POWER, RESPONSIBILITY, AND JUSTICE IN RESEARCH WITH INDIGENOUS COMMUNITIES

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POWER, RESPONSIBILITY, AND JUSTICE IN RESEARCH WITH INDIGENOUS COMMUNITIES

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ABSTRACT

Cultural context is necessary for students to build connections and conduct responsible research on their Interactive Qualifying Project (IQP), especially with regards to Indigenous communities, and this is not adequately provided in the current preparation phase of the IQP. To supplement existing resources, we created the Just IQP Research website for ethical partnership with Māori communities, using insights from our research including interviews with past IQP students, advisors, and scholars in New Zealand who have collaborated with the Indigenous Māori population. The website, wp.wpi.edu/justiqpresearch, focuses on 6 key concepts that emerged from our research: culture and history, language, reflection, discomfort, ethical listening, and accountability.

EXECUTIVE SUMMARY

BACKGROUND

Colonialism has been a defining force in shaping the relationship between Indigenous communities and their settler colonizers, and in most cases only benefiting the latter. Understanding how colonization is perpetuated across academic platforms is a step toward building ethical frameworks for how research can be conducted in a way that is mutually beneficial for researchers and Indigenous communities. Aotearoa was a country of interest that was "successfully" colonized by the British in a wave of settlement in the 1800s. The newcomer British in 1840 offered the Treaty of Waitangi, which provided structural and economic improvements to Māori tribes, such as hospitals, schools, and reserves in return for purchasing land at a low cost. This led to making ownership claims and implementing their own values and governance models. The Māori people suffered severe repercussions for this treaty, losing their land and ways of life.

Worcester Polytechnic Institute anthropologists Professor Shana Lessing and Professor Yunus Telliel sponsored a project to build a toolkit for student researchers that collaborate with Indigenous partners. Their work joins a growing movement of academic practitioners who recognize how colonial methodologies have perpetuated stereotypes, erased Indigenous knowledge, and reinforced dominant ideas for centuries. As such, both students and faculty stand to benefit from this resource as it encourages them to consider their position in the world. Indigenous groups will benefit as well; by amplifying their voices, this resource will promote their own perspectives on what responsible and just research would look like.

GOALS AND OBJECTIVES

The goal of this project was to build a toolkit for researchers, such as future WPI IQP students and faculty, that work with Indigenous partners. The digital resource would serve as an educational and practical guide that is designed to further our commitment to Indigenous voices in the research process. We established the following objectives to meet our goal:

Objective 1: Understand Māori perspectives on research collaboration

Objective 2: Understand the needs of the researcher

Objective 3: Identify ethical research strategies and practices

APPROACH

Each of our objectives was addressed through multiple interviews with various parties in addition to an exploration of related literature and a review of other educational digital resources. For the first objective, we conducted semi-structured interviews with Māori and Pākehā scholars and IQP sponsors which focused on their research experiences and their interactions with WPI students. These interviews led to more contacts, helping us

explore the significant keywords, or aspirations, which became the focal point of the website. The second objective was achieved through anonymous surveys in addition to semi-structured interviews with both past WPI students who completed their IQP with an Indigenous group and WPI advisors who oversaw these IQPs. We were able to gather advisors and students' perceptions of the ethical and cultural components of the preparation phase of IQP. Finally, the third objective was addressed by looking at the common themes and advice that came up throughout all the interviews, which we distilled into key concepts.

RESULTS & DISCUSSION

While there are resources to guide students' learning about this topic outside of the classroom, we wanted to create an extensive toolkit that prompted students to be introspective and energized to learn more. Through our interviews with Māori and Pākehā individuals, WPI students, and WPI faculty we identified some key 'responsible research' concepts and aspirations to convey in the digital resource. The aspirations included language, culture and history, reflection, discomfort, listening and trust, and accountability. The six aspirations served as the baseline for the creation of the digital resource titled *Just IQP Research*.[1]

REFLECTION

Understanding basic Māori language helps when conducting research and when communicating with Māori community members. Using Māori words instead of English interpretations of them shows respect for Māori frameworks and requires students to show a deeper understanding and respect for Māori culture. Resources related to language, such as a Māori dictionary and videos focused on pronunciation, make it easier for students to use Māori terms. In the Just IQP website, we provided a resource to share traditional Māori greetings, such as the mihi and pepeha, and guide students through understanding how to do share these greetings themselves.

CULTURE AND HISTORY

Since Aotearoa is a bicultural country, Māori culture and history need to be acknowledged and understood so that projects can be helpful to all members of the community, no matter what their identity is. Respecting and being open-minded to different cultures is key when working with other communities, and WPI advisors have stressed the importance of being accepting of new ways of thinking (Thomas Balistrieri, Jan. 27, 2022). We compiled some information about history and culture with links to published material on Māori culture and history, written by Māori authors, that future students can use to learn more about the topic before embarking on their IQP. Additionally, we provide links to audio and audio-visual sources such as Lake Stories by Ra Smith, who has sponsored multiple IQPs.

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[1] wp.wpi.edu/justiqpresearch

REFLECTION

Before embarking on their projects, students should reflect on what they know about the community they are working with, including any assumptions they may have. Students should always hold an attitude of having to continuously learn. Although the students working in Aotearoa are most likely not of Māori descent and therefore cannot conduct Kaupapa Māori, a Māori research practice, in its entirety, they can utilize the key concepts (Walker et al., 2006). The digital resource includes suggestions and quotes from interviews to help guide them through the process of reflection. Reflection topics we've included are knowing one's own history, questions to consider before traveling, and questions to help evaluate interview questions and the research process. We believe that this will encourage students to do their own research about themselves, where they come from, and the histories that have informed their identities, biases, and aspirations.

DISCOMFORT

As with any research project conducted in partnership with people who come from a different culture, IQP research is a learning process, and can be uncomfortable for a student. We want to encourage students to sit in this discomfort, reflect on why it may feel uncomfortable, and identify what they need to learn more about to become more comfortable in such situations. Students should strive to continuously learn from discomforts, be open to the feedback they receive, and be able to apologize and accept when they may do something "incorrectly." The page on discomfort shares our own challenges and encourages students to get comfortable with being uncomfortable and reflect on why they are feeling that way.

ETHICAL LISTENING

Through truly listening to Māori participants, students can help stop the historical cycle of exploitation of Indigenous communities internationally and work against extractive transactions and toward promoting genuine collaborations (Maria Bargh, personal communication, Jan. 20, 2022). Students must understand the historical context of exploitation before creating question sets and interviewing Māori community members to ensure they are acting in a respectful manner. Some listening issues arise from students entering IQP projects under the assumption that they are there to help a community without acknowledging how much they can learn from the community members sharing their wisdom. This section of the website encourages genuine connections to building stronger, long-lasting relationships between WPI students and Māori sponsors. We also acknowledge that storytelling plays a significant role in Indigenous cultures and therefore students should be open to this if it comes up in their interactions.

ACCOUNTABILITY

When non-Indigenous people are working with Indigenous communities, it's important that the researcher isn't drowning out Indigenous Peoples' voices. All work that a student conducts in Aotearoa New Zealand will affect Māori communities in some way, even if indirectly, and students must always be thinking about how their project affects Māori communities and what they can learn from Māori knowledge to make their projects more beneficial to all. Our page on accountability addresses this concept and provides insight into ways that students can actively promote the accountability of their IQP research, such as educating themselves on Kaupapa Māori, Aotearoa's culture and history, practicing ethical listening, and reflection.

RECOMMENDATIONS

Education, reflection, and collaboration are essential components that will serve as the foundation for students to develop relationships and produce projects that benefit the communities they partner with in Aotearoa New Zealand. Based on conclusions we drew from the detailed answers and experiences we learned about from interviews, we have devised the following recommendations:

- This project should be renewed. Given time constrictions of this project, we believe there is more information to learn than what we were able to gather and thus the project should be continued.

- Include additional features on the website, such as a discussion board, calendar of related events, and mailing list.

- Appoint someone to oversee website to keep the information up to date and monitor the abovementioned features.

- Additional projects like this one should be completed at other sites that involve partnerships with Indigenous communities with resources specific to those locations.

- Either begin a Pre-PQP for the New Zealand site, or travel early to the site, to focus on language and culture.

- Students and advisors should engage in regular and structured reflection both before and during the travel period.

- Students and advisors should focus on accountability in ID2050 to gain a better understanding of how their projects will affect the communities they work with.

- Advisors should participate in a training program about social sciences, the principles of responsible research, and cultural background before beginning PQP and IQP so that they can better support students.

SUMMARY

The relationships created and sustained between Māori communities and WPI undergraduate students exemplify the delicate yet valuable bonds that can be made across cultures when the proper care and preparation is taken to ensure these partnerships are responsible. Although there is an education structure in place to inform students and advisors about best practices for partnering with Indigenous groups, it is a topic in which constant learning and open-mindedness is essential. The development of our digital resource is a small step towards this goal.

Our project highlights the need for a more culturally involved preparation in addition to an increase in self-reflection on the students' behalf regarding their own experiences and positionality. These research goals of this project align with three of the UN Sustainable Development Goals: #4 quality education, #10 reduced inequalities, and #16 peace, justice, and strong institutions. While it is our sincere hope that future students can have an immersive experience and can productively collaborate with Māori individuals, it will be their individual preparation that determines the outcome.

ACKNOWLEDGEMENTS

AUTHORSHIP

This report is a result of equal contributions of all authors.

Hi everyone! My name is Melissa Hauman, and I am from Tyngsboro, MA. I am currently studying mechanical engineering with a concentration in biomechanics at WPI. This project was enlightening and a significant experience learning about the Māori culture. The skills I learned from this project are ones that will be useful in the future and are valuable. I am grateful for getting to work with my team and sponsors and proud of the work we were able to accomplish. This hopefully will be just the start to improving not only the New Zealand site, but also other IQP sites as well.

Hello! My name is Samantha Havel, and I am from Dracut, MA. I am currently studying biomedical engineering with a minor in mechanical engineering here at WPI. Although we were not able to travel to Aotearoa New Zealand, I am so grateful for my team and advisors for making this experience so significant. Since the start of this project, I have learned so much about Māori culture and the importance of accountability and respect in research, and these are lessons I am sure I will take with me into my engineering career. I am very proud of my team's digital resource, and I am hopeful that not only will it supplement students' background and cultural knowledge, but also spark a conversation to improve the cultural preparation for all IQP sites.

My name is Logan Rinaldi, and I am from East Providence, Rhode Island. I am majoring in Robotics engineering with a minor in electrical and computer engineering. I am also a member of the Varsity Women's Rowing Team. I have valued this IQP experience, especially for the new connections I've made with people from Aotearoa and in my own community here at WPI. Learning about a new culture and doing research with other communities has been extremely enriching. I hope to take the values I have learned about listening, acting in the best interests of community members, and respecting differing views into my professional field. I think this project will spark important and necessary conversations at WPI, and I am excited to see what the results of those conversations are.

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INTRODUCTION

Imperialism has been a defining force in shaping the relationship and the narrative between Indigenous communities and their colonizers, and in most cases only benefiting the latter. In fact, a direct form of colonization has, and continues to be, research dynamics about Indigenous communities, where "Indigenous people [are viewed] as beings to be studied: as the 'other,' as part of nature, rather than equal holders of collaborators in the creation of knowledge" (Koster et al., 2012). Understanding how colonization is perpetuated across academic platforms is a step toward building ethical frameworks for how research can be conducted and is necessary for forming productive and mutually beneficial relationships between researchers and Indigenous communities.

Recently, universities and other research institutions have realized the issues that imperialism has brought on; and acknowledge how the western gaze on this topic is not only strongly influenced through one perspective, but also how the research generated from colonizing experiences has affected Indigenous groups negatively today. Typically, historic research on this topic has been one-sided: from the western culture's point of view and written and researched as a positive and praised achievement. Tribal Māori people, such as the Ngai Tahu, disagree on this point of view; seeing that the outcome not only resulted in the loss of their land, but also continues to negatively affect their cultural and mental wellbeing (Reid et al., 2016). Research institutions realizing the hardships and imbalanced perspectives brought on by these practices now need to make space for traditional Indigenous knowledge and historical narratives.

Worcester Polytechnic Institute anthropologists Dr. Shana Lessing and Dr. Yunus Telliel wished to build a toolkit for researchers that work with Indigenous partners. The resource would provide educational and practical guides designed to do more to support our commitment to Indigenous voices. In a university that works closely with project-based learning around the world, there is a lack of resources for ethical practices. Therefore, the goal of our project is to create a digital resource that guides undergraduate students in conducting ethical research, specifically with Māori partnerships in Aotearoa (colonially known as New Zealand).

To meet our goal, we have identified three objectives. First, we will evaluate case studies in how the history of colonization in Aotearoa from the Māori perspective compares to the western scholarship. This will include research on the pattern of oppression of Māori culture in Aotearoa New Zealand, and also an understanding of the long-term effects of colonization to get a better baseline understanding of the problem. Our second objective will compile present work that has been done to develop tools for

researchers. This includes evaluating and cataloging best practices in partnered research across Indigenous communities, activist movements, and institutional efforts in Aotearoa affecting Māori. Our third objective will identify the emerging needs of research partners. Part of this domain will focus on the diverse types of research methodologies and their limitations as they pertain to just research practices. By amplifying Māori voices and dismantling past relationships between research and indigenous' narratives, we hope to provide a path for future ethical research between WPI students and Indigenous groups.

LITERATURE REVIEW

This chapter will provide background on efforts to decolonize methodologies in Aotearoa, commonly known as New Zealand. We present perspectives from the Māori people, the history of research methodologies, and guidelines for conducting research on or with Indigenous groups. Finally, we address documented effects of dominant narratives generated by western perspectives, and present case studies that demonstrate positive research frameworks for work with Indigenous groups.

HOW COLONIZATION SHAPED THE STORY OF AOTEAROA

The history of the colonization of the Māori of Aotearoa is one that has unfolded for more than 200 years. Aotearoa was a country of interest that was "successfully" colonized by the British in a wave of settlement in the 1800s. The newcomer British in 1840 offered the Treaty of Waitangi, which provided structural and economic improvements to Māori tribes, such as hospitals, schools, and reserves in return for purchasing land at a low cost, beginning the process of making ownership claims, implementing their own values, and governance models. One of these cases applied to the Ngai Tahu, a Māori tribe from the south island, which sold 34.5 million acres of their land at a low cost, in return of receiving the benefits that were proposed; although, the tribe never received the hospitals, schools, and reserves as promised (Reid et al., 2016). The British convinced Māori tribes into selling their land and would fail to hold up their end of the deal, resulting in negative repercussions for the Māori. The Ngai Tahu and other Māori protested this, claiming the translation of the document was misinterpreted. Eventually, in 1867 the Māori Representation Act enabled four Māori to be part of political decisions (Frankil, 1989). This was a long battle, and several policies were put in place designed to help; but inevitably made things worse (such as the Native Land Act or Native Lands Administration Bill). Eventually, the Treaty of Waitangi Policy Unit was created in 1988 to help with settlement strategy and negotiations; the Ngai Tahu tribe was able to come to an agreement creating the Ngai Tahu Deed of Settlement 1997. This led to British apology, historical account, the development of Ngai Tahu Council, Right to First Refusal, purchase of British properties (such as schools), return of land of cultural significance, and other additional policies/actions (Reid et al., 2016).

Several pieces of historical research claim that there were additional beneficial outcomes to the British settling in Aotearoa New Zealand. Stuart Banner's book on Possessing the Pacific: Land, settlers, and Indigenous People from Australia to Alaska describes this historical event from the common Western point of view as a positive accomplishment for all parties involved. The chapter specifically on Aotearoa New

Zealand colonization describes how "a reputedly savage people like the Māori could be so hardworking, so skilled- so nearly civilized..." (2007). Since the Māori were seen as in need of help to become fully civilized, colonists decided that they would take over and "improve" their society. According to this narrative, the Māori embraced these recent changes, and "by the 1860's Māori all over the country owned horses, guns, European clothing, and European tools" (Banner, 2007). The diction and information provided are heavily one-sided and depict the British colonizers as the heroes for Māori tribes that needed saving. While the record suggests that the Māori were grateful for new structures, policies, and European cultural ideas, this is in fact not the case.

In colonizing scenarios, there are problematic power dynamics that are brought on by imperialism, which trap both psychological and material choices. In Aotearoa, losing control of the land meant that now Māori began to lack basic human resources and were reduced to living in altered spaces "with no option but to live in overcrowded and unhygienic conditions. In losing land, they also lost access to traditional food sources, a history that has played out in colonized states across the globe. Lack of resources with food insecurity and poor diet has enabled disease to take hold and spread" (Pool, 2011). These living environments and lack of promised access to resources has led to an increased vulnerability among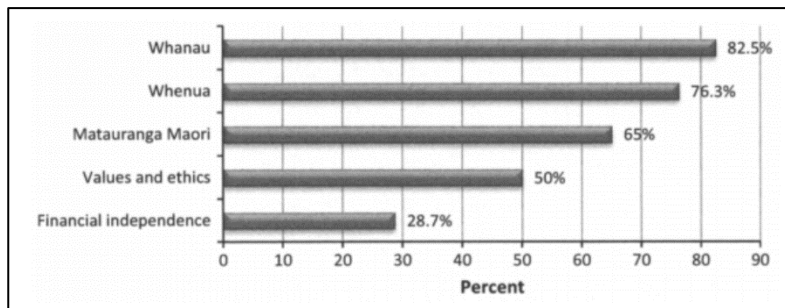 the Māori people. Figure one shows that not only does this affect communities physically, but severely affect their mental wellbeing (Reid et al., 2016). The Whenua Project, a research project surveying and taking the narratives of eighty Ngai Tahu found that about 83% said staying connected to their whanau (extended family) and about 76% said staying connected to their whenua (land) was directly correlated to their cultural wellbeing and mental health (Reid et al., 2016).

Figure 1 Sources for cultural and psychological well-being (Reid et al., 2016)

Knowing this and the fact that the Māori had lost most of their land and their people were dying from an increase of diseases; it comes to no surprise that they were devastated by what the colonists were doing. Whanau and Whenua are the main drive to who the Māori are and what they uphold; without their land and family, they lost their traditions, values, stories, and a sense of identity. The Māori were being erased right

before their eyes. In many cases, colonizers see the land they are taking solely as a profit and lack the understanding of how they were not just taking land and food away, but they stripped culture and identity from Indigenous people as well. To make things even more frustrating "no matter how appalling [the colonists'] behaviours, how insensitive and offensive their personal actions may be, their acts and intentions are always justified as being for the 'good of mankind'" (Tuhiwai-Smith, 2012). The history of colonization is commonly taken from the Western and rarely includes the latter perspective, continuing to leave Indigenous groups with no voice and loss of who they are

The history of colonization in Aotearoa New Zealand and the continued lack of inclusion of their stories in research is still a pressing issue today. Currently, Aotearoa New Zealand struggles to get Māori vaccination rates for the Covid-19 virus. This is due to "[Māori having] a high level of distrust toward the government based on their experiences of injustice and oppression" (Stoakes, 2021). Even though the vaccine would help Māori people survive in the pandemic, the distrust is so large the community members will collectively agree not to get vaccinated. This all stems from the treatment of colonizers back in the 1980s to how their voices and stories are still oppressed today. Research today needs to be conducted ethically and respectively to ensure not just the Māori, but all Indigenous groups are not oppressed.

PARTNERS, ACTIVITIES, AND ALLIES

This project was guided by WPI anthropologists Lessing and Telliel, who wished to develop a digital resource as a future research toolkit for the WPI community. Their work joins a growing movement of academic practitioners who recognize how colonial methodologies have perpetuated stereotypes, contributed to lost knowledge, and reinforced dominant ideas for centuries. As such, the types of people that stand to benefit include students and faculty who are retrained to consider their position in the world. Others that will benefit are Indigenous groups as well since we have provided their perspective, this project will contribute to how the dynamic between them, and the western researchers can be improved for future interactions.

Future WPI students are one of our key stakeholders; the digital resource will guide students for future research on Indigenous groups. Since this project is constructed for them, they have the power to access it and was designed to their liking. Ideally, this resource contributes to the student group's background knowledge on the subject and is influential in guiding their actions while conducting their IQP with an Indigenous group. Advisors Lessing and Telliel are also key stakeholders as well, for they have the power to direct future students to our resource and provided input along the way of building it.

The Māori people are also a major key stakeholder in our project. Although this resource could potentially be useful for all Indigenous groups, its focus is on the partnerships involving Māori and was composed from interviews and their narratives. In addition to amplifying their voices, the Māori people have the most to gain from this partnership, as the goal of the resource was to decolonize the methodologies used in research, thus resulting in more productive partnerships between other groups and the Māori people. Outside researchers are secondary stakeholders since they can visit the website and follow our methods for other Indigenous groups, while these Indigenous groups will again be stakeholders since they stand to gain from these improved partnerships.

HOW ACADEMIA HAS DOMINATED RESEARCH

Anthropology is the study of all of history from different perspectives and how all these perspectives interact with one another. This is significant since including other cultures and ideas can expand each individuals' knowledge and acknowledge the cultural worth of others. Since many interactions between Indigenous groups and the Western world arise in the academic sphere, it is crucial that the necessary measures are taken to ensure respectable and mutually beneficial partnership results.

To best understand the disconnect that has prompted many failed partnerships and magnified the struggle of many Indigenous groups, one must first understand the lens in which knowledge and history are shared. It is a fact that the Western world colonized a massive amount of land and various groups of people with the idea that these groups needed the Western ways in order to be civilized (Wungsukit, 2020). While they are no longer being physically colonized, their histories and intellects are continuously disregarded and replaced with a non-native perspective in education, colonizing them again (Wungsukit, 2020). This practice has brought up generations of scholars who only know the Western way of thinking, thus continuing the vicious cycle of rejecting Indigenous epistemologies (Sen, 2021). This in turn has resulted in beliefs of academics that are uncompromising, so when the time arises to work with an Indigenous group, the academic frequently believes that they know what is best for the group without consulting them, an act that continuously harms Indigenous individuals. It has become increasingly apparent that academia needs to change in order to encompass a wider array of voices and knowledge, it will be an iterative process rather than one simple solution.

Since the final product of our research will be an academic resource, taking on the role of a diligent anthropologist is vital. While our final deliverable will in no way decolonize academia or research as a whole, it is a crucial step in the process for decolonizing knowledge and promoting more equitable partnerships among all peoples.

Historically, research conducted about Indigenous groups has not benefited said groups and has furthered Western ideologies in a harmful way. Research has failed to include native views, and as a consequence, research conducted with the goal of helping Indigenous people can become unusable to the same people it was supposed to help (Kelley et al., 2013). One reason for this is because research is conducted on Indigenous people rather than with them (Drawson et al., 2017).

The first step in ethically researching any Indigenous group is recognizing that it "necessitates an active awareness of the extent to which deferral government agencies and affiliated institutions have oppressed, discriminated against, and engaged in culturally biased practices with these communities," (Kelley et al., 2013). The experience of Indigenous groups today is a direct result of colonization, and research must acknowledge how colonization has influenced a group throughout the entire research process. This has not always been done in the past, and as noted by Vanessa Simonds and Dr. Suzanne Christopher, who state, "past researchers have disempowered communities, imposed stereotypes that reinforced internalized racism, and conducted research that benefited the careers of individual researchers, or even science at large, but brought no tangible benefit to the communities struggling with significant health disparities," (Simonds & Christopher, 2013). In this description, they are talking specifically about research done on subjects related to the health of Indigenous communities, but this can be applied to an even broader scope. By neglecting to acknowledge how history has affected Indigenous groups and not making efforts to understand their culture and beliefs, researchers have failed to help indigenous communities, as they may have suggested they were doing. In addition, sometimes their research has purposefully used indigenous people to gain their knowledge, while not giving them anything in return (Simonds & Christopher, 2013).

There are some key ways in which researchers can combat this power imbalance that exists in many research projects. The first aspect of this is, as stated above, understanding the history of colonization and current worldviews, and then acknowledging how it may affect an Indigenous group. A researcher must also honor an Indigenous community's voice by making them an active participant in the research process. Researching this way is described as decolonizing research, which is a "process for conducting research with Indigenous communities that places Indigenous voices and epistemologies in the center of the research process," (Simonds & Christopher, 2013). As such, tribal leaders and participants must have a say in what they consider to be research and verify that the results of this research are accurate to their beliefs, history, and

culture (Kelley et al., 2013). This requires transparency between the researcher and those being researched at every step of the process. One way of better achieving ethical research with Indigenous groups is to incorporate indigenous research methods.

The difference between traditional Western research methods and Indigenous methods is in its purpose; "research done in collaboration with Indigenous Peoples cannot only reveal knowledge [as in many Western methods], but also decolonize, rebalance power, and provide healing" (Drawson et al., 2017). Indigenous research prioritized community involvement in order to achieve the aforementioned purposes. This is because "lack of community involvement resulted in data that were unusable by communities. Unfamiliarity with and failure to prioritize cultural conceptualizations by the research community has resulted in detrimental practices associated with the acquisition, use, and interpretation of knowledge provided by Indigenous communities," (Drawson et al., 2017). There are many Indigenous research methods that center on community involvement as well as Indigenous culture in order to combat these issues. While different tribes have more specific research methods that they may follow, there are some common Indigenous approaches that focus on centering Indigenous voices rather than Western ideas.

One common theme is storytelling. Storytelling is an important aspect of many communities. Methods that involve storytelling let Indigenous people orally tell their answers. This engages community members and leaves room for more open-ended answers that a researcher may not know originally and would potentially leave out if a questionnaire was provided instead. This also gives control and power to the participant, as they are able to share their own history, ideas, and beliefs. In a conversational research method, the participant also has the ability to guide the conversation in addition to utilizing storytelling. A researcher in this case can work with the participants to make conclusions (Drawson et al., 2017).

Another common theme is Community Based Participatory Research (CBPR). Christine Stanton describes the values of CBPR in her article on decolonizing Community-Based Participatory Research: "scholars should recognize and value the community as a partner in the process, research should be comprehensively collaborative, and results should benefit all partners through continuous action and clear applications," (Stanton, 2014). As seen in this quote, CBPR aims to solve some of the major concerns when it comes to research conducted on Indigenous groups. CBPR focuses on creating a relationship with the communities they are researching. while prioritizing the needs of the community. In this form of research, the community being researched controls all aspects of the research, including having a say in making decisions as it relates to the

research process and the outcome of said research (Drawson et al., 2017). While this is a common theme amongst Indigenous research methods, there are also some tribe-specific research methods.

One example of tribe-specific research is Kaupapa Māori research. Kaupapa Māori research was established as "Māori academics began to challenge the way that certain knowledge was established as legitimate and the way that other knowledge, like Māori knowledge, was not viewed as legitimate; they also challenged the exploitative nature of much research on Māori," (Walker et al., 2006). The goal of Kaupapa Māori research is to establish Māori involvement at every step of the research process. Another goal is to reclaim Māori culture, beliefs, and knowledge as a powerful and valuable tool. Much research on Māori done by Westerners has been exploitative and not honored Māori culture, but rather taken away from it. Kaupapa Māori research centers Māori voices, and as such prefers a Māori researcher, though some "argue that Pākehā (non-Māori) can participate in Kaupapa Māori research, so long as they do not define, control, or dictate the research," (Walker et al., 2006). The most important aspect is that culture is valued, respected, and understood, and the Māori worldview is recognized. In addition, the data collected is deemed "under collective guardianship" of those being researched, and as such Māori decide where this data may go and collaborate with the researcher to decide how the results and conclusions should be represented (Walker et al., 2006). This type of research is vital to ensuring that ethical research is performed with Māori partnerships, and results of said research are relevant and useful to Māori.

In summary, research done in the past has enforced Western ideologies and further oppressed Indigenous communities by failing to acknowledge how colonization has affected those communities and not including indigenous wants, beliefs, and cultural values. Ultimately, this has led to many research projects being unusable to those Indigenous communities. Research conducted with Indigenous groups should instead involve Indigenous groups at every step of the process in order to decolonize the research. By creating a strong relationship and honoring Indigenous research methods, as well as acknowledging historical and present-day biases, research can be conducted in such a way that benefits Indigenous groups.

Quantitative research uses numerical data to explain some theory or test a hypothesis (Suphat Sukamolson, 2007). Sometimes this numerical data is readily available, as in the data is numerical in nature, such as looking at how many people live in a certain area, what the average age is of a group of people, how many students pass a course on average, and other such inquiries. This does not completely limit quantitative research, however. Sometimes researchers need to quantize data in order to get numerical results. For example, a survey with preset options could be made to evaluate a group's feelings about a topic. A quantitative researcher assumes a rigid view of the world and "focuses on measuring social reality," (Suphat Sukamolson, 2007). They assume that there is a correct answer to uncover. As such, the researcher is more detached from the participants.

Some of the advantages of quantitative research are that results let the researcher draw conclusions on large groups of people. This allows them to deduce common trends and attitudes about a topic among people, which then allows them to easily compare between groups or people since numerical data may be simpler to analyze (Suphat Sukamolson, 2007). However, there are also some drawbacks to quantitative research. While it is good for gaining general ideas, quantitative research is not good at gaining an in-depth idea of people's perceptions and feelings about a topic. Quantitative research also works best in instances where there are not a lot of variables to measure, but if the issue being researched is complex, a researcher may not be able to identify all of the unknown variables. In addition, the researcher in quantitative research is supposed to remain as detached from the participants and research as possible, however, "historical research has shown that what is studies and what findings are produced are influenced by the beliefs of the people doing the research and the political/social climate at the time the research is done," (Suphat Sukamolson, 2007). Since a researcher is inherently involved in the research by conducting it, it would be extremely likely that their own views do not affect the results obtained.

Qualitative research is different from quantitative research in that the researcher uses non-numerical data to gain a deeper understanding of the topic they are researching (Suphat Sukamolson, 2007). Qualitative research is conducted through analyzing different forms of existing content, conducting interviews with the people being researched, and looking at case studies of similar topics (Jackson et al., 2007). Quantitative research focuses on discovering knowledge and gaining a deep understanding.

The advantage of qualitative research is that there is room for open-ended and in-depth conclusions from interviews with a variety of people. The researcher is able to get to know a culture and take an active role in it, which encourages a deeper understanding. However, results from this type of research are harder to generalize and usually involve fewer participants than a quantitative research project. In addition, quantitative research runs the risk of interpretations being "iterations of the researcher's own belief system," (Jackson et al., 2007). The researcher, while directly affecting the participants and research, must attempt to remain objective in their research while conducting their research to leave their own personal biases out of the results. A way to measure the trustworthiness of qualitative research is to make sure the participants also feel the results are true, and that peer reviewing is conducted to minimize researcher bias.

While both methods have their advantages and disadvantages, they have been brought together to form "mixed-method" research strategies. Courtney McKim of the University of Wyoming describes this method in her article which looks at the value of this method of research as it relates to graduate student projects. She states, "[a] mixed methods approach gains a deeper, broader understanding of the phenomenon than studies that do not utilize both a quantitative and qualitative approach," (2017). The reason for using both methods according to McKim is that it addresses and solves some of the major concerns with using just one method. This is because by using both methods a reader researcher is able to gain both a broad and in-depth understanding of their topic, and also gain more certainty in their results. In addition, a reader may have more confidence in the results since they are derived both numerically and from more subjective approaches. The biggest drawback to conducting this type of research is that it can be more time-consuming and expensive for a researcher (McKim, 2017).

Overall, both types of research have advantages in different areas of research. They have different philosophies behind them, quantitative research taking a more realistic and detached approach, while qualitative research is very involved and looks to discover knowledge about a topic. They both have their own disadvantages,however, these disadvantages can be subdued by using both in a mixed-methods approach.

GUIDELINES FOR ETHICAL RESEARCH INVOLVING INDIGENOUS GROUPS

Including Indigenous groups in research that pertains and/or directly affects them is important when conducting research; without their point of view, the research results and conclusions will often be one-sided and inaccurate. Along with this, research on a group of individuals should be done respectfully and ethically. The Australian Institute of Aboriginal and Torres Strait Islander Studies Canberra provides, and other sources

provide some key principles of ethical research (2003; Fitzpatrick et al., 2016; Riddell et al., 2017). Their recommendations include:

- accepting input/collaboration from an Indigenous group,
- informed consent is always required from individual and community (even if there is no direct fieldwork)
- research is continuous/ongoing, mutual understanding of the project and the allotment ability to accept or reject it
- Indigenous culture should be respected and given recognition, and
- research results should be accessible to them
- research is relevant and intentions of positive outcome

When collecting historical data and ideas, some common things that are important to keep in mind are such as the following: there is no universal history, history is not just chronologically happening, and history should be told through several perspectives and narratives (Tuhiwai-Smith, 2012). Following these ideas and guidelines is a start to ethical accurate research which will be conducted in our project.

RELEVANT CASE STUDIES

Globally, there is an increasing call to better frame research methodologies that engage Indigenous partners. While the mechanisms and implementation strategies to achieve this goal can vary significantly with each Indigenous group, the following case studies explore the successes and failures of Indigenous research outside of New Zealand.

CASE 1: ABORIGINAL PEOPLES AND BUSHFIRES

For many Indigenous groups, their land is a major source of their culture in addition to their well-being; however, their land is becoming increasingly threatened by natural disasters. The effects of climate change have resulted in devastating bushfires in Australia and have disproportionately impacted the Aboriginal people in New South Wales (NSW) and Victoria (Williamson et al., 2020).

Aboriginal people possess a variety of legal rights regarding their land compared to the general non-Indigenous population, yet the response of the government in emergency services and risk mitigation has continuously been insufficient for understanding or supporting their needs (Williamson et al., 2020) Following the Canberra bushfires in January 2003 and the Victorian Black Saturday bushfire in February 2009, the Australian government implemented the McLeod Inquiry, and later expanded it, as a commission to investigate both the causes and response to the bushfires in a variety of sectors

(Williamson et al., 2020). In the release of these reports in both 2003 and 2009, there is a very limited reference to Indigenous or Aboriginal peoples, with primary mention being about the land's history rather than the current Aboriginal residents (Williamson et al., 2020). Whether or not the voices of Aboriginal peoples were purposefully excluded, the lack of recognition or assistance from the government heightens the trauma faced by the Aboriginal community and further marginalizes a group that has every right to be included in this land management research.

While the government's role in this case study is neglecting a specific population in research to better prevent and support groups that faced destruction from the bushfires, it should be noted that the authors do not adequately consult or work alongside the Aboriginal people while voicing their support and acknowledging their struggles. Data regarding population densities of Aboriginal people was drawn and scaled from the 2016 census, while the geography of burned areas was taken from the Emergency Spatial Information Network Australia and NSW Parks and Wildlife Service (Williamson et al., 2020). Without sufficient Aboriginal voices to confirm, deny, or otherwise discuss the complexities of their situation, the authors create the opportunity for this group to be further marginalized. Although the authors' intention may be good, the lack of commentary, interviews, or other data directly from Aboriginal people continues to be a traumatic issue.

CASE 2: LITTLE SASKATCHEWAN FIRST NATION AND FLOOD DISPLACEMENT

Although natural disasters are usually considered highly unexpected and destructive, man-made disasters can cause equivalent hardship to Indigenous populations. The Little Saskatchewan First Nation (LSFN) in Manitoba, Canada, had much of their land and homes destroyed due to flooding from government officials diverting water along the Assiniboine River (Martin et al., 2017).

This situation was featured in a report that highlighted the approach of "two-eyed seeing," or a framework that considers the perspectives and knowledge of both parties, "one-eye" which is the Indigenous community, as well as the "other-eye" which is the decision-makers who are usually not Indigenous (Martin et al., 2017). This system allows everyone to contribute something and should invoke some self-reflection as details that may have been previously overlooked will come to light and alter the decision-making, hopefully for the benefit of both parties (Martin et al., 2017). Since the decision to divert the river was not discussed with the LSFN community, the government did not foresee the detrimental impact on the environment and the well-being of Indigenous people who

lived there. This issue was exacerbated by the fact that the government continued to not seek the input of the LSFN community after evacuation, thus leading to increased emotional and physical turmoil of the group.

As a way to better understand and reconcile the situation, the authorship collected data through face-to-face interviews with several members of the LSFN community, with the goal of working with the group rather than working on the group (Martin et al., 2017). The direct contact with the LSFN individuals allowed for a more comprehensive understanding and finite goals to be developed, starting with incorporating two-eyed seeing into policy decisions in order to prevent a similar occurrence from ever happening again (Martin et al., 2017). While it may be intensive to observe the problem from a variety of perspectives, this diligence is necessary for the benefit of both parties and to begin to undo the continuing effects of colonialism.

CASE 3: HAVASUPAI TRIBE AND MEDICAL RESEARCH

Many scientific and medical advancements have come from sacrifices, however, the continued exploitation of Indigenous communities in the name of science or for an arbitrary greater good has prolonged the cycle of trauma and distrust between communities and researchers. Take for example the case of Henrietta Lacks, whose cells were taken and continue to be used for scientific research without her or her family's consent, even decades after her passing (Ahluwalia, 2020). More recently the Havasupai Tribe, a Native American tribe in Arizona, experienced emotional distress within the tribe following research conducted on their blood without their informed consent (Lynch et al., 2019).

CBPR and informed consent are two essential components for working with another group, Indigenous or otherwise. As previously stated, CBPR is an approach that aims to include the community in the research being conducted for the benefit of both parties and includes informed consent which is receiving explicit approval from the community that they understand what research is being conducted and that they agree to participate (Lynch et al., 2019). The issue with the Havasupai Tribe came when they approached Arizona State University (ASU) to determine why the incidence of diabetes in their community was increasing, and ASU instead utilized the tribe's blood samples for a variety of other projects, including to study the causes of mental illnesses (Sterling, 2011). While ASU did have signatures from the tribe indicating broad consent to studies beyond the genetic marker for diabetes, many of the members of the tribe did not have the education nor the language comprehension to understand what they were agreeing to, thus ASU did not have informed consent (Sterling, 2011).

As a result of ASU's negligence, the Havasupai people suffered emotional trauma and significantly diminished the group's trust in outsiders (Sterling, 2011). Although the Havasupai tribe did go to ASU seeking help, ASU violated their rights by continuing to use the tribe's blood samples for other studies without adequately informing them. This situation could have been wholly avoided had ASU been diligent in asking and explaining the studies they would like to conduct to the tribe and respected the tribe's decision to not participate or prevent them from participating in a study they did not fully understand.

SUMMARY

This review revealed some critical points that were strongly considered as we began our project. To start, we acknowledge that the history of colonization in Aotearoa New Zealand has been fraught with dominant narratives and power dynamics designed to erase Māori identity. Secondly, we analyzed research methods and guidelines that identified prospective frameworks when working with Indigenous communities. Finally, relevant case studies provided examples of outcomes from research that will help develop better guidance for work with Indigenous partners. This project coincides with the United Nations' Sustainable Development Goals of peace, justice, and strong institutions, quality education, and reducing inequalities since it is directly influenced by Indigenous groups and is for improvement of future research. Our research and recommendations at the conclusion of this project strongly contribute to achieving these goals.

METHODOLOGY

In this chapter, we detail how we accomplished our goal of creating a digital resource that guides ethical research with Māori partnerships. To achieve this goal, we identified three objectives:

1. Understand Māori perspectives on research collaboration
2. Understand the needs of the researcher
3. Identify ethical research strategies and practices

The flowchart, shown in Figure 2 below, outlines our goal, objectives, and methodology plan. In addition to the methods listed, we used background research as supplemental research to further help achieve our goal.
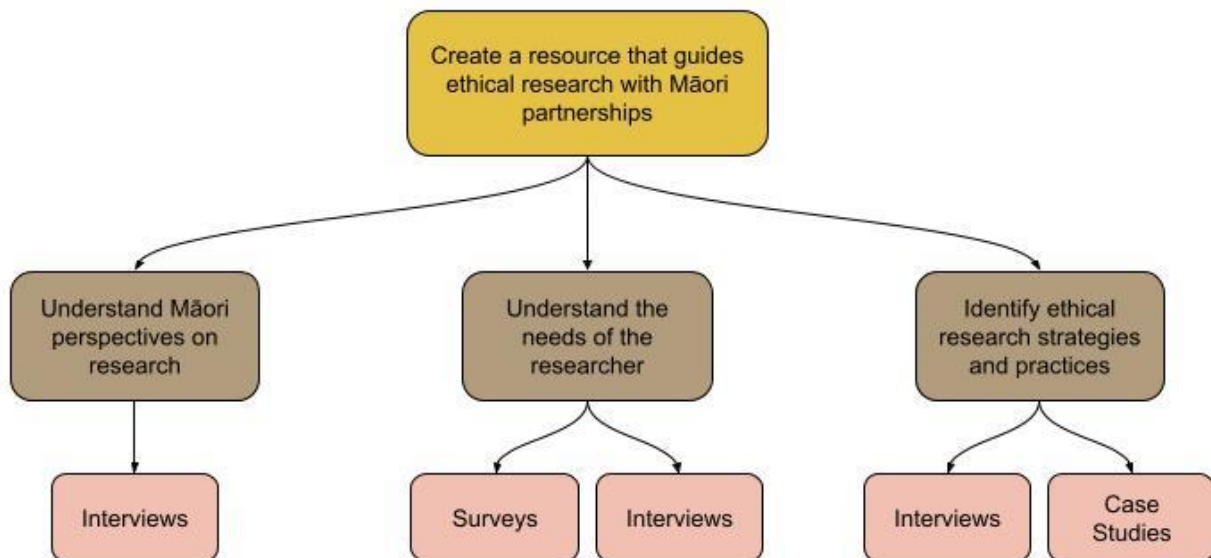
Figure 2 Flow chart depicting our project goal, objectives, and methodologies

UNDERSTAND MĀORI PERSPECTIVES ON RESEARCH COLLABORATION

A background on Māori experiences involved with research projects in Aotearoa helped develop our digital resource and provided a starting point for discussion with Māori participants in our study. We spoke to Māori sponsors of past and current IQP projects as well as Māori and Pākehā scholars from Victoria University in Wellington involved in the department of Māori Studies. These interviews were conducted over Zoom using a semi-structured interview format to guide the process, while allowing us to adjust according to the natural progression of the conversation.

We tailored our questions to each person we talked to after completing initial research on them in order to gather information on each person's individual expertise. From the interviews with Māori sponsors we were able to get a better idea of what past WPI students had done successfully, and what concerns these sponsors had about working with WPI students, and their preparedness. We also gained insight into what ethical research should look like in these partnerships. From scholars at Victoria University of Wellington and the University of Canterbury, we were able to learn about these individuals' research projects as well as their personal experiences on research collaboration. Appendix A and B provide a sample set of these interview questions. After obtaining consent from all parties involved, many of these interviews were recorded, and the transcripts of the conversations were coded to derive common themes among experiences which played a significant role in the construction of our guidelines to our digital resource.

UNDERSTAND THE NEEDS OF THE RESEARCHER

In order to best orient ourselves in the project, we needed the perspective of outsider interactions with Indigenous communities. As a result, our primary focus was on students who have completed their research in and with Indigenous communities, faculty who have advised projects working with Indigenous communities, and faculty whose own research engages with Indigenous peoples.

We began by identifying students who have completed IQP projects working with an Indigenous community by using various filters and keyword searches on the virtual WPI archives website. Once identified, we sent an anonymous web-based survey on Qualtrics via email to inquire about their partnerships with the Indigenous community. Appendix C provides the survey questions included. The questions were a combination of multiple-choice and open-ended questions that aimed to highlight challenges or processes the student teams experienced throughout their research and partnerships with Indigenous community members. At the conclusion of the survey, there was an optional component where students could indicate if they would be willing to participating in an interview with the team to share more in-depth about their experiences and leave their email so we could contact them. Follow-up interviews conducted with students were held over Zoom in a semi-structured format in order to guide the conversation to highlight significant details of the student's experience (Ward, 2020, p. 43). A sample of the questions we asked are listed in Appendix D.

In a similar manner, we contacted faculty that have advised student projects that were in collaboration with Indigenous communities. Appendix E provides the anonymous

web based Qualtrics survey that was distributed in a similar format to the student survey but geared more to the faculty perspective of how the experience went and if intervention was necessary on their part. A convenience sample was used for survey distribution, where advisors were found based on results gathered from searching the WPI archives (Ward, 2020, pp. 78–79). We included an optional section where faculty could indicate if they would like to be contacted to participate in an interview to share more about their experiences, where faculty could provide their email address. Interviews conducted with advisors were also held over Zoom in a semi-structured format. The questions used were not identical to the survey questions and were generated to spark discussion about their personal experiences advising projects where students interacted with Indigenous communities. A sample of the questions we asked are listed in Appendix F.

IDENTIFY ETHICAL RESEARCH STRATEGIES AND PRACTICES FOR A RESOURCE

Our third and final objective was to identify, organize, and present the ethical research strategies and practices that would play a significant role in the creation of an informative digital resource. We used what we learned from these researchers previously described to create guidelines and best practices.

We distilled strategies from our interviews in objectives 1 and 2, as well as examined and highlighted case studies that used novel research strategies and rules to engage across cultures. We drew from current events around the world, including social justice movements, which have generated considerable recommendations for engaging respectfully across diverse perspectives and cultures.

In order to create an optimal resource, we studied sample websites that currently serve as guides for students and researchers, in order to identify formatting and access options. In addition to this, we examined what media would be most effective to present our conclusions, and that is how we chose to present the website. We also compared several different website building options to find one that was simple enough to learn, but also elegant enough to present our conclusions in a professional way. We chose to use WordPress to generate our digital resource. This data was compiled into a resource of strategies and practices that build respect and amplify Māori voices.

RESULTS AND DISCUSSION

The methodology previously described was utilized to produce the data outlined below. Our findings and results are discussed at length and significantly contributed to the design and content structure of our digital resource.

CONCEPTS AND KEY WORDS THAT INFORM RESPONSIBLE RESEARCH

Through our research and interviews, we have identified some key concepts to convey in the digital resource. Below we have outlined the most important findings from each main theme.

CULTURE AND HISTORY

Even in projects that are not directly related to Māori communities, since Aotearoa is a bicultural country, Māori culture and history need to be acknowledged and understood so that projects can be helpful to all members of the community, no matter what their identity. The director of the New Zealand site, M. Elmes, spoke on the importance of this, stating,

> *The fact that New Zealand is a bicultural country and that there is a treaty that recognizes Māori, Māori rights, and Māori participation in governance is huge. It means that even for our projects that don't seem to be directly Māori related, our students need to be aware of Māori values and influences. Because New Zealand is a bicultural country and Māori are partners by treaty, their culture and values need to be understood as context for any project. Whether the project is Māori or non-Māori related, I don't think we prepare our students with sufficient understanding of Māori history, language, and culture. For example, we do not talk much about the Treaty of Waitangi which strikes me as basic knowledge for all our students to learn when working on any project in New Zealand. (personal communication, February 10, 2022).*

Here, the interviewee reinforces the idea that history is an imperative part of any project, and affects how students should approach their projects. M. Elmes specifically names the Treaty of Waitangi as being a key piece of background, which is the treaty that is supposed to make Māori and Pākehā equal. However, there are some issues surrounding it that are still being discussed today (R. Smith, personal communication, February 14, 2022).

Respecting and being open-minded to alternative cultures is also key when working with other communities, and WPI advisors have stressed the importance of being accepting of new ways of thinking, even if it is something that the student may not necessarily agree with (T. Balistrieri, personal communication, January 27, 2022). There is

a long history of Māori culture being deemed less important than western culture. R. Smith shared a comparison of how the Māori story of the taniwha is treated as "wrong," versus the widely accepted western mythology of the dragon:

One way that I try to gauge whether people are ready for Māori stories is to talk about a creature called taniwha. And taniwha is a mythological creature that has caused landforms to take the shape that they have. So we have a fault line named after a taniwha that caused these earthquakes and that taniwha is called Moho newi, that's the name of the fault line. Then usually what happens is when I introduce taniwha I look for reactions and there's a couple of reactions that happen where people freeze, so they're trying not to show that they have any response. And then there's others, they kind of look down and go okay, so I won't have to listen to this for the next 5 minutes because it's rubbish. And these are the kind of reactions that are negative. Positive ones come, take a little time to think about it.

The reason I'm bringing up that is because actually, dragons play a pretty strong role in New Zealand. And these are English stories that have come from another side of the earth up to us here in New Zealand. It's to such an extent that we have something called the Saint George's Cross on our flag. And the Saint George's cross is to acknowledge something that a person named Saint George did. And what did he do? He killed a dragon. So here on one of the most very important symbols that we have is a history of a Dragon Slayer. But Māori aren't able to talk about taniwha.

And so there's one rule for one group and another rule for another group. The one rule in terms of Saint George comes from England, where taniwha comes from New Zealand. And so if we were accommodating mythological creatures, surely we should be accommodating New Zealand creatures as opposed to English creatures.

The hegemony is that we're not even critically aware of the symbols that we have as New Zealanders, and then you know, we have to think about what's happening here that some stories and some legions and some myths can go uncriticized and it can go without being hegemonic. As opposed to our native stories, is it because native stories only represent 20% of the population, where mainstream stories represent 80% of the population? So is that the democratic process producing hegemony? Can that not be? Can we not be critically aware because it strikes at the majority as opposed to even being fair and equitable?

Then, in terms of taking on Māori stories, because within Māori stories, this is the framework about how Māori think. And rather than sometimes arriving at the metaphor and investigating the metaphor for a reality, that would obviously contradict the meaning of metaphor.

Shouldn't we be picking up metaphors and running with that in thinking,
okay, so what's meant by this? (personal communication, February 14, 2022).

R. Smtih shows here an example of when Māori stories are treated as incorrect, even though similar western mythology is accepted and even celebrated on a flag. Students can combat this common disregard for Māori culture by researching it before traveling to Aotearoa, and by keeping an open mind to the culture and stories they hear during interviews and while they are there.

LANGUAGE

Understanding basic Māori words helps not only when conducting research, but also when communicating with Māori community members. Using Māori words instead of English interpretations of them shows respect for Māori frameworks. For example, while a "hapū" has the English translation of a "small tribe," this is not necessarily a direct translation. A hapū is a part of how Māori communities are structured, and therefore attached to Māori worldviews. Using these Māori words requires students to look into the true meaning of these words, and then by using them they can show a deeper understanding and respect for Māori culture. By using Te Reo Māori, students are recognizing that Māori structures are unique to Māori cultures, and therefore the wording they use should reflect that.

Throughout our interviews with sponsors from Aotearoa, we heard repeatedly that using Māori greetings was welcomed and showed an open-mindedness to Māori concepts (O.Mercier, personal communication, February 15, 2022; R. Smith, personal communication, February 14, 2022). We've identified two greetings that students should consider using: "Kia Ora," a common greeting throughout New Zealand, and the traditional Māori greetings of a mihi or pepeha, which are more in-depth greetings that connect the speaker to their home, land, and history. The mihi is not as common throughout New Zealand, one sponsor we spoke to, I. Gunn stated, "many New Zealanders don't know their mihi and can't do it, but when you are with the Māori people and you do that, they embrace you, and even though that you don't pronounce it 100%, perhaps only 25%, they are still pleased that you've done that. And you are able to open a door many kiwis can't," (personal communication, February 14, 2022). Students should attempt to share their mihi when introducing themselves to Māori, even if it is not perfect the first time they say it. A Māori sponsor, R. Smith, shared that, "[the mihi] seems a little bit about the effort that people make… and so it seems that the framework that you're using in the mihi is acknowledging the Māori framework," (personal communication, February 14, 2022). Here the sponsor shared that by using the mihi greeting, the student shows the effort they've put into learning Māori frameworks. This could show a higher

level of respect for Māori frameworks, and a willingness to learn more frameworks in the future.

REFLECTION

Throughout all our interviews, almost every interviewee stressed the need for constant reflection at multiple stages of the project: before they begin their project, and during the research process. Before embarking on their projects, students should reflect on what they know about the community they are working with, including any assumptions they may have. Through this, they can identify areas they need to research more to have a well-rounded background. Students should always hold an attitude of having to continuously learn, which was the advice given to us by one of the New Zealand Scholars, K. Dew (personal communication, January 26, 2022). Through one of our interviews with a Māori scholar and past sponsor, they stressed the importance of a student knowing and acknowledging their own histories (M. Bargh, personal communication, January 20, 2022). This means acknowledging whose Indigenous land they live on, their ancestors' involvement in colonialism, and their current awareness of Indigenous communities' struggles. M. Bargh emphasized how Māori communities have "long memories," meaning to this day, they reflect on what their ancestors have done and acknowledge it, even if the ancestor acted in a way that you may disagree with. Also, as primarily American students, it is vital to understand what it means to be an American on an international scale, including how Māori and Pākehā research participants may view American researchers. By understanding their positionality in the research project, they can approach it more responsibly.

Students also have to reflect on their research process throughout their projects by constantly revising the questions they use for interviews, surveys, and in focus groups, which are common data collection processes for IQP students. Students should create a question set that is relevant to the participant, and respectful of their culture. This includes researching the participant prior to communication to ensure that questions are relevant to the participant, and aren't questions they could find the answer to online or in text. We've found that reflecting on our questions and doing background research on participants, as well as being careful with word choice and questions, to be useful in our own research. Other past students have also stressed the importance of constantly reviewing questions and changing them as necessary (Students 1-3, personal communication, February 4, 2022). Another way in which students can reflect on their research process is to compare their research strategies to those commonly used in Māori research practices, Kaupapa Māori. Although the students working in Aotearoa are most likely not of Māori descent, and therefore cannot conduct Kaupapa Māori in its entirety,

some key concepts they can use are incorporating Māori knowledge whenever possible, making sure they are acting in Māori communities best interests, and ensuring that the results of the project are useful to Māori communities (Walker et al., 2006).

CRITICAL KEYWORDS FOR RESPONSIBLE IQP RESEARCH

Through our research, we've identified some keywords that must be discussed when identifying how to conduct responsible IQP research: discomfort, ethical listening, and accountability.

DISCOMFORT

As with any research project conducted in partnership with a different culture, it is a learning process, and often can be uncomfortable for a student. A Pākehā scholar from New Zealand, A. Thomas, stressed the importance of sitting in this discomfort and shared the idea of Pākehā Paralysis, which is when a non-Māori person feels frozen in a situation, they aren't familiar with, during a Māori ceremony for example (personal communication, January 20, 2022). We want to encourage students to sit in this discomfort, reflect on why it may feel uncomfortable, and identify what they need to learn more about to become more comfortable in such situations. An example of this is feeling uncomfortable when first sharing ones' mihi. We found through our experience that before we first shared our mihis we were nervous about pronouncing words wrong or sharing the mihi incorrectly. However, attempting to share a mihi is impactful and important to Māori participants, even if it is not done completely correctly. Students should strive to continuously learn from discomforts, be open to the feedback they receive, and be able to apologize and accept when they may do something "incorrectly."

ETHICAL LISTENING

Through truly listening to Māori participants, students can help stop the historical cycle of exploitation of Indigenous communities internationally, which can make interactions feel extractive rather than genuine (Maria Bargh, personal communication, January 20, 2022). Students must understand this historical context of exploitation before creating question sets and interviewing Māori community members to ensure they are acting in a respectful manner. K. Dew suggested starting meetings with Māori by clarifying they are there to listen to make the participant feel more comfortable (personal communication, January 26, 2022). Some listening issues arise from students entering IQP projects under the assumption that they are there to help a community without acknowledging that the community member they are contacting is also helping them by sharing their knowledge and giving their time. Students can respect this by using their time with community

members to truly listen to what they have to say, and respect how they feel comfortable sharing their knowledge. One WPI professor, T. Balistrieri, shared a story about accepting different ways of sharing knowledge in an interview, stating:

> I want to know how you fired the pot. How did you get the black color?" And Kimberly, the Tewa potter, would give you one more opportunity to listen. She might say, 'How I fired the pot is something we can discuss later. But first please let me tell you about Grandmother Clay. Because now we gather Grandmother Clay. The Clay that my daughter will use. It is this multi-generational thinking, sustainable thinking, that is important. We cherish The Mother and the actual Clay gathered by my mom and all the prayers and all the history." If you went on to say, "We don't care about that Kimberly, we just want to know how you carved the turtle, why you carved a turtle, what tools do you use, it is fired like the other pots?" See what I mean? And so, you can write a paper on how the Tewa makes a turtle from clay. But if you choose to ask an open-ended question and just listen to the Tewa potter ... then a new world opens to you. That simple act of respect indicates that you are willing to be in a relationship and you are willing to learn. If you don't listen. If instead you choose to go only where you wish, then someone like Kimberly may stop talking. No IQP Team may ever be welcomed back. Etc? (personal communication, January 27, 2022).

In this example, we see the importance of listening to the participant, even if they are sharing information that you didn't expect, because that is the information that's important to the participant, and therefore should be equally as important to the student researching them. Storytelling is a key component in sharing knowledge to many Indigenous cultures, and by taking the time to listen to what the participant chooses to share, the student can learn more about that culture. In STEM fields, storytelling may be something the students aren't used to as there are usually direct and conclusive answers to questions. For this type of work, students need to be open to listening to stories rather than getting direct answers. These stories have cultural significance to Indigenous communities and are a part of how they see the world and how they make decisions. These stories can inform students about what subjects are important to the Indigenous community, and how they feel about certain topics. Students can then incorporate the knowledge they learn into their projects, which will make their projects more relevant to the communities they are trying to help. A. Thomas spoke extensively on the subject of listening and how it may be a new concept for some students. They told us,

> "As a white person... I never had reason to think that my worldview, my understanding of the world around me, wasn't everyone's worldview until I was deep into my university studies and that was like a profound thing to suddenly understand that not everyone understood the world in the same way as me... what does that say about white society? That I get to be 19-20 years old before I understand that. I think that's kind of emblematic of a broader

kind of culture of not listening and kind of not having a willingness to hear about experiences that are different to our own," (personal communication, January 20, 2022).

They shared that this concept of listening to other people's views on the world, especially those from different cultural backgrounds, is something that people may not start to do until later in life, they may not even realize that they haven't been listening in the past. A student's own history and experiences may also affect their research project, especially if they have grown up in a very different community than the one they're working with.

A. Thomas also shared an example of how a cultural history of not listening has affected Māori communities:

"It's been pretty much normal life in lots of ways for those of us that have the privilege of living in a particular way. Māori communities are saying "I'm giving all this advice about the pandemic response" and I think it was in November or December 50% of covid cases were Māori, and Māori are 16% of the population. A very high proportion of people who have died are Māori - it's Māori and Pasifika communities that have been most affected. And so, the pandemic response was an example of not listening, despite there being very loud voices saying "Can you just listen to us? Why did you not roll out the vaccination program to Māori first, because we know for all these factors Māori are at risk" And why are you not starting in these remote, largely Māori communities with the vaccination? So yeah, I think the idea of listening is a really important one and that's partly about being a bit more humble in our Pākehā culture and being open to the idea that we don't know," (personal communication, January 20, 2022).

Here, we were provided a concrete example of how the Māori community hasn't been listened to, and how this has affected their health as a community, which has hurt the trust between Māori and non-Māori people. Along similar lines, another scholar from New Zealand also talked about how the COVID pandemic response showed a lack of listening to the Māori community's needs. They shared:

In the New Zealand situation when they did a staging of introducing vaccines for people, they did it based on age so, in the first stage, it was 60 and over. So who were the targets of vaccination, so the entire population, but for the Māori population, who have a life expectancy lower than the rest of the population that sort of in a sense exacerbates inequality because you're getting fewer Māori getting it, and with your Māori population as a younger population they got access to vaccines much later. So that sort of so covid itself in a sense has exacerbated healthcare inequalities but also help us see how that decision making plays out when it's based on population thinking, rather than thinking of different populations and the different configurations." (K. Dew, personal communication January 26, 2022).

In Aotearoa, positive changes are being implemented, such as a Māori health agency, to combat inequities like the ones shared above. However, even with positive changes, the long history of Westerners taking advantage of and not listening to Indigenous communities hurts the trust between these two groups. This may make some Māori community members more hesitant to participate in non-Māori in research projects, so students must make every effort to create responsible research partnerships. Students can do this by researching the history of the community and listening to and incorporating the viewpoints of Māori participants.

ACCOUNTABILITY

When non-Indigenous people are working with Indigenous communities, it's important that the researcher isn't drowning out Indigenous Peoples' voices. Thus, a researcher must make sure they're holding themselves accountable to the people they're working with and the communities they're representing. All work that a student conducts in New Zealand will affect Māori communities in some way, even if indirectly, and students must always be thinking about how the project affects those communities and what they can learn from Māori knowledge to better inform their projects.

Another important aspect of accountability is understanding that there is a history of Māori communities being lied to or misled for the benefit of Western settlers. An example of this is the Treaty of Waitangi. The Treaty of Waitangi is a founding document that was supposed to give certain rights to Māori, create a definitive partnership between Pākehā and Māori, and allowed Pākehā to stay on Māori land (R. Smith, personal communication, February 14, 2022; I.Gunn, personal communication, February 14, 2022). However, Māori were misled by this document as the British interpreted it as the Māori relinquishing all of their land to them (M. Elmes, personal communication, February 14, 2022). In addition, since the treaty was created, Pākehā have failed to "deliver on those rights", and Māori today are still seeking retribution for grievances dating back to 1840 (R. Smith, personal communication, February 14, 2022; I.Gunn, personal communication, February 14, 2022). In regards to students on their IQP, they must have an understanding of this history. By knowing this history, they can hold their projects accountable by making sure they are not misrepresenting the project to Māori communities. They also must make sure they respect the partnership aspect of the Treaty of Waitangi; the project should be beneficial to all members of the community and should take into account Māori culture no matter what the project scope may be.

All work that a student conducts in Aotearoa will affect Māori communities in some way, even if indirectly. Students must always be thinking about how it affects the community, and what they can learn from Māori knowledge to better inform their

projects (Student 4, personal communication, February 3, 2022). One interviewee shared a theoretical scenario in which a non-Māori researcher would be ignoring Māori knowledge, stating,

> [there are] people who still think that there is only one way of approaching what knowledge is; only one type of knowledge that we can produce. 'I want to look at the volcano so I should be allowed to walk wherever I want, take whatever I want.' There's always going to be those people and, and so I think it's about kind of understanding who you're speaking to and kind of engaging with them." (A. Thomas, personal communication, January 20, 2022).

A. Thomas was stressing the importance of understanding whether the volcano has cultural significance to an Indigenous community and treating that volcano with the same respect that the community would. Students can hold themselves accountable by continuously reflecting on whether or not their research is respecting Māori culture.

To do this, students must realize that their IQP is real to the people and communities they are working with, not just a paper to be submitted (T. Balistrieri, personal communication, January 27, 2022). Therefore, it is essential to include Māori voices in any project that may affect Māori communities. However, students must be meaningful when reaching out to Māori individuals and be aware that they are busy individuals who may not have time to sit down with a group of students. Before reaching out to community members, or if they are unavailable, students should look for published work by Māori individuals to further inform themselves before reaching out to community members.

CURRENT PREPARATION SYSTEM FOR THE IQP

The Interactive Qualifying Project (IQP) is a semester-long social science project spanning two separate phases: the preparation phase and the active research collection phase. The preparation phase occurs during the seven-week period prior to the term of the research collection phase and comprises ID2050 and PQP. ID2050 is a twice weekly class centered on developing the project proposal among project teams, which involves researching the background of the community, the problem, and the methods that are intended to be used once on site. PQP is a short supplemental class occurring once a week that focuses on refining the proposal and providing some cultural background. What is particularly interesting with both ID2050 and PQP is that the curriculum is highly dependent on the site locations and projects, meaning that between project centers and even instructors for the same site, the content conveyed to students can vary from year to year (I. Shockey, personal communication, February 11, 2022). While it may be difficult to create a single curriculum to cater to the various project types each year, it

remains true that no matter the project, the students will be interacting with local communities at their project site to some degree and therefore must have an understanding of the culture (T. Balistreri, personal communication, January 27, 2022).

As a primarily science and engineering focused institution, WPI utilizes the IQP to promote growth outside of one's comfort zone and expose students to problem solving in a real world context. The IQP is designed as a social and community-oriented project that all students must complete in order to earn their degrees. Since the student body is very diverse, everyone enters the IQP with different lived experiences and thus distinct amounts of background knowledge regarding the community that they will be working with and conducting social science projects in general. The preparation phase of IQP is designed to create a baseline of knowledge for the student groups so that they can work and understand the problem more cohesively. During ID2050, topics such as ethical research, accountability, and cultural context are discussed in relation to the projects. How much these topics are reviewed is up to the discretion of the professor and advisors. Therefore, some faculty discuss these topics at length with students while others are more confident in their students' ability to conduct responsible research from the start, and thus only briefly touch upon these topics before moving on. Additionally, advising faculty often do not have a connection to the site prior to advising projects in that area or community, thus information regarding the area's customs, language, and day to day activities relies primarily on communication from the center directors (M. Elmes. Personal communication. 10 Feb. 2022). Due to this, the experience of a student's preparation period prior to IQP can vary drastically. Fortunately, we do offer an on-site orientation which helps faculty and students become a bit more aware of the area and its culture. But I believe that there is more we can do.

There are many resources that students could utilize outside the classroom to improve their knowledge and further their understanding of Indigenous cultures including: research librarians, Digital WPI[2] which contains all previously completed IQPs, and educational videos or movies. Another resource is WPI's Global Lab, which offers some resources for working with various Indigenous communities. The page, *Working with Indigenous Communities*[3] was created by site director Mike Elmes several years ago to aid students in their IQP. This site in particular offers a broad overview of what it means to partner with various Indigenous groups that includes several statements, readings, and two videos. There are also specific tabs that provide information for partnering with particular Indigenous groups including Native Americans, Māori

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[2] digital.wpi.edu
[3] global-lab.wpi.edu/working-with-indigenous-communities/

individuals from Aotearoa New Zealand, and Indigenous Australians. The content on each of these linked pages varies significantly, and in most cases includes book titles or full-page reports that might be difficult for a student to digest fully, and a limited amount of audio or visual supplements. It is also unclear if these resources are utilized by students, especially if the importance of cultural awareness is not stressed in the classroom.

IMPORTANCE OF A DIGITAL RESOURCE FOR IQP PREPARATION

The concept of cultural preparation is especially significant when working with Indigenous groups, most of whom highly value long lasting relationships and trust within those partnerships (M. Bargh, personal communication, January 20, 2022; R. Smith, personal communication, February 14, 2022). Students lacking adequate understanding of the history and customs of the Indigenous group they are working with potentially jeopardize not only their project, but future relationships between WPI and Indigenous research partners. As stated by Māori scholar, M. Bargh, "Some Indigenous peoples may be a little bit offended about just being rung-up, to have information extracted out of them if there is no existing of long-term research relationship with them" (personal communication, January 20, 2022). Yet this is exactly what can occur when students are more focused on grades and end results than on the actual people and communities they are with. Without an advisor or sponsor advocating why cultural knowledge is so necessary, many students do not recognize how significant this knowledge is for forming relationships with the communities they are working with. Additionally, if students are not given resources on this topic, they are more likely to become overwhelmed about what is most important to learn and never digest the information. In either case, many students are not getting the information necessary to partake in respectful partnerships with Indigenous communities, which can have serious consequences. Although these are only student projects, the recommendations that come from them are highly regarded and could provide unintended consequences for the community. Thus, a recommendation for new infrastructure that will aid one sector of the community has the potential for creating environmental damage, depletion of resources, and tense relationships with other areas.

In addition to being culturally aware, many students should be introspective before working with any Indigenous group and reflect on their own history, values, and positionality in relation to their non-WPI partners. As previously stated, the IQP is a social science-based project designed to promote character growth and imitate the real world communities that students will impact with their engineering degrees. Thus, the subject of accountability becomes essential for ensuring the transactional and destructive research methods of the past do not play into current and future projects. While this

piece is much more individual and personal (Student 4, personal communication, February 3, 2022; Student 5, personal communication, January 26, 2022), it may not come about unless prompted during the preparatory phase; thus, is it not enough to expect students to fully inform themselves before actively engaging with an Indigenous group.

With all this information taken into consideration, we strived to create a digital platform that expresses the significance of being culturally aware while also providing useful resources that can be trusted and easily digested by both students and faculty to supplement their preparation phase of IQP. Additionally, a digital resource can be continuously updated and curated for a changing world, such as conducting research in a pandemic.

EXECUTION OF A DIGITAL RESOURCE

This section entails the construction and attributes we made in our digital resource, Just IQP Research. Essentially, this section will address how we delivered our findings; and since this is mainly for future WPI student use, delivering information was done with the intention that students will find it interesting and engaging. We did not anticipate or intend for our website to be a definitive list or outline for how to interact with all Māori and/or Indigenous people, but rather to be informative with a better understanding of the best practices and what is expected from the Māori community; a list would be irresponsible and counterproductive to the goal of this project. Each Indigenous community has its own unique values, culture, and ways of life; having a universal instruction manual is not possible and would lead to several cultural mishaps and even mental or environmental damage. This website pertains to the Māori community, and interviews from both Māori and Pākehā scholars in New Zealand have been collected. It is also important to acknowledge that research is always ongoing, and that this website is only just the start and tentative to change over time.

Through interviews with Māori sponsors, New Zealand scholars, WPI students, and advisors we have received and had carefully considered their feedback on ideas and major design aspects to include. The reasoning behind having multiple different types of sources and styles in our website has the intention of reaching students who learn on different platforms. Every student learns in different ways and comes in with different interest levels; if the website were to just be large amounts of text and reading, those who learn best by watching videos or through audio will not gain and absorb the information given out. It is also important to acknowledge that when it comes to learning about topic students are unfamiliar with, there tends to be a feeling of resistance and discomfort, especially WPI being STEM-driven. An interview with a Pākehā sponsor emphasized "one

of the key things you need to get across in your website is that they are individuals, and they have individual sort of points of view. You can't assume that one group will support the same as another" (I. Gunn, personal communication, February 14, 2022). Having this knowledge, we aimed to make it easier to reach these students; this includes sections and subsections that provide videos and/or infographics to supplement voluminous amounts of text. Additionally, we provided lists of resources that students can explore instead of long-winded. This creates a safe space for students to reach out to but also ensures there is no step-by-step guide that instructs how to interact with all Māori people.

HOME PAGE

In our website, our homepage, which is shown in Figures 3 and 4, begins with a description of our project, as well as a disclaimer that states that the purpose of this project is not to be a definitive list of exactly what to do when working with Indigenous communities, but rather a resource for students to learn more. The home page introduces the six aspirations of student research at the Aotearoa site, organized into areas of focus and keywords. These topics are important to be aware of and will help improve future relationships between WPI and the Māori community. The three main areas to focus on are language, culture & history, and reflection. The three main keywords identified that students should discuss and think about are ethical listening, discomfort, and accountability. The home page also provides a complete list of resources we put together, as well as an "about us" page that further describes this IQP and how the information on the website was gathered.
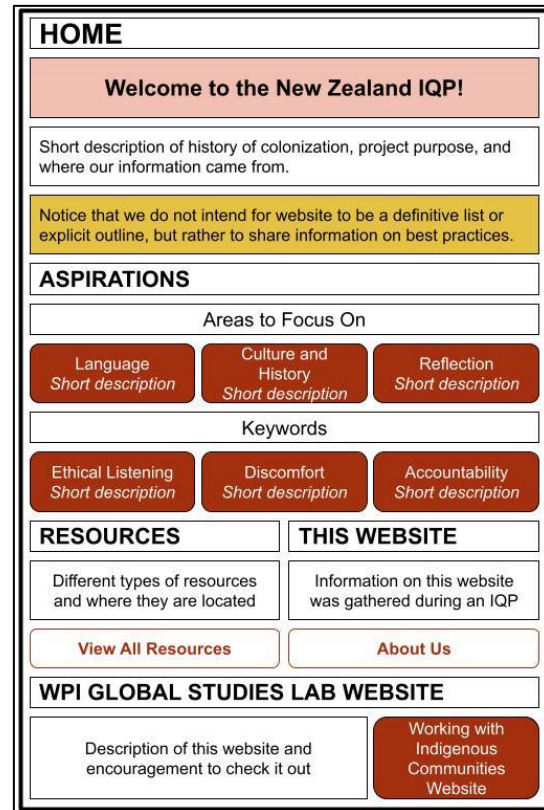
Figure 3 Planning illustration of the Home page

Figure 4 Final execution of the Home page

CULTURE & HISTORY

We found that knowing the history of how Aotearoa New Zealand was colonized contributes heavily in the present day. Because of this the Culture and History page, shown in Figures 5 and 6, includes links to published material on Māori culture and history, written by Māori authors, that future students can use to learn more about the topic before embarking on their IQP in efforts to help all communities in New Zealand. Additionally, links to other published readings as well audio clips are included. We decided that we will also include a portion that stresses the importance of being open to accepting other cultures, even if it is a new way of thinking or not something the student would necessarily agree with. Having multiple sources and photos will help familiarize and encourage students to explore more.

Figure 5 Planning illustration of Culture and History page

Figure 6 Final execution of the Culture and History page

LANGUAGE

The Language page, shown in Figures 7 and 8, includes resources related to language such as a Māori dictionary. We know from our own experience that pronunciation can be difficult, so included is a resource about pronunciation and videos that use Māori words. Also provided is a resource to share traditional Māori greetings, such as a mihi, and guides that walk students through understanding how to do a mihi themselves. Using Māori greetings, we found, is an appreciated and respectable approach when working with Māori sponsors and communities, and doing so will be helpful for students to feel less out of place when presented with a traditional Māori greeting.

Figure 7 Planning illustration of Language page

Figure 8 Final execution of the Language page

REFLECTION

Reflection during IQP can be an intimate process that all students will undergo at some point. This section on our page, shown in Figures 9 and 10, will include quotes from interviewees and suggestions to help guide them through the process. This entails the importance of knowing one's own history. When working on our interviews, both Māori and Pākehā individuals stressed how strange it may be if students come over and try to work with decolonized methods and projects when they aren't aware of it happening in their own country. Provided on our resource is this concept and example questions of what to reflect on, as well as reflective questions to encourage students to do their own research about oneself and where they come from.
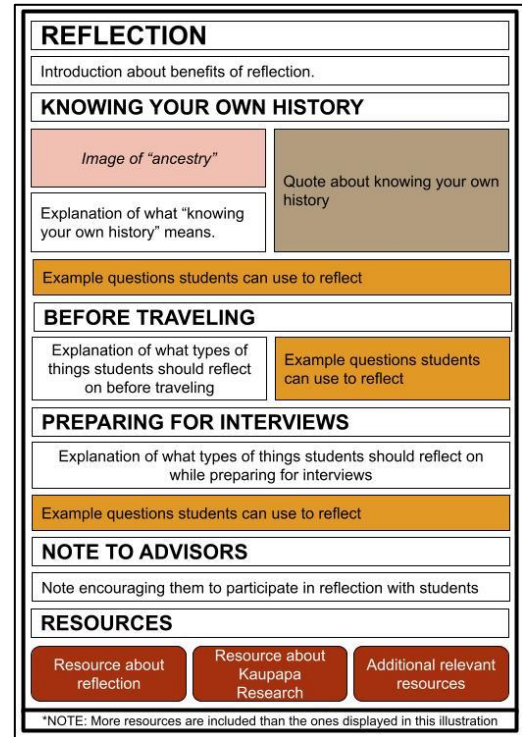
Figure 9 Planning illustration of Reflection page

Figure 10 Final execution of Reflection page

ETHICAL LISTENING

This section of the website, shown in Figures 11 and 12, involves the key role of ethical listening which helps encourage genuine connections and build stronger, long-lasting relationships between WPI students and Māori sponsors. To achieve this, we acknowledge that storytelling plays a large role in Indigenous cultures and provide quotes from interviewees that explain how storytelling may be used and how students should react to it. Quotes from interviewees about the damaging outcome of *not* listening has been added. This also encourages students to realize that there is more than one way of learning and conducting research and that westernized research styles are not necessarily the correct or only way.

Figure 11 Planning illustration of the Ethical Listening page

Figure 12 Final execution of Listening page

DISCOMFORT

Majority of WPI students are coming to Aotearoa New Zealand with a western perspective and working with communities for the first time who have different views and values. The western perspective is also known to be very driven as "the right way" or "the only way," and IQP is likely the first opportunity where these ideas are challenged for students. This page, shown in Figures 13 and 14, shares our own challenges and encourages students to get comfortable with being uncomfortable, and then reflect on why they are feeling this way. This will encourage a mindset of openness, willingness to grow more, and being able to admit when mistakes have been made.
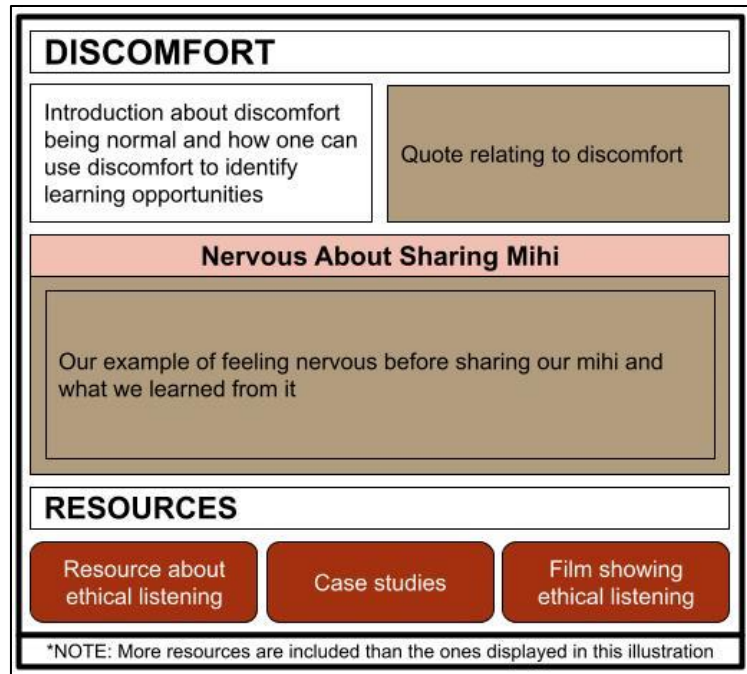

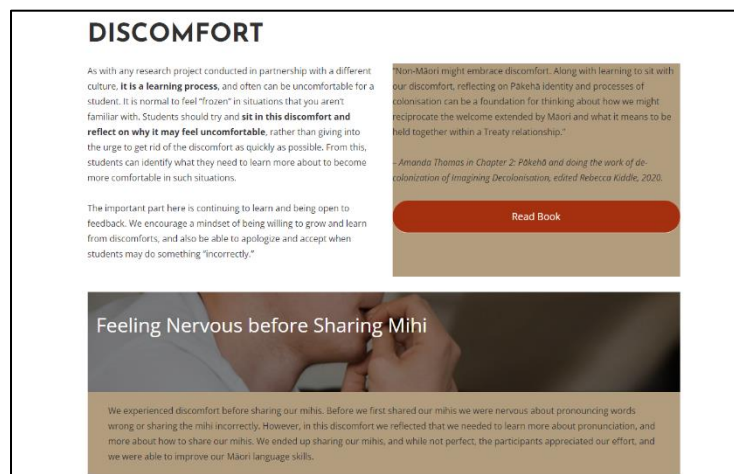**Figure 13 Planning illustration of the Discomfort page**

Figure 14 Final execution of the Discomfort page

ACCOUNTABILITY

When non-Indigenous people are working with Indigenous communities ensuring that Indigenous voices are not suffocated is important. This means that WPI students must hold themselves accountable when working with the Māori community and be aware of the community they are representing. Even if they are not working directly with Māori sponsors, projects will affect them in some way and including their point of view is important. This page, shown in Figures 15 and 16, addresses this concept and emphasizes why it is important and how students can actively practice accountability when on IQP, such as educating themselves on the Treaty of Waitangi and practicing ethical listening and reflection. Included at the bottom of the page are extra resources, such as case studies and films, to help address this topic.

Figure 15 Planning illustration of the Accountability page

Figure 16 Final execution of Accountability page

RECOMMENDATIONS

The goal of this project was to promote responsible research partnerships between the WPI community and the Māori communities they work within Aotearoa. The aim was to better understand the perspectives of Māori and Pākehā individuals in Aotearoa New Zealand, in addition to those of WPI students and faculty, on student research projects in cross-cultural scenarios, specifically when students are on IQP in New Zealand. Education, reflection, and collaboration are essential components that will serve as the foundation for students to develop relationships and produce projects that benefit the communities they partner with. Based on conclusions we drew from the detailed answers and experiences we learned about from interviews, we have devised the following recommendations. We have divided our recommendations into two groups: recommendations for the Just IQP Research website, and recommendations for future IQPs.

RECOMMENDATIONS FOR THE FUTURE OF JUST IQP RESEARCH WEBSITE

The following section entails suggestions and recommendations to be added to the Just IQP Research website and provides ideas about what can be improved, added, or updated.

This project should be renewed. As mentioned before, research in this topic is always ongoing and continuous. Project lengths similar to that of IQP are not long enough to cover all information and best practices when working with the Māori community. Since there voluminous amounts of information and research can change, we recommend that this project is renewed to update and add to our current findings. Hopefully, this will help to further prevent damaging relationships and harming the Māori community.

- *Include a calendar of upcoming events relevant to the topic.* These events would consist of perhaps Zoom speakers from New Zealand, relevant Ted Talks, or on-campus events that involve Māori/Indigenous work. By adding this to the website, students can easily reach multiple sources compacted into one page of events they may have never known existed. Events like those on the calendar would provide an interactive, participatory resource that some students may prefer when learning.

- *Include a discussion board to share student experiences.* The idea behind having a prompted discussion board would be for IQP, past and present, to share their experiences when working with the Māori community. This would have the intention of sharing perhaps stories, discomforts, reflections, etc. and by no means would be a space to share harmful and/or judgmental thoughts. These recommendations would be aimed at letting students feel more comfortable sharing their experiences and would also act as a reflective piece for themselves as well. In

order to ensure that there is no spam or negative comments, New Zealand advisors/directors would have to monitor this feature.

- *Set up a mailing list that people could sign up for.* This would ideally include subscriptions for email lists, social media posts, and/or news updates related to New Zealand and the Māori Community. This would help students immerse themselves in a Country and culture they haven't experienced.

- *There should be someone appointed as the admin of the website.* The admin would be able to add new resources and upkeep the features listed above. Some of the features mentioned above require monitoring, such as sending out a newsletter or checking discussion boards for spam and inappropriate content.. This person should be someone who is familiar with the project site and has an understanding of the website's purpose and functions, perhaps advisors and/or the directors of the New Zealand project site. By appointing someone as admin, the website will stay up-to-date and relevant, and students will be able to view current sources and information.

- *Similar projects as this one should be added to other project sites to create resources specific to those locations.* This project started a lot of conversations about responsible research with Māori partnerships that we think will positively impact the future of the New Zealand site, and we believe other IQP sites would benefit from doing something similar. As mentioned before, there cannot be a universal website on how to build research relationships with all Indigenous people, as that would be an irresponsible general assumption. We recommend that other IQP sites that involve Indigenous communities do a similar project that addresses how colonization has affected those areas, and what students can do to ensure that the research they conduct there is responsible and ethical. This will benefit other IQP sites and help guide and build stronger, more trusting relationships.

RECOMMENDATIONS FOR FUTURE OF INTERACTIVE QUALIFYING PROJECTS

In addition to recommendations for the continuation of our digital resource, we have also identified recommendations for the IQP program to encourage more responsible research. These recommendations all apply to the New Zealand site, but may also be expanded into other IQP sites that may work with Indigenous communities.

- *Begin a Pre-PQP for the New Zealand site to learn more language and culture.* We found that many students wished they had known more language and culture before beginning their research project. A Pre-PQP class would encourage students to learn

more about culture and language before beginning to research their projects. This is an important aspect as Aotearoa is a bi-cultural country, and even students involved in projects that may not explicitly be involved with the Māori community will still need to acknowledge Māori knowledge and culture, and students will hear Māori words in conversations and research. A focus of the Pre-PQP should be understanding the Treaty of Waitangi, which is the agreement that establishes relationships between the Pākehā and Māori communities in Aotearoa, and thus affects how students may approach their projects. While we recommend this specifically for the New Zealand IQP sites, there are probably other sites that work with Indigenous communities where a similar Pre-PQP could be beneficial.

- *Travel to the New Zealand site early to get oriented and focus on culture and language.* Similar to the above recommendation, this would be an alternative way for students to learn about culture and language before starting to actively work on their IQP project. In this case, students would travel to Aotearoa a week or so before the IQP begins, in early January, and they could take language classes, visit museums that explain the history, and partake in other events to further their cultural and linguistic backgrounds. Again, while this recommendation is specific to the New Zealand site, there may be other sites that could benefit from a similar practice.

- *Organized and regular reflection throughout the project duration.* One of the most repeated recommendations throughout our interviews was the importance of reflection. Therefore, we recommend students engage in reflection before the start of their project about their assumptions and biases, as well as reflection on their own histories and where they come from. We also recommend reflection throughout the project on any discomforts they may feel, how they think they are affecting their community, and topics they need to learn more about before continuing their research. These reflections would be prompted by the advisors, though we also have found that it's important the advisors themselves participate in the reflections, as they are also engaging in the community and learning about the site. In addition, by having advisors participate, this would create a more trusting, equal relationship between students and advisors that may make students feel more comfortable to go to advisors with concerns or ask for advice.

- *Students and advisors should focus on accountability in ID2050.* Accountability is an essential factor for conducting responsible research; students and advisors should have a good understanding of how the projects will affect the communities they are working in. To address the topic of accountability, students and advisors should discuss how their specific projects affect the community during PQP. In addition,

students and advisors should engage in a discussion as a cohort about accountability, perhaps prompted by a reading, to gain a better understanding of accountability and be able to apply this to their research. In this discussion, advisors and students should participate equally as they are all going to the IQP site and will be affecting the community, and therefore should all engage in discussions of accountability.

- *Advisors should participate in training before beginning PQP and IQP.* Advisors may not be used to engaging in social science research, as some advisors are from other disciplines. In order to better be able to support students, we encourage advisors to participate in a training program on social science research, conducted by someone in the Global Studies office. Alternatively, or in addition, we encourage advisors to do research on the community they are going to be working with, as well as on the principles of responsible research. This would include the factors we have found through our research, as well as other principles of conducting research specific to the community they are traveling to.

CONCLUSION

The relationships created and sustained between Māori communities and undergraduate students of WPI exemplify the delicate yet valuable bonds that can be made across cultures when the proper care and preparation is taken to ensure these partnerships are responsible. Although there is an education structure in place to inform students and advisors about best practices for partnering with Indigenous groups, it is a topic in which constant learning and open-mindedness is essential. The development of our digital resource is a small step towards this goal.

Our project highlights the need for a more culturally involved preparation in addition to an increase in self-reflection on the students' behalf regarding their own experiences and positionality. These research goals of this project align with several of the UN Sustainable Development Goals of #4 quality education, #10 reduced inequalities, and #16 peace, justice, and strong institutions. While it is our sincere hope that future students can have an immersive experience and can productively collaborate with Māori individuals, it will be their individual preparation that determines the outcome.

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APPENDICES

APPENDIX A: SAMPLE INTERVIEW QUESTIONS FOR MĀORI SCHOLARS

The following interviews with Māori scholars were designed as open-ended questions, some of which were specific questions for that person. Provided is one example of how these questions may have looked like:

1. We were first wondering if it was alright to record this interview for transcript purposes?
2. We read your [interviewee's work] and found many parallels to American society. Can you talk a bit more about that [specific work]?
3. In the [work], you state [quote from work], could you elaborate a little more on the self-reflection piece and how impactful it has when working together?
   a. What about when people aren't reflective? How much impact does that have on a project? Is it noticeable?
4. In many ways, the idea of colonization is portrayed as a historical/past event, as something that happened and ended in the past. Do you think this mindset has a huge influence on how non-Indigenous people work with Indigenous communities? How so?
5. Do you think a way western students can combat these mindsets is by "knowing their own history,"?
6. Would it be possible for you to elaborate a bit about how your research related to your collaborations with WPI? For instance, we know that you worked on a project [past IQP, only applicable to past sponsors] with WPI. How was that experience?
   a. It seems like they both involved partnerships with Māori communities, is that correct?
   b. How would you evaluate the partnerships? Was it successful? Or were there any concerns you had?
   c. If concerns –
      i. What happened with that?
      ii. Do you think the students could have done anything to prepare better that would have prevented these issues?
   d. If successful -
      i. Do you think this reflects on them being prepared well?
      ii. What made this successful?
   e. How do you prepare your students for this kind of work?
7. Were there any times where you felt like WPI students were not hearing the suggestions of any of the sponsors?

   a. Do you think this was related to cultural biases/assumptions?

   b. Do you think Western Ideology on the ideas of perfectionism, too scared to fail, and emphasis "that their way is the only way" has drastic effects when working with an Indigenous community

8. Through our research, we've identified a few key words which are Listening, Trust, Reflection, Accountability, and Language. What do you think about these concepts, do you have any thoughts about these keywords?

   a. Are there any other concepts that you think are important to include when talking about this topic?

9. Were there any last thoughts or questions that you may have had for us?

APPENDIX B: SAMPLE INTERVIEW QUESTIONS FOR PĀKEHĀ SCHOLARS

The following interviews with Pākehā scholars were designed as open-ended questions, some of which were specific questions for that person. Provided is one example of how these questions may have looked like:

1. We were first wondering if it was alright to record this interview for transcript purposes?
2. We read your [interviewee's work] and found many parallels to American society. Can you talk a bit more about that larger project?
   a. Their contribution
   b. How it came about or how they got involved
   c. Were there any other research or writing collaborations that you participated in that have brought up related questions?
   d. How about projects you did individually?
3. Going back to your [work], you talked about, could you give us examples of where listening and trusting did happen or did not happen?
   a. What happened?
   b. How did that impact dynamics going forward?
4. We have been looking at ethical research, but after reading this chapter we also became curious in looking at how ethical listening is involved in research
5. The idea of discomfort seems very central to [your work]. You wrote [quote]. Can you elaborate on this?
   a. How can non-Māori people practice/show/express this?
6. Given your experience, what are the most important things that non-Māori researchers can do to prepare for working in Māori partnerships?
7. We look at the examples at the end of the chapter of ways to call out in nuanced ways. What do you find helps best for your non-Māori students and colleagues who might have more discomfort with any confrontation?
8. We are especially thinking about this because, as you know, our goal is to create a digital resource for undergraduate students at WPI who might have the kind of discomfort that you described in your chapter.
9. Were there any last thoughts or questions that you may have had for us?

APPENDIX C: SURVEY FOR STUDENTS WHO HAVE WORKED WITH INDIGENOUS COMMUNITIES

Who we are: We are a team of students from Worcester Polytechnic Institute working with anthropologists Shana Lessing and Yunus Telliel to create a resource that guides ethical research with Māori partnerships and other Indigenous communities.

Purpose: The answers you provide will help inform us by highlighting challenges or processes that student teams experienced when working with Indigenous communities.

Procedures to be followed: In this survey, you will be asked about your experiences when working with Indigenous people. At the end of this survey, there will be an optional section to provide your email for a potential interview to go more in-depth about your experiences.

Confidentiality: Any publication or publication of the data will not be used to identify you.

Survey Questions:

1. Did you work with an Indigenous community on IQP?
   a. Multiple choice
   b. Yes; no
2. Which Indigenous community did you work with?
   a. Open response
3. Please rank how prepared you felt in the following areas prior to beginning your IQP, 1 being very unprepared, and 5 being very prepared. If you did not prepare in that area at all, please select N/A.
   a. Ethical training - Slider bar from 1 to 5, or not applicable
   b. Cultural Context - Slider bar from 1 to 5, or not applicable
4. Is there anything else you wished you knew before beginning working with your Indigenous partners?
   a. Open response
5. Are there any examples of cultural missteps and/or miscommunications you can reflect on? If so, please describe.
   a. Open response
6. Referring to the question above, how, if at all, do you think problems like this could have been avoided?
   a. Open response
7. Is there anything else you'd like to tell us about this experience?
   a. Open response

8. If you would like to partake in a further interview (in person or through zoom) between January 20th, 2022 and February 19th, 2022, please provide your contact information below:
   a. Short response box for name and email

APPENDIX D: SAMPLE INTERVIEW QUESTIONS FOR WPI STUDENTS

The following interviews with students were designed as open-ended questions, some of which were specific questions for that person. Provided is one example of how these questions may have looked like:

1. We were first wondering if it was alright to record this interview for transcript purposes?
2. We know you worked with the Māori community in your IQP, how was that experience? Can you elaborate on how involved you were with that community?
3. How did your advisors prepare you for work with Indigenous communities?
    a. Are there specific concepts that you or other students struggled to grasp?
    b. Do you think this preparation would have been different if you had/were planning to travel?
    c. In what ways do you think IQP programs can better prepare students to establish responsible relationships with Indigenous communities?
4. In your view, do you find that students come into a project with assumptions about the community they're working with?
    a. If yes - How does this affect their research and the communities they work with?
    b. If no - are there any other biases, you notice in students before or during their IQP?
5. The topic of accountability came up in our research as well as in our interviews. Do you think students hold themselves accountable for the work they do in these communities?
6. Related to this topic, we've also been thinking about power dynamics in these relationships. In the Māori community you worked with, do you find students are actively working to even power imbalances?
    a. If issues - How do you think students can be more aware of how to actively balance power in research relationships?
7. Did you or anyone in your cohort ever go to an advisor with concerns about collaborating with an Indigenous community? (could include culture shock, other discomforts)
8. As we explained earlier, we are working on a digital resource, we were wondering if you had any suggestions/recommendations for our approach? Something that you think would be helpful for students as they embark on their IQPs?
9. Were there any last thoughts or questions that you may have had for us?

Who we are: We are a team of students from Worcester Polytechnic Institute working with anthropologists Shana Lessing and Yunus Telliel to create a resource that guides ethical research with Māori partnerships and other Indigenous communities.

Purpose: The answers you provide will help inform us by highlighting challenges or processes that student teams experienced when working with Indigenous communities.

Procedures to be followed: In this survey, you will be asked about your experiences when working with Indigenous people. At the end of this survey, there will be an optional section to provide your email for a potential interview to go more in-depth about your experiences.

Confidentiality: Any publication or publication of the data will not be used to identify you.

Survey Questions:

1. Have you advised an IQP where students worked with an Indigenous community?
   a. Multiple choice
   b. Options: yes; no
2. Which Indigenous communities have your students worked with? (please list multiple Indigenous communities, if applicable)
   a. Open response
3. Were students provided any explicit training in either of these areas prior to interacting with Indigenous community members? Select all that apply
   a. Ethical training; cultural context training; N/A
4. If training in ethical research and/or cultural context was provided, can you tell us a little about what that entailed?
   a. Open response
5. If you have advised multiple student groups who have worked with Indigenous communities, has the way you have prepared your students changed?
   a. Multiple choice
   b. Yes, preparation has changed. Please describe how and/or why [short response box]; No, preparation has not changed; Not applicable, I have only advised one student group that worked with Indigenous communities
6. Are there any areas in which students could be better prepared to work with Indigenous communities? If so, please describe.
   a. Open response

7. Have any of the students you have advised come to you with concerns about working with any Indigenous community? (e.g. culture shock, other discomforts, etc.) If so, pleas describe.
   a. Open response
8. What challenges did your students have working with this Indigenous community, if any?
   a. Open response
9. Did you ever have to intervene on behalf of either the students or the Indigenous community?
   a. Multiple choice
   b. Yes, I had to intervene. Please describe [short response box]; No, I did not have to intervene.
10. In your view, what are the conditions in which IQP teams can establish ethical relationships with Indigenous communities? To what extent are IQPs able to establish these conditions?
    a. Open response
11. In your view, are there any areas in which WPI could do better to establish ethical relationships with Indigenous communities?
    a. Open Response
12. If you would like to partake in a further interview (in person or through zoom) between January 20th, 2022 and February 19th, 2022, please provide your contact information below:
    a. Short response box for name and email

The following interviews with advisors were designed as open-ended questions, some of which were specific questions for that person. Provided is one example of how these questions may have looked like:

1. We were first wondering if it was alright to record this interview for transcript purposes?
2. We know you worked with [Indigenous community], how did you get involved with this site and establish connection/relationships with this community?
   a. How long have you been an advisor, or how many projects have you worked with?
3. How did you prepare your students for work with Indigenous communities?
   a. Are there specific concepts that your students struggled to grasp?
   b. In what ways do you think IQP programs can better prepare students to establish responsible relationships with Indigenous communities?
   c. How has the way you've prepared students changed over the years?
4. In your view, do you find that students have an exoticized view of the Indigenous communities they work with?
   a. If yes - How does this affect their research and the communities they work with?
   b. If no - Are there any other biases you notice in students before or during their IQP?
5. The topic of accountability came up in our research as well as in our interviews. Do you think students hold themselves accountable for the work they do in these communities?
   a. "What do you mean" - When non-Indigenous people are working with Indigenous communities, it's important that the researcher isn't suffocating Indigenous Peoples voices, and ensuring that their research is conducted in an ethical manner rather than extractive or transactional. So as a researcher, you have to make sure you're holding yourself accountable to the people you're working with and the communities you're representing.
   b. Related to this topic, we've also been thinking about power dynamics in these relationships. In the community your students have worked with, or even other IQP sites, do you find students are actively working to even power imbalances?
   c. If issues - How do you think students can be more aware of how to actively balance power in research relationships?

6. Have any of the students you have advised come to you with concerns about working with an Indigenous community? (could include culture shock, other discomforts)

7. As we explained earlier we are working on a digital resource, we were wondering if you had any suggestions/recommendations for our approach? Something that you think would be helpful for students as they embark on their IQPs?

8. Were there any last thoughts or questions that you may have had for us?

APPENDIX G: WEBSITE AND REPORT CONSENT FORM

The following provides a structured outline of consent for quoting in both the final report and the website for individuals interviewed. Additionally, a separate document provided the context in which the quote came from in the interview.

The following quotes and/or referenced are currently in the draft of our final report, which will be posted on our institutions library database and will be available to the public. Before finalizing our draft, we wanted to ask the following permissions. If you'd like more context for any quote/reference, we can send the entire paragraph and/or section with the other participants' contributions kept anonymous. If you have any hesitancy or discomfort about these quotes/references being used, please don't hesitate to let us know, and we will edit them out.

[Provided quote and/or reference]

Do we have your permission to use this quote/reference? If you would like changes made to it, or if only part of it is ok to be used, please describe in "other."

- ❏ Yes
- ❏ No
- ❏ Need more context
- ❏ Other: _____

Do we have permission to cite you for this quote/reference?

- ❏ Yes, we can use your name
- ❏ No, we should keep you anonymous

The following quotes and/or referenced are currently in the draft of our website, which will be posted and available to the public. The website domain is https://wp.wpi.edu/justiqpresearch/, however much of it is not published yet as we are waiting on permissions from a few participants. Before finalizing our website, we wanted to ask the following permissions. If you'd like more context, we can send a screenshot of the website draft with the other participants contributions taken out. If you have any hesitancy or discomfort about these quotes/references being used, please don't hesitate to let us know, and we will edit them out.

[Provided quote and/or reference]

Do we have your permission to use this quote/reference? If you would like changes made to it, or if only part of it is ok to be used, please describe in "other."

- ❑ Yes
- ❑ No
- ❑ Need more context
- ❑ Other: _____

Do we have permission to cite you for this quote/reference?

- ❑ Yes, we can use your name
- ❑ No, we should keep you anonymous