equivalent ease of use” (U.S. Department of Education, 2020, para. 3). When assessing the accessibility of something, it is important to consider the many different types of disabilities or impairments - each type of disability is unique and thus requires special approaches to address them in an effective and impactful way.



Figure 2. Image representations of disabilities we talk about



Figure 3. Team Photo taken on the coast of Iceland

Physical

When one thinks of a disability, it is more than likely that physical disabilities are the first thing that comes to mind. This is largely due to the fact that these disabilities - along with their symptoms and assistive aids (e.g. wheelchairs and crutches) - are typically the most observable. Physical disabilities inhibit the physical function of one or more limbs of a person and can be caused by an accident, injury, illness, or can simply be hereditary (Konczal, 2022, para. 1). Depending on the application and environment, physical disabilities can be accommodated in a variety of meaningful ways. When considering the accessibility of a building, for example, it is important to take a proactive approach and design the building to avoid inhibitive features completely, such as narrow aisles that obstruct wheelchair access, heavy doors, and workstation surfaces that are too high to be accessible for all (Chief Information Officer: Accommodations for physical disabilities).

Sensory

Sensory disabilities are neurological disorders that affect the way that the brain processes sensory information such as hearing, taste, sight and touch. The most widely known sensory disabilities are auditory loss of hearing and visual blindness, both of which raise unique challenges to everyday activities. For both of these impairments, there is a range of functional hearing or vision loss - someone that is classified as “legally blind”, for instance, does not necessarily mean that they have no functional vision at all, and the same is true for individuals that are hard of hearing (Oswego State University of New York, Sensory disabilities, para. 7). It is important for those who have sensory disabilities to be accommodated appropriately so that they have the same opportunity to interact with information as those without sensory disabilities do. A deaf person, for example, will often communicate through a sign language interpreter to assist in the receiving, and giving, of information.

Dietary

While not commonly considered or referred to as a disability by many, dietary restrictions - such as food allergies - are typically considered disabilities under the ADA (AAAAI, 2018), as it directly limits a person's life activities. Dietary restrictions encompass more than just food allergies, though - religious restrictions such as kosher, personal dietary patterns including veganism and vegetarianism, as well as digestive disorders and intolerances are all dietary restrictions that deeply affect the way that people live their daily lives. Despite it being estimated that between 1.1% and 10.8% of the global population has a food allergy (Food allergies across the globe, 2022), dietary restrictions can often get overlooked by many places around the world. To properly accommodate those with dietary restrictions, a proactive approach must be taken; in restaurants, for example, the employees should make it a top priority to inquire about any dietary restrictions that the guests might have. Another course of action that can be taken is to ensure that food package labeling is clearly and concisely marked to identify allergens.

Mental

Emotional disabilities and disturbances are hugely impactful parts of peoples' lives; it is frequently the case that these emotional disturbances cascade into worsening conditions, such as depression; almost one-half of those suffering from depression also suffer from an anxiety disorder (ADAA, Facts & Statistics: Anxiety and Depression Association of America). This topic has become increasingly paramount in recent years, and numerous advancements have been made to tackle the various issues that those with emotional disabilities face every day. Historically-speaking, mental and emotional health has always been put to the side, facing a harsh stigma and shaming those who struggle with such harmful issues (Jeffrey Borenstein, M.D., Stigma, prejudice and discrimination against people with mental illness, 2020). Over the past decade, however, societies' understanding of the importance of mental health has evolved and is beginning to be normalized to the extent that physical disabilities are. Various methods to address mental health issues are used throughout the world with varying degrees of success. One of the most successfully proven ways to confront the harm that emotional disabilities can bring people is to raise awareness, which is something that may not seem all too beneficial, but it is truly instrumental - it eliminates the stigma around common disorders and can also lead to societal and governmental improvements for those with emotional disabilities (The importance of Mental Health Awareness Month, 2022). Another avenue that many countries explore is through infrastructure that allows for (emotional) support animals. Emotional support animals are proven to have the ability to dramatically increase one's overall quality of life, and have a wide range of crucial benefits (ESA Registration of America, Facts about emotional support animals).

Intellectual

An intellectual disability, or cognitive disability, refers to certain limitations in a person's mental functioning, resulting in communication, self-help, and other social skills being affected. It usually appears before birth or from a young age and it is often caused by injury, disease, genetic condition, or a brain abnormality (Michigan Alliance for Families, Cognitive impairment, para. 1). The most common types of intellectual disability are mental retardation, attention-deficit hyperactivity disorder (ADHD), dyslexia, aphasia, Alzheimer's disease, brain injury, language delay, and learning disabilities. With as much as 3% of the population having some form of intellectual disability (Office of Special Education Programs, Cognitive disability resources), a large emphasis must be placed on ensuring that children in school with these disabilities have access to an education that works for them. Children with intellectual disabilities can struggle with learning topics in the same way and at the same pace that a typical child might, which is why it is important to adopt a unique teaching style for them. There are a great deal of teaching methods that can accomplish just that - this can include conducting shorter teaching sessions, presenting information at a reduced pace, and maintaining flexibility to accommodate students' preferences (Life Improvement Following Traumatic Brain Injury (LIFT), Accommodations for cognitive impairments).

Why Accessibility Matters

At face value it may appear that implementing accessibility measures into services or products helps only a small portion of the population and is therefore not always worth considering. This, however, is a common misperception of the impact that accessibility can truly have. In addition to it being the equitable and right thing to do, applying accessibility features to our everyday lives also makes for a better experience for everyone. It is not uncommon for a product or feature that was initially designed to increase accessibility for a specific type of disability to turn out to actually help those without disabilities, too. Perhaps the most famous example of this important concept is the typewriter - a device originally developed to enable blind people to communicate in written form, but a device that later became one of the most revolutionary inventions in history (Typewriters and assistive technology for blind and partially sighted people, 2021). Improving the accessibility of a product or service enables everyone, regardless of ability or circumstance, to have an increased sense of independence and autonomy in their lives, thereby improving overall quality of life.

Accessibility in the United States

Accessibility in the United States is something that, fortunately, has an established, and still growing, support system built around it. The backbone of this legislative infrastructure, the Americans with Disabilities Act (ADA), is a civil rights law that came into effect in 1990 to prohibit discrimination against individuals with disabilities - this spans across all areas of life, including jobs, schools, transportation, and public places. Akin to the purpose of the Civil Rights Act of 1964 (the law that ADA was modeled after), which forbids discrimination on the basis of race, color, religion, sex, or national origin, ADA aims to follow suit and be an equal opportunity law for those with disabilities (U.S. Department of Justice, beta.ada.gov homepage).

Since this legislation was passed, practically making accessibility the law, American society has grown substantially in regard to the stigma surrounding disabilities and how people with disabilities are treated overall. This gradual change in attitude and implementation of accessibility measures is exemplified by the changes that Title III (Public Accommodations) of ADA brought to American cities, towns, and municipalities: the introduction of important public accommodations for people with disabilities, including curb cuts, flat or ramped entrances to buildings, and designated disability parking spaces (Norlian, 2020).

In addition to these improvements to public accessibility, the education sector also saw a tremendous improvement when it came to appropriately handling accessibility and accommodation issues in schools. In combination with the Individuals with Disabilities Education Act (IDEA) - the legislation that states that children with disabilities have the right to be entitled to an educational program that is tailored to meet their specific needs (Norlian, 2020) - public and private schools around the country began to implement equitable teaching practices to ensure that everyone had equal opportunity to learn. This paved the path for Individualized Education Programs (IEPs) to be introduced, giving teachers, parents, and students the opportunity to work together in order to come up with an individualized educational plan to improve educational results for children with disabilities (U.S. Department of Education, 2019). The ADA and the IDEA act in conjunction to provide a fair, quality, and personalized educational plan for students with disabilities or impairments and has hence transformed how all schools operate - including WPI.

Accessibility at WPI

In addition to the improvements that the ADA brings to the education sector, WPI offers additional services to its student body - most notably, OAS. WPI's OAS aims to assist students with physical, learning, sensory, psychological, and developmental disabilities by coordinating accommodation services for them (WPI Office of Accessibility Services, 2022). Moreover, OAS provides comprehensive resources for a variety of purposes - including a checklist for running an accessible event on campus as well as a list of on-campus accommodations. Such accommodations include dining accommodations for those with allergies or other dietary restrictions, temporary accommodations for those who may be suffering from injury or other short-term impairments, housing accommodations, note-taking accommodations, and testing accommodations (WPI Accessibility Services, 2022).

The support services and systems that legislation like the ADA has created for U.S. citizens, and the additional services that WPI provides for its students, are crucial to an equitable society and a welcoming campus that everyone feels comfortable to participate in. Without these things that we have grown so accustomed to, people in need of accommodations would feel overwhelmed and be essentially unsupported in their endeavors - something that no person or student should ever have to face unprepared.

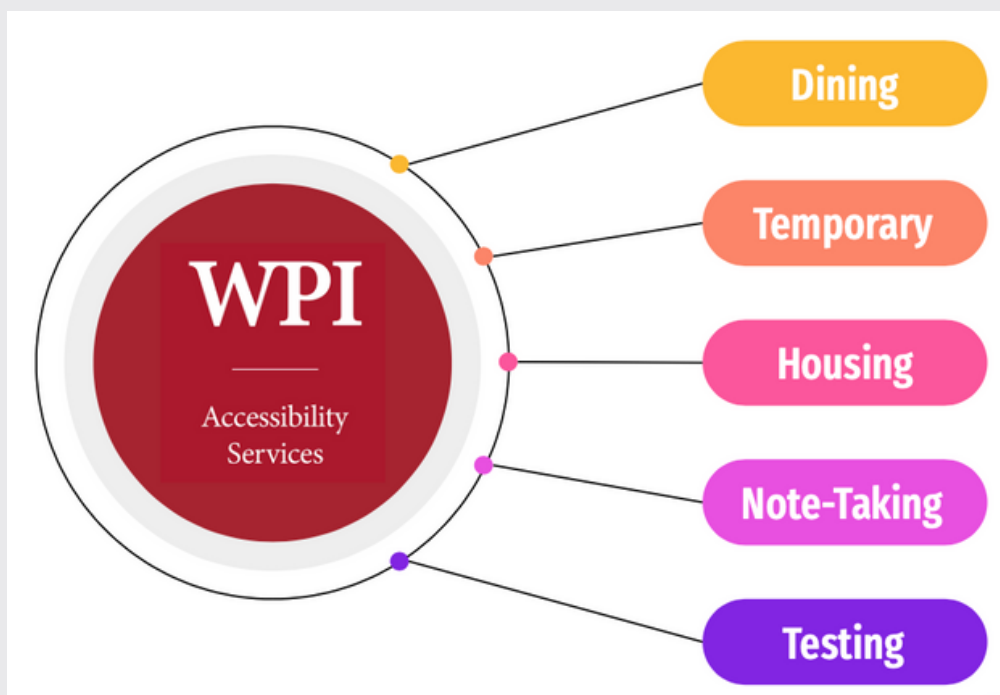


Figure 4. WPI Accessibility Services accommodations

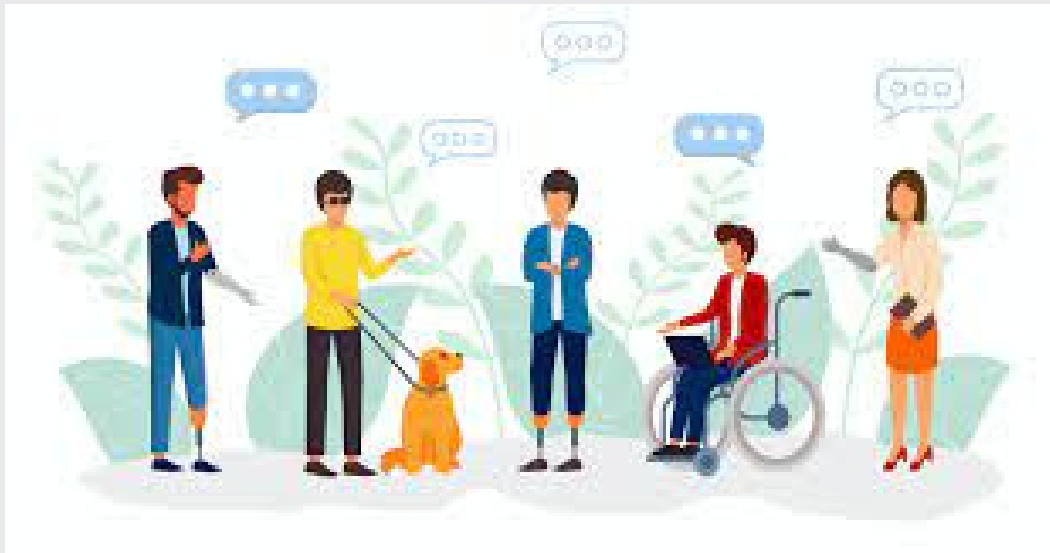


Figure 5. Graphic showing accessibility

Accessibility Differences Around the World

While the United States might have a fairly robust and inclusive infrastructure centered around supporting people with disabilities and accessibility, it is not always a given that other countries in the world do too. Whether it is on account of being a developing country or simply not having the support to launch and maintain such an initiative, many countries still do not have suitable policies or legislation in place to properly support people with disabilities or those who require accommodations. For many parts of the world it is an ongoing process to implement laws like the ADA that the United States has - a process that will take quite some time. From the United Nations in a toolkit on disability in Africa (Division for Social Policy Development, Accessibility - United Nations), “In many countries there is a great need for the adoption or amendment of national and sector-specific accessibility standards to give full effect to the requirements of the [Committee on the Rights of Persons with Disabilities (CRPD)].” It is clear that this difference in accommodation level between countries is a serious issue that must be considered when traveling abroad - especially for those with a disability or those who require accommodations. Tourists and travelers need to be made aware of these differences in the culture surrounding accessibility, and consequently, the accommodations that can, or cannot, be made for them; being equipped with this knowledge and information is the best way to ensure a positive and safe traveling experience.

METHODOLOGY

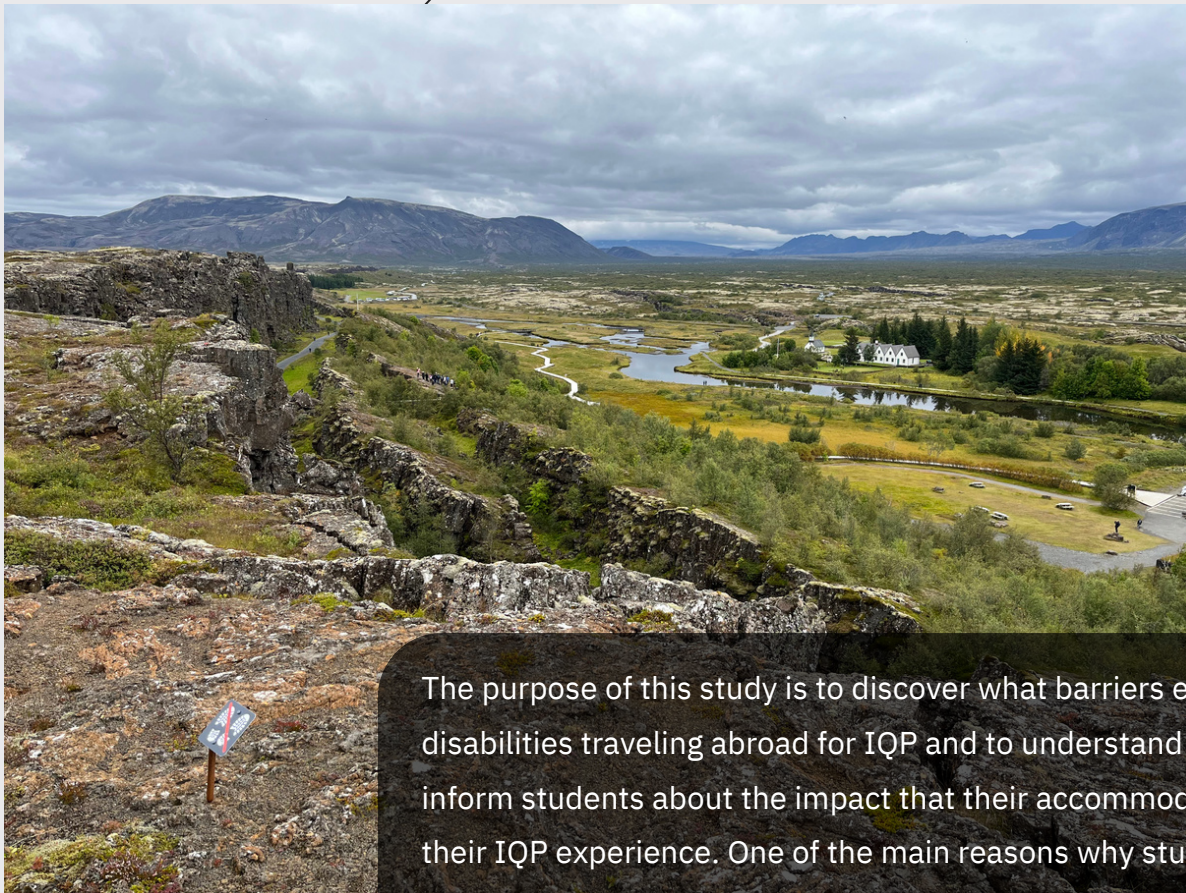


Figure 6. Icelandic Scenery taken by Adina Palayoor

The purpose of this study is to discover what barriers exist for students with disabilities traveling abroad for IQP and to understand how we can better inform students about the impact that their accommodation(s) might have on their IQP experience. One of the main reasons why students choose WPI is because of the unique experience to work on meaningful projects around the world through their IQP. OAS and GEO work to accommodate as many people as possible on their IQP but, unfortunately, there are still many students who are not able to find all the information they need on eProjects and consequently either do not apply to projects abroad or end up not going abroad due to them not being able to make an informed decision. In an effort to ensure that students are able to make the best decision they can, we have formulated three research questions that we explored in our project, all of which were aimed at ultimately making a positive impact on future WPI students applying for IQP.

1

What are the barriers, challenges, and opportunities for IQP students with disabilities trying to fully experience Iceland?

We attempted to answer this question by interviewing various subject-matter experts, surveying students with accommodations, reviewing literature pieces, and analyzing our personal experiences while living in Iceland. The subject-matter experts that we consulted included GEO, OAS, multiple Project Center Directors, the Federation of Disabled People in Iceland, and numerous students. With this we learned how students interact with the IQP application process, what accommodations students frequently request, and what commonalities students had with their experience abroad. This served to build a concrete understanding of the group that we are working to help; from here we were able to pivot to understanding how students best interact with information regarding accessibility.

2

What is the most effective way to inform potential IQP students about project center accessibility?

The process of answering this involved surveying students with accommodations, referring to our interviews with several subject-matter experts, and consulting our lived experience in Iceland. Here we explored what formatting of data, adding more filters, and creating icons to highlight specific elements would look like and how it would be implemented. This helped us understand the communication patterns between students and faculty and how different styles would be perceived. This all came together and led to a simple and effective design that best provides crucial information about a project site.

3

What impact could improving information concerning accessibility have on future IQPs?

This question involved us interviewing various subject-matter experts along with interviewing students at WPI with accommodations. We got an understanding of how eProjects had failed to make students feel able to go abroad and inform them of how they would be supported. These interviews gave us insight into the ways that both students and faculty have had difficulties and how we might be able to alleviate that stress. Our understanding of the problems and how our solutions could make an impact, helped us track how effective our proposals were and encouraged the acceptance of our deliverable that should ultimately help students best find a project abroad.

Survey

A large portion of our project was understanding how students interact with eProjects, what and how information concerning disabilities is portrayed, and what students with various disabilities have experienced while going abroad. To develop our understanding of these topics, we relied on a comprehensive survey aimed at the larger student population who have either completed or are completing their IQP's. Our survey started by understanding a student's background including how often they traveled outside of the US and if they interacted with eProjects while planning for their project. By asking yes/no questions at the beginning of the survey we restricted portions of our survey ensuring a question's relevance to someone's experience. For example, only asking those who actually used eProjects about what categories of the site were important to their planning. From here we asked students questions related to their experience finding information on eProjects, what criteria they used to select sites, how long they spent, and what other searches they conducted. These questions were curated, to gather trends in what sections on eProjects were important to students, what criteria many looked for, and what information may have been neglected.

We also developed an understanding of someone's accommodation history and how it may have impacted their IQP. This was done by asking students questions about dietary restrictions, disabilities as well as gender, and religious-related accommodations. For each of these topics, we started with questions aimed at if students had requested any accommodations related to the topic and what that accommodation may have looked like. This helped us identify more common accommodations, which helped us develop more detailed sections related to what students interacted with. We then pivoted to a section related to their planning process at home, traveling, and IQP. This helped us build a better portrayal of what tools students relied on, allowing us to utilize external links to help connect students with more planning tools. We ended by getting their first-hand account of how they navigated their IQP with or without their accommodation and if there was anything they thought could be improved.

Throughout this comprehensive survey, we were able to better understand how students interact with eProjects, what and how information concerning disabilities is portrayed, and what students with various disabilities have experienced while going abroad. This information is crucial to our goal to build a comprehensive report for both Dr. Sakulich and GEO as it will provide them with more context as to what students go through while applying and conducting their IQP's, and help complement what the faculty side of applications looks like.

Interviews

To ensure that our group had a thorough understanding of the challenges that we wished to evaluate, we utilized interviews - these interviews enabled us to collect up-to-date, applicable, and accurate qualitative data from those who know best about the challenges that accessibility can bring forth, the in-depth IQP process, and the best ways to convey information about accessibility to students. This includes people with disabilities or people who need special accommodations, former and current IQP students, as well as project center directors and WPI employees working in offices relevant to our project. We interviewed the following subject-matter experts: Project Center Directors, GEO, OAS, and Sjálfsbjörg. These interviews helped us better understand and uncover where problem areas lie so that we could detail these issues in our report. As we conducted these interviews, we started to recognize how our target audience would benefit the most: through additional information on important aspects of project center sites, like the accessibility of transportation, hotels, restaurants, tourist attractions, or any other public areas, as well as by simply improving small details of the IQP application process.

Research Ethics

All research projects have some limitations and our project is no exception; our project faced strict time constraints since we started working on the ground in Iceland. Considering we only have seven weeks at our IQP location, the first weeks were hectic as we pivoted our sponsor more than once. This postponed us from preparing our interviews and surveys, as we focused on reviewing our research objectives. Adding to that lost time, we encountered a lengthy, but necessary, review of our survey and interview questions by WPI's Institutional Review Board. This meant that our survey was sent out two weeks later than anticipated, impacting students' availability for filling out the survey.

The major bias we encountered was our target audience only being members of the WPI community, who have limited experience regarding information about Iceland. Due to this, we reached out to experts on the ground to learn more about accessibility in the country. We also utilized our personal experiences traveling and living in Iceland, which can lead to bias as no one in our group exhibits any major accessibility issues. We have compensated for our lack of experience in understanding accessibility in Iceland by interviewing and surveying those who require different accommodations. This allowed us to gain more insight into their lives and help counter any bias that we may have.

Research Ethics cont.

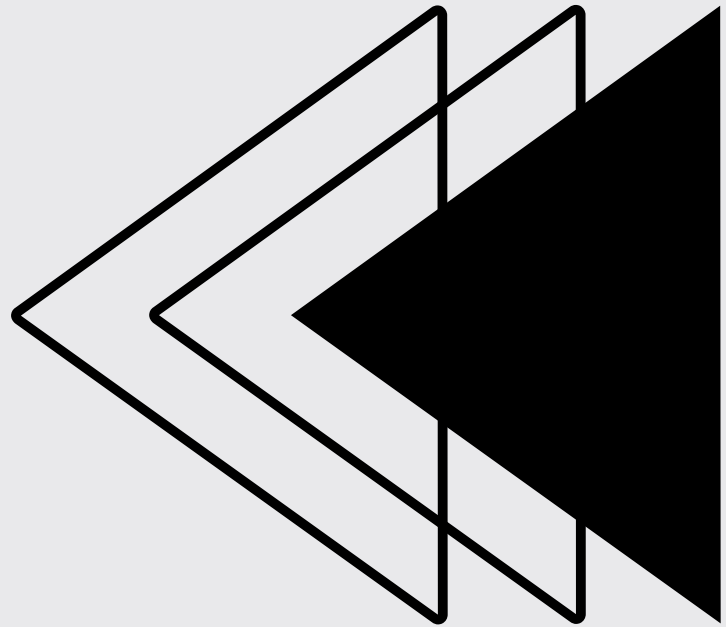
Due to our project potentially containing particularly sensitive personal information about survey respondents' disabilities, it is of utmost importance that we follow appropriate data collecting and handling practices. Having access to data about one's disabilities can be exploited and consequently harm the unsuspecting respondents - which is why we, as the group conducting the research, must adhere to a set of guidelines created to ensure that the data is collected and handled responsibly. One of the measures we took to maintain anonymity is to prevent a connection between someone's identity and their responses. To accomplish this we separated all the interview and raffle data into separate surveys, thereby keeping the survey that contains sensitive personal information completely anonymous. Additionally, we ensured that all data was kept behind an authentication service, through qualtrics and google drive, where only authenticated users can access. The other measure we took was that only our team had access to the raw data and was shared with no one outside of our project group. Moreover, all survey responses will be deleted within 3 weeks of the end of this IQP project. Finally, all of this survey data is collected voluntarily so that respondents know what they are agreeing to provide information on.

The Institutional Review Board (IRB) at WPI is an important aspect of any project looking to conduct research involving human subjects. The IRB looks to promote and support these research efforts while also ensuring that the research complies with proper ethical and regulatory guidelines regarding research involving human subjects. Specifically, the IRB's Guidelines For Internet Surveys are most relevant to our project and will serve as an important reference as we draft our surveys. To certify that our research project, including any surveys that we created, was in accordance with the IRB, we submitted an application to be reviewed by the IRB. This application included a detailed overview of our project as well as the surveys we created to collect data from our target audience.

RESULTS



Figure 7. Ramp-up Iceland initiative



Through surveys, interviews, and our team’s personal experience living in Iceland, we were able to understand not only what it is like to live in Iceland with a disability but also how we can best convey this information on accessibility measures to WPI students. The interviews and personal experience mainly gave us qualitative data and the surveys gave us more quantitative data. All of these sources fused together to give us our takeaways and what we should have in our final deliverable. Due to this valuable information we gathered, the deliverable will include a template for how WPI can display information on accessibility for students applying for IQP.

Interview

As mentioned earlier in the report, we found that interviewing subject-matter experts in relevant fields, such as site directors and WPI employees, yielded incredibly insightful information about our project's objectives. Through conducting interviews with GEO, OAS, and Site Director Dr. Sakulich, we were able to develop a deeper understanding of the problems that are frequently encountered during the IQP process, as well as areas of potential improvement.

When constructing the questions that we wanted answers to, we focused heavily on the behind-the-scenes processes involved in handling IQP project centers as well as accessibility and accommodation measures that may already be in place. The answers that these questions produced were invaluable for our project - they helped us realize and pin down our project's scope as well as validated for us that our project has the potential for meaningful impact. These answers were all qualitative, as they are spoken responses based on questions that were also qualitative. This makes data visualization a bit more difficult than it is with purely quantitative data, which is an important part of data analysis and interpretation. One useful way to conveniently visualize these qualitative answers is through a tool called a Word Cloud - this helps categorize and weight words that hold meaning and impact. This was utilized to draw connections between common answers and themes that persisted through various interviews.

Office of Accessibility Services

Our interview with OAS at WPI confirmed that our concerns about students with accommodations having significant challenges feeling comfortable going away for IQP were valid. One WPI employee focused on improving the accessibility of information for all, says that they find eProjects to be personally confusing to use and feels there is simply not enough information on project sites, especially when related to accommodation information. From London to South Africa, there are things that they know to be difficulties for people with disabilities yet that information is not available to students on this WPI site. London has very little wheelchair accessibility with no curb cuts or tube accommodations. In South Africa, there are issues for people with severe food allergies because of labeling issues on food. The employee suggested that as a university, we start facilitating more conversations about housing accommodations. For example, are singles available for students, is there AC, is housing up to the U.S. standards (ADA approved). Many students do not go away not because of a physical disability but because of certain accommodations that they are used to having while in the United States. If we can provide more information on all available accommodations then we can help more students at least be more informed about how they will or will not be supported in the country they are going away to.

Global Experience Office

There are numerous issues that another WPI staff member brought to our attention in an insightful interview. One is that a good number of students have not been able to travel to the site they were assigned to because of a celiac or nut allergy. They believe that some of these types of issues could have been avoided if students had access to this information before applying to IQP directly on eProjects. The other issue that they have noticed is the fact that bringing a service animal overseas can be very difficult. Animals need to be quarantined for a period of time and also it can be expensive to vaccinate the animal. Recently, there was a student who did not go away because their support animal was not able to go with them. This staff member also feels that the best way to prevent these issues from happening is if we create a better template for students to understand how they will be supported on IQP.

Sjálfbjörg

A representative at Sjálfsbjörg, The National Association of People with Physical Disabilities in Iceland, helped us to understand how we can improve how we display information on eProjects based on what they have been able to accomplish with TravAble and Ramp Up Reykjavik. These two initiatives have helped make Iceland more accessible overall. The app, TravAble, was created in 2013 and has expanded to include accessibility information in more than 34 countries (Osk Sigurdardottir, Travable 2017). At the beginning of the app's creation, it included various types of accessibility information for people with dietary restrictions, mobility issues, allergies as well as accommodations for people who are blind or deaf. Unfortunately, this ended up being too much information so they decided to change it to only include mobility information. The representative said that they started collecting this information by going to local businesses and companies in the area and evaluating what the state of accessibility was for that location. Over the next few years the organization outsourced this work to students who were able to get much more information posted on the app. The second initiative, Ramp Up Reykjavik, involved the organization building more than 100 ramps in a year starting in 2021. Organizations in Reykjavik or really anywhere in the country can request Sjálfsbjörg to build a ramp for their place of business and due to generous donations by both the Icelandic government as well as other companies in the country, they will build this ramp free of charge. Both the usability of the app, TravAble, as well as the Ramps built by the recent initiative have allowed Iceland overall to become significantly more accessible over the past few years. A common theme of our interview with the representative was that the organization has moved Iceland's accessibility forward significantly in the past year. It was clear that Sjálfsbjörg had made a huge impact not only on Iceland but on so many locals and tourists who are trying to experience all the country has to offer. The interview was both inspirational and clarifying of our project's potential impact on future WPI students who are in the need of accommodations.

Project Center Directors

Our meetings with Project Center Directors at WPI all had a similar theme: a need for more support on gaining accessibility information about their country. While many felt it was important that we post information about a project site's accommodations, they were also concerned about their own personal ability to provide accurate information. For example, a project center director knew that mobility-wise their project centers are not ideal, however, they were still concerned that their opinion is very subjective and lacked research on the availability of resources. Furthermore, we talked with a director who had done numerous projects involving assistive technology; they pointed out that every individual is so unique and their needs are so unique that sometimes you can not even generalize to a simple yes or no on whether a certain country is accessible. They also brought to our attention the fact that many students do not think about whether they will be supported best until after they have already applied for IQP, particularly if their needs/accommodations are not mandatory. A universal idea that all project center directors had was that they really do not get many inquiries about project accommodations overall however they feel like there are certainly things that students should be bringing to their attention and often do not until they are already at the IQP site. At least half of the Project Center Directors we spoke with seemed open to the idea of making one of their IQP projects in the future being about understanding the state of accessibility in the country they are working in. Below includes a table where we highlight the problems that a director brought to our attention during the interview and any potential solutions.

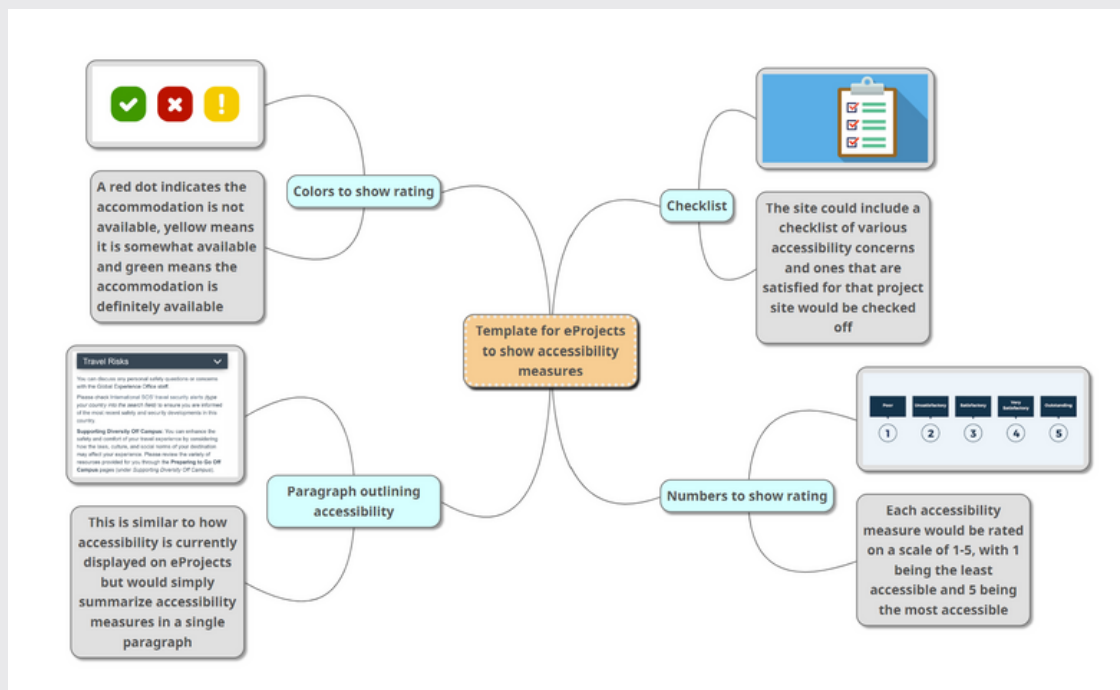


Figure 8. Mindmap showing possible eProject updates

Students

There are numerous students that filled out our survey that indicated that they would be interested in letting us interview them for further questions. We were able to get a lot more in-depth information from these students, especially in terms of being able to get how they would prefer eProjects to be formatted. Their recommendations for how best to show information about accessibility on eProjects are shown in the two mind maps below.

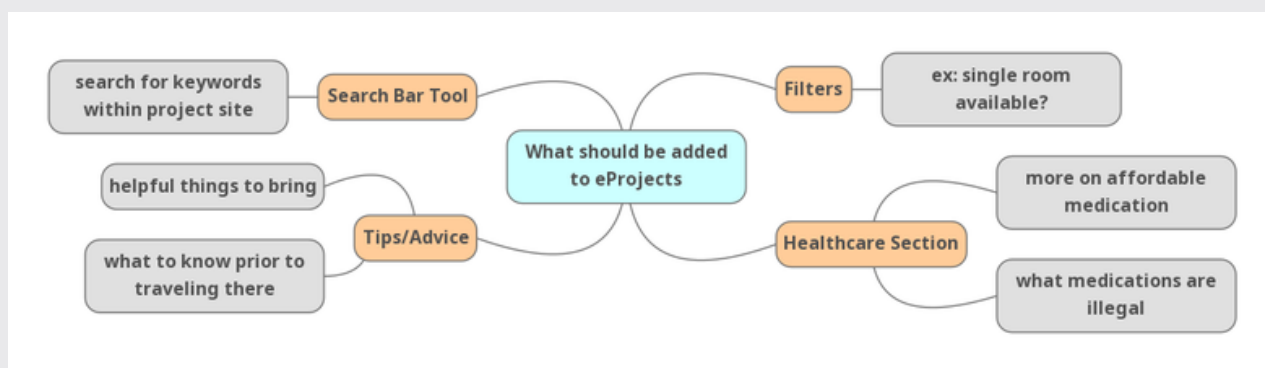


Figure 9. Mindmap showing what should be added to eProjects

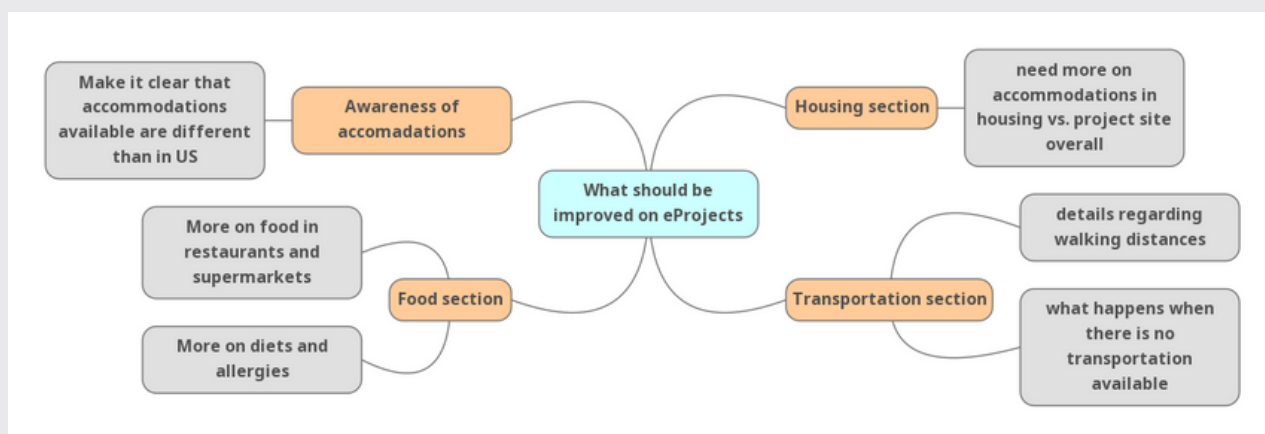


Figure 10. Mindmap showing what should be improved on eProjects

Survey

Through our survey, we generated a better understanding of the process students go through when finding information for where to apply; connecting to the right offices to better accommodate for their disabilities when traveling; and experiencing their IQP location with their accommodations. This was achieved by targeting our survey at those who are currently either preparing for, on, or completed their IQP. To accomplish this, we sent our survey to both the junior and senior classes along with those who have already graduated.

Based on our early survey responses we found that many students did utilize eProjects when planning for their IQP, however, many did report that they needed to supplement their planning with additional location-specific questions. From this we can gather that students have more questions about project sites that do go unfulfilled and consequently have the ability to hamper their experience while traveling abroad.

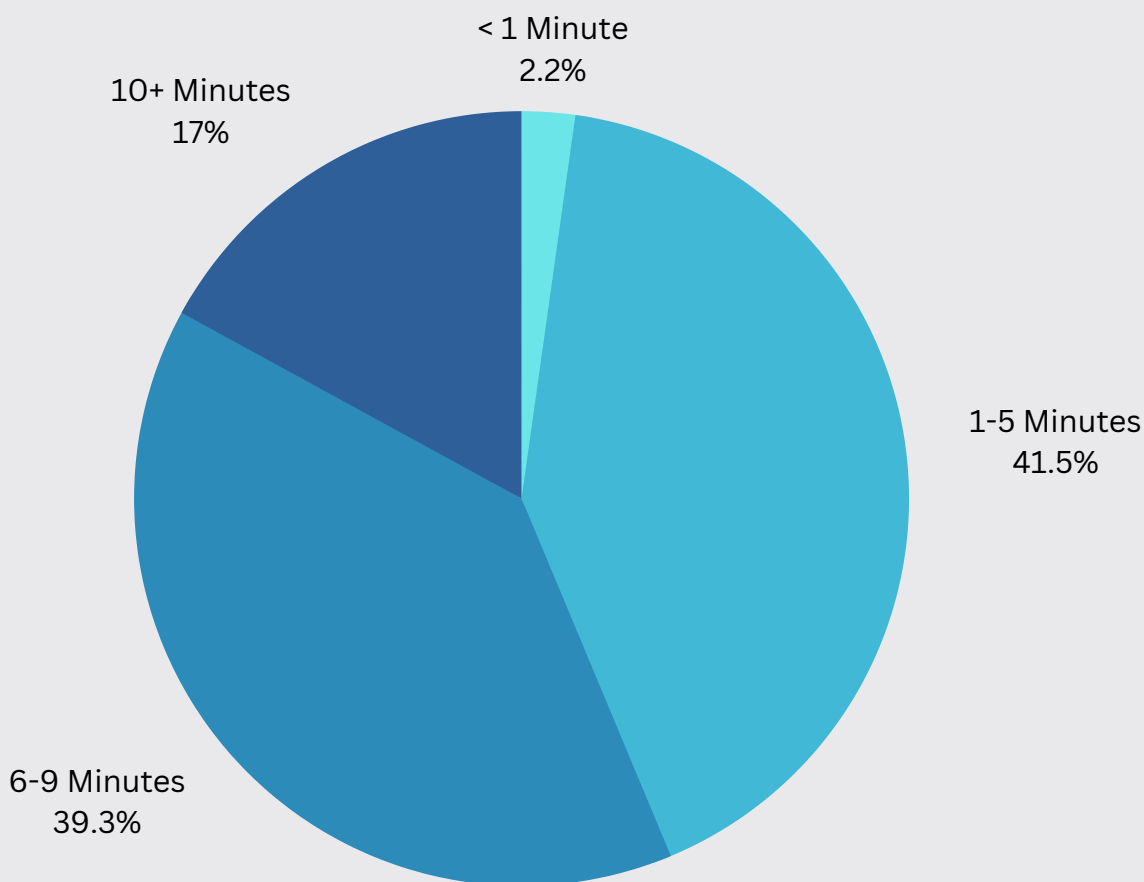


Figure 11. Student Time Spent on each WPI eProject Site



Figure 12. WPI students' difficulty planning vs location

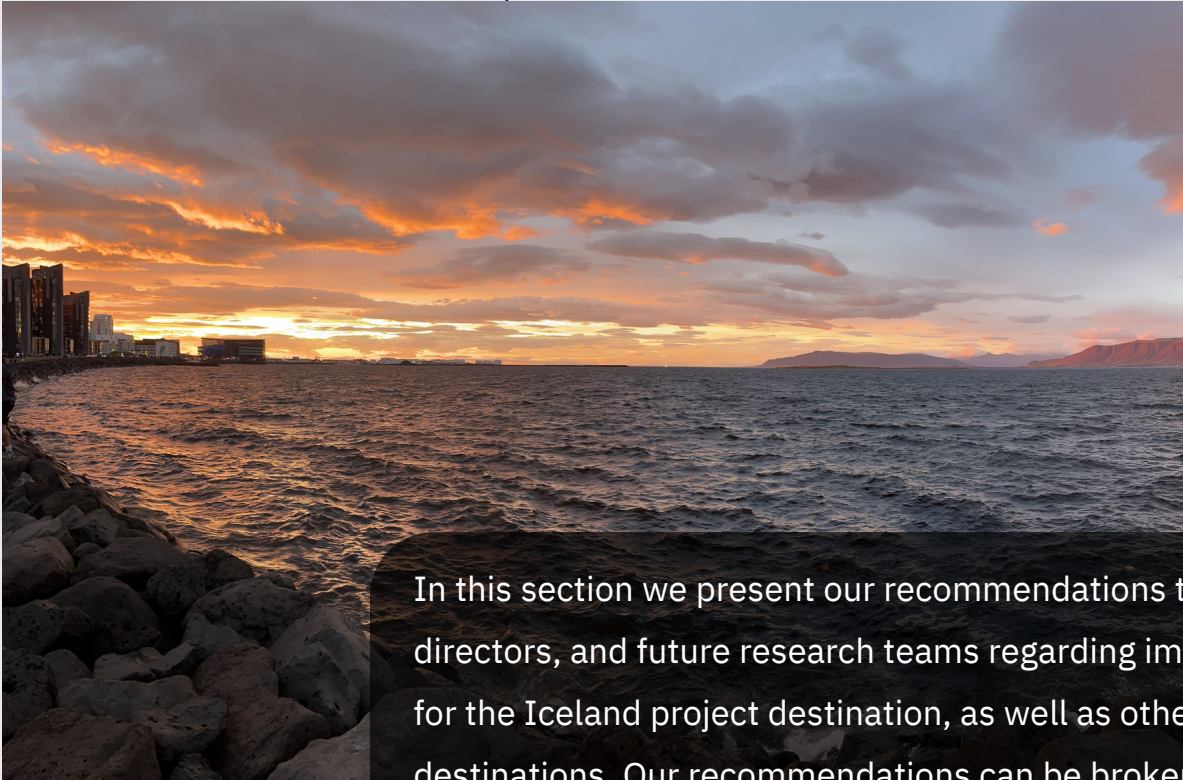


Figure 13. Student felt that these topics were underrepresented on eProjects



Figure 14. Word Cloud showing common words mentioned in survey responses

RECOMMENDATIONS



*Figure 15.
Icelandic Scenery
taken by Adina
Palayoor*

In this section we present our recommendations to GEO, project site directors, and future research teams regarding improving accessibility for the Iceland project destination, as well as other project destinations. Our recommendations can be broken down into three categories: supplying a guiding checklist for project sites in order to evaluate the up-to-date accessibility measures, updating the eProjects website to include more information, and, finally, our evaluation of the state of accessibility in Iceland utilizing the previous two recommendations. These recommendations were put together based on the data we collected from the interviews we conducted, the survey we sent out, vignettes, and supplementary research we conducted.

Supply Project Sites a Guiding Checklist to Assess Site Accessibility

When researching the state of accessibility in Iceland prior to personally arriving, we had come to the conclusion that Iceland was relatively inaccessible for people with disabilities - the initial project was focused on addressing the accessibility of Iceland and its existing infrastructure. After arriving and spending seven weeks in Iceland, however, it became clear to us that this was no longer the case; the numerous ongoing accessibility initiatives have drastically improved the overall state of accessibility in Iceland. The project Ramp-up Reykjavik, for example, has a goal of building 1000 ramps across the country, and had reached 100 ramps four months ahead of schedule (Nordic Editor, Ramping up the goals 2022). This is just one of the many reasons that we believe that there must be a reliable way to supplement independent research - which does not always tell the most up-to-date story - with firsthand experience and data collection. This firsthand experience and data collection should come in one of two ways: by implementing this project into the project site, or through a guiding checklist for project site directors to assess site accessibility.

We know that this project will be an incredibly helpful tool and guide for future WPI students to utilize while applying for their IQP, and we think that all project sites should appoint this project to a group in future years. The data that our team was able to collect was crucial in developing conclusions about the state of accessibility in Iceland, and we know that teams in other destinations following suit would achieve a deliverable that would be able to accurately evaluate the state of accessibility in that project site. With that said, we understand that both developing such a project, as well as actually collecting and putting the data to use, could very well take multiple years and is not always necessary depending on the experience of the project center director.

Our alternative recommendation is that, provided they have been to the destination in question in the past year for an IQP term, the project center director completes a checklist of curated questions that we have found to be the most relevant regarding accessibility accommodations and measures in general. We want to ensure that the project center director is very knowledgeable about the present state of accessibility and has credible information for students with disabilities, which is why we prefer that their experience in that location be recent. Having this guiding checklist for those who frequently visit that destination will enable the collection of consistent, accurate data across project sites. We still propose that this project be performed at every project site because the project center directors might not experience daily life with any specific accessibility issues, which will lead to biases in how they perceive what may or may not be accessible.

Update eProjects to Contain More Accessibility Information

After processing the data that we collected from our interviews and surveys, it became apparent to us that eProjects, the site that hosts WPI's project opportunities such as IQP project sites, does not do a sufficient job at conveying necessary information regarding accessibility and accommodations for project center sites. Students are required to use eProjects to apply for IQP project sites, which is why it is critically important that this site provide accurate, helpful information to reduce the stress, confusion, and uncertainty from the project site selection process.

The current *Allergies, Accommodations and Special Circumstances* eProjects section is often a generic placeholder prompting the student to contact GEO for additional information. This can lead to a complicated and tedious application process for students whose decision is contingent upon an accommodation that they require but are unaware of the general level of accessibility that each project site might have. To better inform students about accommodations and accessibility measures for project site destinations, we recommend that this section be updated by site directors to include data-driven and observational-driven conclusions about the state of accessibility in that project site destination. This data should come straight from the aforementioned checklist that project site directors would fill out to assess certain categories of accessibility in their respective project sites, and this information should be represented in a clear and concise way. Figures 17 and 18 exemplify a mockup of what this new interface could resemble.

Choosing from the hundreds of IQP destinations can be a long and difficult undertaking. Narrowing the list down can be expedited through the use of relevant-to-you filters that eProjects already features; however, this list of filters is short. To enhance the student's selection process, building upon the current filter infrastructure and simply adding to the number of filters would make for a better eProjects experience overall.

Evaluation of Iceland's Accessibility

Our last recommendation is an overview of the information that we were able to gather while in Iceland and what we learned about the state of accessibility in Iceland overall. As mentioned previously, we had originally anticipated the state of accessibility in Iceland to be outdated and inadequate - rather, we discovered that with the initiatives and practices in place regarding improved accessibility, Iceland is quite the accommodating destination. We spoke to and interviewed various subject-matter experts in areas of study related to accessibility and accommodations, resulting in our group developing a deeper understanding of what accessibility measures are currently in place and the impacts that they have. The representative at Sjálfsbjörg, for example, was able to point to a variety of specific examples about how Iceland is constantly adopting new plans and setting new goals to improve accessibility for all. Whether it be accommodating those with physical disabilities by building 1000 ramps around Iceland or developing an app to assist those with a variety of disabilities, it is clear that Iceland's attitude towards accessibility has grown exceptionally. Figure 18 summarizes our findings, utilizing our mockup update to eProjects as a method of conveying information regarding accessibility more prominently.

Dietary Restrictions	✔ if Applicable		
Is there a kitchen available?	Red	Yellow	Green
Are vegan options available? I. Grocery Stores II. Restaurants	Red	Yellow	Green
Are vegetarian options available? I. Grocery Stores II. Restaurants	Red	Yellow	Green
Are halal options available? I. Grocery Stores II. Restaurants	Red	Yellow	Green
Are kosher options available? I. Grocery Stores II. Restaurants	Red	Yellow	Green
Are allergy (Nuts/Gluten/Shellfish/Whitefish) free options available? I. Grocery Store II. Restaurants	Red	Yellow	Green
Do food products have English labels ? I. Grocery Stores II. Restaurants	Red	Yellow	Green

Figure 16. Guiding checklist example of dietary restrictions portion

Changes to eProjects Example Website

Terms Offered

2022-2023 A

Program Start Date

Wednesday, August 24, 2022

Housing Opens Date and Time

Wednesday, August 24, 2022 - 12:00pm

Arrival Airport

KEF

Group Pick Up Already Provided

No

Program End Date

Friday, October 14, 2022

Housing Closes Date and Time

Friday, October 14, 2022 - 12:00pm

Departure Airport

KEF

Ground Floor Apartment/Room

Not Available

Elevator

Yes

Air Conditioning

Not Available

Single Room

May Be Available

Mixed-Sex Apartment

May Be Available

Beds in Bedroom

2


Bedrooms in Apartment

2

Budget Sheet

Housing and Program Fee	\$3,500.00
Billable subtotal:	
On-site commuting costs	\$120.00
Meals	\$700.00
Tourist activities and incidentals	\$900.00
IQP Related Project Incidentals	\$150.00
Non-Billable subtotal:	
Total:	

Housing



Housing Dates

August 24, 2022 - October 14, 2022

Amenities

- Laundry Room in Basement
 - 2 Washer
 - 2 Dryers
 - Ironing Board and Iron
- Elevator
- Weekly Cleaning
- Free WiFi

Suite Information

- 2-4 Rooms per Suite
- 1-2 Beds per Room
- Fully-Stocked Kitchen
 - No Freezer
- No Air Conditioning
- No Safe Available
- Sheets and Towels Provided

Budget Notes

Program Dates

Students must arrive on or before the posted start date and stay through the posted end date of the program. Dates will be posted at the top of this page. WPI housing will be available from the start date to the end date. If students plan to arrange any personal travel before or after the program, they will be responsible for arranging and paying for their own housing.

Figure 17. Prototype eProjects website

Changes to eProjects Example Website

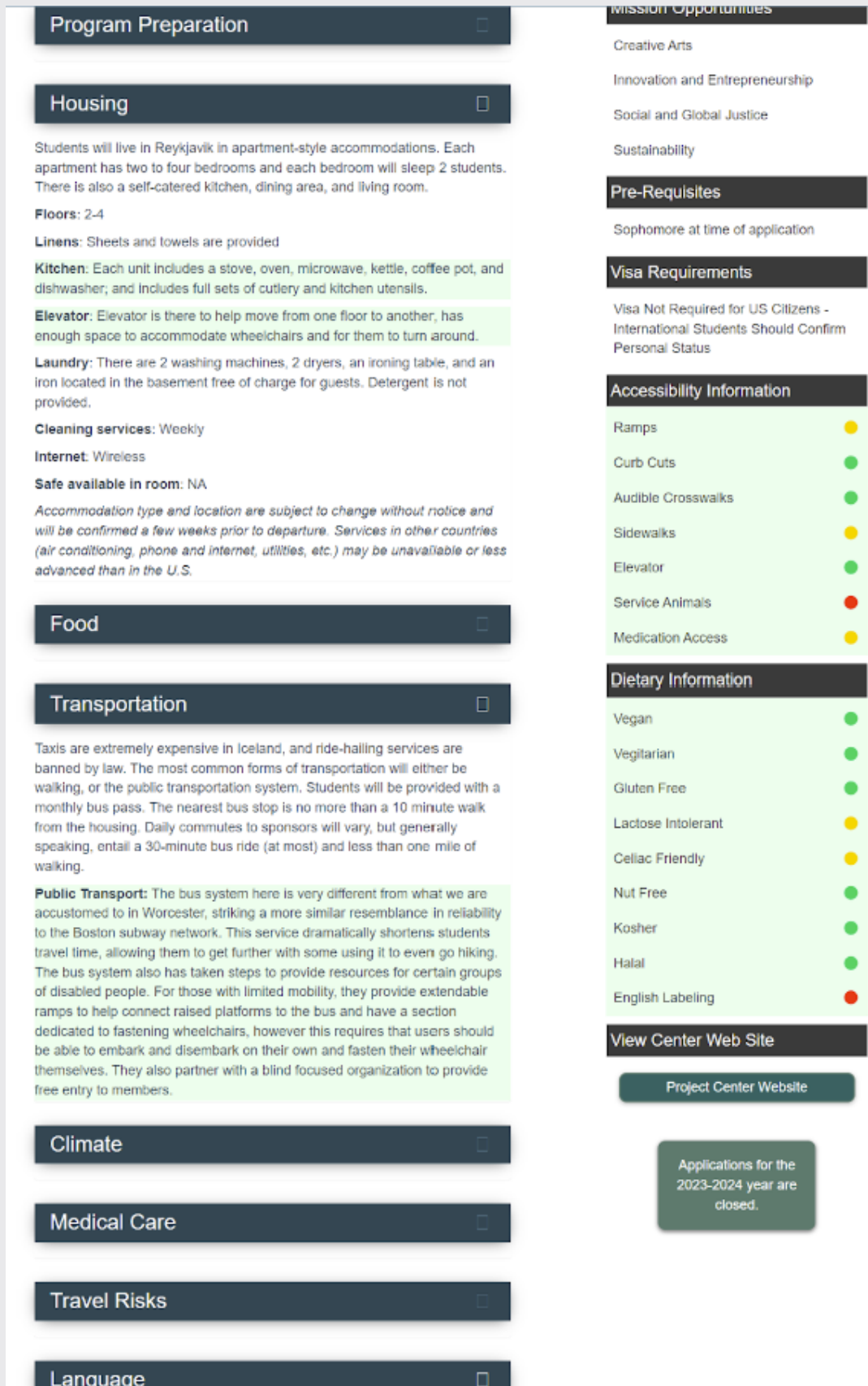


Figure 18. Prototype eProjects website

Conclusion

Over the course of this project, we were able to discover a multitude of important results. Through examining our research questions in-depth by interviewing subject-matter experts and past and present IQP students, we found that there are barriers to entry for people with disabilities when progressing through the IQP process. This includes the pre-application and research phase as well as the studying abroad portion of IQP, both of which are crucially important aspects of a WPI student's educational experience. Of our key takeaways, the lack of information regarding various accessibility measures listed on eProjects and students not being aware of the importance of self-advocating for necessary accommodations were the most predominant.

Our final recommendations and deliverables all share the common goal of increasing the availability of accessibility related measures and accommodations for future WPI students on IQP. We created a guiding checklist to be used by project site directors so that they can assess the state of accessibility of their project site(s). If, however, the project site director is not familiar with the current, up-to-date state of accessibility of their project site, we recommend that they look to introduce our project into their project site. This will allow a team of researchers to spend time at that site and collect data regarding various aspects of its accessibility. With this data - from either the guiding checklist filled out by the project site director or from the group of researchers - comes our second recommendation: update eProjects to contain more accessibility information. This recommendation includes the addition of this data as well as changes to eProject's layout to make for a more comprehensible and digestible website. Our last deliverable was combining the two aforementioned recommendations in order to evaluate the state of accessibility in Iceland.

At the end of our project, we consider our research to have the ability to impart meaningful change on how accessibility and people with disabilities are accommodated during the IQP process. As a research team, we were delighted that many of the people that we interviewed saw promise in our project - so much so that there is potential to carry on our project goals and aspirations even after our IQP is completed. We hope that with our recommendations and deliverables, our project is adopted in other project sites and is able to prosper and expand to include a greater number of accessibility accommodations and considerations.

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We recognize that our project is only a reality thanks to the guidance and passion of these individuals, and we are grateful for their willingness to collaborate.

Team Members:

Miguel Duran

Adina Palayoor

Arnav Sacheti

Jack Tervay

Sponsor:

Dr. Aaron Sakulich

Advisors:

Dr. Sarah Stanlick

Jeffrey Solomon

Subject Matter Experts:

Ósk Sigurðardóttir | Sjálfsbjörg

Taylor Rohena & Amy Curran | WPI Office of Accessibility Services

Krista Miller & Deb Fusaro | WPI Global Experience Office

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