

Assessing and Improving the Hangzhou Project Center

An Interactive Qualifying Project
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Abstract

2023 marks the tenth anniversary of the Hangzhou Project Center (HPC) and Interactive Qualifying Project (IQP)/International Joint Practice (IJP) cooperation between Worcester Polytechnic Institute (WPI) and Hangzhou Dianzi University (HDU). The project center was developed as part of WPI's Global School to provide students with an opportunity to develop professional abilities and real-world problem-solving skills. Our team's project explores the effectiveness of the project center and aims to provide recommendations to improve the center for the future. Through extensive literature review of Project Based Learning (PBL) and the IQP, as well as a comprehensive series of surveys and interviews, we recorded many critiques, praises, and common sentiments of parties throughout the HPC's history. Our research has enabled us to make informed recommendations to improve the project center experience for all future participants.

Acknowledgements

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Executive Summary

The Hangzhou Project Center (HPC) in Hangzhou, China, was founded as an Interactive Qualifying Project (IQP) site operated by Worcester Polytechnic Institute (WPI) and Hangzhou Dianzi University (HDU) in 2014. Our sponsors, the project center directors, requested our team assess the past decade of project center performance and provide recommendations that could improve the project experience for parties involved in the IQP program. From the insight of our sponsors and advisors, we outlined the following research objectives for this project:

1. Analyze the student experience of IQP education at the HPC
2. Determine why sponsors are willing to facilitate student projects and what factors affect their fidelity to the program
3. Understand the impressions of advisors and other faculty involved with the HPC, specifically regarding the execution of the IQP program and the mixed-team model

Background

This project background briefly explores the evolution of Project-Based Learning (PBL), the WPI Plan, the IQP program, and the HPC. These topics are crucial for understanding our research goals.

Project-Based Learning is an active learning approach that engages students in real-world projects, emphasizing critical thinking, problem-solving, collaboration, and creativity. While fostering practical skills, it also requires students and teachers to adapt to new learning environments. The WPI Plan exemplifies innovative education by emphasizing PBL in its curriculum. With a focus on global and interdisciplinary experiences through IQPs and other related programs, the WPI plan produces graduates recognized for their technical competence, innovative approaches, and multicultural awareness. Thus, the IQP program at WPI emphasizes hands-on learning, global engagement, and societal impact. In addition to the traditional IQP, certain project centers implement a mixed-team model (MTM), where WPI students work with international students to complete a shared project.

In 2014, WPI and HDU collaboration founded the HPC. A shared project in 2019 marked the first year of mixed-team model collaboration, and the COVID-19 pandemic forced students to collaborate virtually from 2020 to 2022. WPI students returned to Hangzhou in 2023 to complete their IQP projects in-person.

Methodology

To perform research for our project, we collected data from HPC stakeholders. These stakeholders included HPC students, sponsors, and faculty. We first conducted a broad alumni

survey to understand overall student sentiment. To account for survey limitations, we also conducted interviews with HPC alumni who expressed interest in providing more of their perspectives. To gain insight into other stakeholder parties, we also interviewed a variety of HPC sponsors and advisors from the past decade to understand their impressions of the HPC.

Our quantitative data was collected through a broad alumni survey characterized by a scalable, structured format. Both WPI and HDU teams released surveys with the same core questions to compare student experiences, albeit on different software and in different languages. As we received survey responses, we began interviewing HPC alumni who expressed interest in sharing their perspectives. Incorporating both types of data enabled a more comprehensive approach to data collection. This approach ensured that we captured both quantitative and qualitative insights for our analysis.

Similarly, conducting interviews with project sponsors allowed us to understand how sponsor experience has changed over the course of the HPC's history. Interviews were the most appropriate method of data collection due to the relatively small number of available sponsors. Our sponsors provided us with the contact information for many of these individuals.

The faculty whom we interviewed were primarily previous HPC faculty advisors. These advisors were responsible for the students on IQP and monitored the progress of student project reports. We decided to interview at least one WPI advisor from every year of the HPC's history, along with three HDU advisors.

At our sponsor's request, our team also created a promotional video to recruit future students and sponsors to the IQP experience at the HPC. We created multiple promotional material drafts and confirmed many details of this portion of our project before creating a final video.

We encountered many limitations stemming from our methodology, including biases, a lack of survey responses, language barrier difficulties, and difficulty contacting sponsors. We were not able to receive survey responses from many HPC alumni due to defunct email addresses or limited interest. We accounted for the recognized biases in our survey and interview designing and execution processes. To increase our reach to as many students as possible, the WPI Global Experience Office assisted us by sending our survey to all alumni emails in their HPC database. In addition, our project execution was affected by the language barrier, which slowed communication with our HDU teammates and hindered the speed of our data collection. Similarly, contacting Chinese sponsors for interviews was also difficult. Many sponsors did not speak English, some sponsor organizations closed, and others did not respond to our requests.

Data and Analysis

We organized our analysis by years of similar project center organization to align with

the narrative format desired by our sponsors. For student and sponsor analysis, these periods included the buddy-system years (2014-2018), the first year of the MTM (2019), pandemic years (2020-2022), and present-day (2023). We chose to analyze the faculty interviews using different periods, including initial years (2014-2016), middle years (2017-2019), and recent years (2020-2023), due to the advisors changing over the years.

The first section of our findings is from our student survey and interviews. From our survey responses, the main reasons students want to go to China are for opportunities to explore a different culture and geography. WPI faculty and peer recommendations did not have a strong influence on student desire to travel to the HPC. Next, we investigated the developmental growth of students at the HPC. Students from all years noted that the HPC improved professional and personal skills across the board, but the IQP experience was much less impactful during the pandemic years. Responses to cultural preparation survey questions indicated a lack of preparedness to visit China from the more recent classes of students. Even though most students who attended the HPC had some prior Chinese language knowledge, many agreed that a language learning component before traveling would have improved their experience.

Overall, students believed their projects had a positive impact on their sponsors but felt that their projects did not benefit the Hangzhou community. Students' experience with the MTM results was generally positive in some aspects. These aspects included making friends and easing data collection. However, most students believed the mixed team sizes were too large, hindering project execution. Further, students believed that the model would benefit from a pre-defined structure of how the teams should work together.

The second section of insights were gained from student interviews. Students thought that the cultural preparation for Hangzhou was inadequate and should be more practical rather than historically focused. Yet, students still had a very positive cultural experience at the HPC. The interviews uncovered mixed opinions on how much students grew professionally from the experience. Some students experienced conflicts within their teams and attributed their lack of professional growth at the HPC to this issue. Students who worked well with their teams saw greater professional growth throughout the IQP. WPI students from each of the periods covered in this study had positive experiences interacting with HDU students. However, after the MTM was implemented, students cited a lack of project structure in their professional correspondence.

The third set of results arises from sponsor interviews. In the nascent stage of the HPC (2014-2018), projects were organized by HDU faculty sponsors, drawn in by direct invitation from the HPC liaison. Sponsors recognized the valuable contributions of HDU student volunteers, particularly in navigating language and cultural barriers. Despite varied sentiments on team cooperation, faculty sponsors remained content with the final project outcomes due to their academic focus. The pandemic of 2020 necessitated a paradigm shift in sponsorship structure, pushing the HPC to adapt sponsors to online formats or acquire entirely new ones. Recurring sponsors demonstrated resilience, suggesting that the remote nature of the project did not affect the fulfillment of their expectations. Sponsors also applauded the professionalism and

efficiency of WPI students but expressed disappointment in HDU student participation. They attributed this to differences in educational models, contending that Western educational models instill greater self-learning skills. In assessing sponsor satisfaction, many opinions are contingent on individual student groups rather than reflective of the overall project experience.

The fourth set of results were from faculty interviews. Faculty highlighted the unique nature of the HPC's project focus, as it diverges from the traditional view of IQP as a humanities and socially focused project. While some expressed disappointment in this divergence, others commended the center for successfully recruiting challenging projects. Faculty from 2017 to 2019 emphasized the value of the buddy system, particularly in assisting foreign students with technological challenges. Advisors acknowledged the crucial role of volunteers in navigating cultural and practical hurdles, underscoring their significance in ensuring cultural integration. However, concerns were raised about inadequate preparation for cultural differences and the challenges of living in China, affecting both students and advisors. The years 2020 to 2022 witnessed a shift to a remote system. Managing teams across different time zones and a lack of familiarity between advisors and students was challenging. Advisors noted variations in student well-being based on their preference for face-to-face interactions, affecting the overall project experience. A notable concern during this period was the lack of communication between sponsors and student teams. This communication gap emerged as a significant challenge during the remote adaptation phase.

Conclusions

Our evaluations revealed a positive cross-cultural impact on students and advisors, with both groups expressing satisfaction in experiencing Chinese culture. Notably, enduring friendships were formed between students. However, we concluded that there has been insufficient cross-cultural preparation for this project center, particularly in recent years, indicating a need for enhanced practical training for both students and advisors. While students consistently derived professional value from the projects, team dynamics played a crucial role in shaping the extent of their gains. Misaligned sponsor expectations and communication differences also surfaced as challenges. The MTM received praise for fostering connections, but issues like large team sizes and unclear stakeholder roles hindered effective collaboration. Overall, we determined that improvements to cultural preparation, team dynamics, and communication are necessary to enhance the overall effectiveness of the HPC.

Recommendations

Our project provides four actionable recommendations for improving the HPC:

Recommendation 1 focuses on improving cultural preparation for students traveling to Hangzhou. Suggestions include reintroducing an expert-led cultural component in the IQP preparation class, early communication about the China hub and its activities, lessons on using Chinese apps, and adjustments to the IQP preference form to include information about potential

challenges in Hangzhou. Other suggestions include updates to the eProjects page and the Hangzhou student handbook.

Recommendation 2 underscores the importance of better communicating the IQP's educational nature to prospective sponsors. This communication needs to entail establishing clear expectations during initial meetings, using past project reports as examples, and emphasizing the educational focus of the program. The goal is to address sponsor dissatisfaction with the academic orientation of student projects and ensure alignment with the educational objectives of the IQP.

Recommendation 3 addresses the need to inform prospective students and advisors about the HPC's business-oriented projects. Given Hangzhou's business-centric environment, clarity is crucial in setting expectations. The recommendation suggests further highlighting the business focus of the HPC on platforms like eProjects and at events such as the Global Fair, aiming to mitigate potential discontent among participants seeking projects with a more humanitarian emphasis.

Recommendation 4 centers on providing students with a more explicit outline of the MTM's structure. While acknowledging the value of the MTM, students identified challenges in collaboration, such as large team sizes and unclear expectations. To address these concerns, this recommendation proposes a more detailed outline of the MTM structure. This includes defining roles and expectations to enhance communication and collaboration among team members from WPI and HDU.

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1. Introduction

In 2010, Worcester Polytechnic Institute (WPI) proposed a partnership with Hangzhou Dianzi University (HDU) regarding student research opportunities in a project-based learning (PBL) curriculum (Chau et al., 2014). Observing some of these curriculum advantages, HDU and WPI signed a Memorandum of Understanding to cooperate long-term in this academic research field. After further planning, a second Memorandum of Understanding was signed in 2014 that formally created a cooperative project center between WPI and the HDU School of Management (Chau et al., 2014). The first five years at this Hangzhou Project Center (HPC) included HDU student volunteer “buddies” in assisting WPI students who were completing WPI’s Interactive Qualifying Project (IQP) requirement for graduation. HDU students participating in this “buddy system” did not receive course credit.

In 2019, curriculum changes at HDU allowed HDU students to receive course credit for formal involvement in the IQP Project. This program shift introduced the HPC to the mixed-team model (MTM), referring to collaborative teams of WPI students and partner university counterparts on a joint effort project.

The IQP at WPI strives to cultivate student ability by encouraging collaboration across multidisciplinary teams. The IQP is meant to foster the development of future qualified professionals by providing students a chance to experience teamwork in an intellectually diverse environment (“Interactive Qualifying Project Learning Outcomes”, n.d.). By creating these diverse experiences WPI fosters innovation among students, “diversity in ‘academic discipline’ and ‘academic level’ were positive predictors of project innovation” (Usher and Barak, 2020).

The global IQP program also broadens student global perspectives. It does this by challenging students to adapt to unfamiliar situations, ultimately shaping them into well-rounded individuals (Havenga, 2015) who possess a heightened appreciation for other cultures (“Interactive Qualifying Project”, n.d.). Likewise, the global IQP program often provides tangible benefits to a local society. Since many projects focus on benefitting the site’s local community, students are provided the opportunity to observe how their education can change the world for the better (“Interactive Qualifying Project”, n.d.).

The year 2023 marks the tenth anniversary of the HPC. The HPC directors, our project sponsors, desire a comprehensive investigation of the project site’s proficiencies and shortcomings. Our report documents and analyzes the experiences of stakeholders within the HPC and identifies areas of improvement to better align with the goals of IQP. These stakeholders include past students who obtained educational value from the HPC, and the project site sponsors and faculty who facilitate projects.

Our documentation incorporates a broad student survey to assess how the HPC meets PBL objectives in nurturing professional growth and imparting project management, communication, interpersonal, and analytical skills to students (“Interactive Qualifying Project Learning Outcomes”, n.d.). Along with the previously mentioned skills, PBL enhances student teamwork, perception of the world, and motivation (Syahril et al., 2021). Through interviews, we also quantify the success of HPC projects based on their ability to fulfill student and sponsor expectations (Walsh et al., 2008). Determining project satisfaction and reasons to facilitate projects provides insight into better methods for recruiting future sponsors. Similarly, understanding the constraints of the project center from an advisor perspective is indispensable, as logistical requirements provide insight for project center improvement (Walsh et al., 2008).

This report includes a background section that provides HPC history, a methodology section that establishes our data collection processes, and an analysis section that notes key themes and observations from our primary data and secondary research. From our analysis, we identify where the HPC performs well or requires improvements. This analysis and background research informs practical recommendations to the program directors (our sponsors) for enhancing the HPC.

2. Background

The background of PBL and its intertwined history with the WPI and HDU partnership is included in this section. We first set the theoretical foundations of PBL, using the literature to outline the pedagogical model's strengths and weaknesses. We then provide a summary of the WPI Plan and the importance of PBL to WPI's educational model. We also delve further into the historical narrative of the IQP, providing insight into the development and transformation of the program over time with support from background literature.

The next section details Hangzhou's historical significance in China. This is followed by an elaboration on the history of HDU and its connection with WPI, illuminating the collaboration that has shaped their partnership. Finally, we shine a spotlight on the resilience displayed by the HPC during the COVID-19 pandemic.

This contextual and academic background helps provide a comprehensive understanding of the topics and methods central to our project. This evidence-based background is critical to grounding our primary data collection and analysis, so we will return to the academic and background literature as we introduce the methodology, analyze the results, and provide recommendations.

2.1 Project-Based Learning Definition and Theory

PBL is a pedagogical approach that fosters student involvement and participation in a real-world project scenario. This approach differs from traditional teaching methods by focusing on interactive experiences meant to engage students (Gou et al., 2020). By undertaking activities that require critical thinking, problem-solving, collaboration, and creativity, students develop practical skills that are highly applicable in their academic and professional lives (Danford 2006). PBL enables interdisciplinary connections while collaborating with others and ensures that students graduate with some practical team experience and problem-solving skills (Pan et al., 2019).

Implementing PBL also introduces some difficulty. Notably, students must adjust to their learning environments and be willing to self-learn. This paradigm shift can be disruptive to students who are only accustomed to a traditional classroom setting. Teachers face similar challenges, as it may be particularly difficult to properly assign credit to work that frequently uses a broad scope of criteria (Pan et al., 2019).

2.2 The WPI Plan and Interdisciplinary, Global Education

The WPI Plan is an example of WPI's commitment to innovative education rooted in theoretical foundations (Pan et al., 2019). It extends higher education beyond traditional lecture-

based instruction (“Interactive Qualifying Project”, n.d.). The heart of the WPI Plan is PBL, used strategically to set WPI apart from other educational institutions.

As an instructional strategy, one distinguishing feature is that the PBL process mirrors that of the real business situation (Danford, 2006). Such situations demand critical thinking, problem-solving, and teamwork. WPI incorporates this method into many academic programs (Wobbe and Stoddard, 2019), and IQP is one such interdisciplinary education meant to provide graduates with insights into complex problems (“Interactive Qualifying Project Learning Outcomes”, n.d.).

The WPI Plan also incorporates a strong emphasis on global experiences (“Interactive Qualifying Project Learning Outcomes”, n.d.). Whether through global projects or studying abroad, students are also encouraged to engage in voluntary classes geared toward solving real-world problems. Such programs include the Great Problems Seminars and the Global Projects Program meant to address global issues. This type of global education is necessary for students to learn about and solve issues in the real world (Reimers, 2020). Following such examples, many other educators are seeking to expand upon similar global education programs to prepare students for professional careers.

According to surveys delivered by the University (O’Keefe et al., 2021), graduates of WPI are known for technical competence, interdisciplinary thinking, and global awareness. Attributes are highly prized in a world of rapid change and complexity (O’Keefe et al., 2021).

2.3 Interactive Qualifying Projects

Worcester Polytechnic Institute is renowned for its unique and innovative approach to education, particularly through its IQP program. This distinctive program has evolved over the years, reflecting the institution's commitment to PBL and global engagement (Vaz et al., 2013).

The roots of the IQP program can be traced back to the founding of WPI in 1865 (Dorsey, 1996). From the beginning, WPI has emphasized hands-on learning, practical application of knowledge, and problem-solving skills. However, it wasn't until the mid-20th century that the precursor to the IQP, also known as the "Major Qualifying Project", began to take shape. In the 1960s, WPI introduced this program as a requirement for undergraduate students. This project-based experience aimed to challenge students to apply their engineering and scientific knowledge to real-world problems. Initially, this program focused on technical challenges within the engineering disciplines, but the program encompassed a broader range of fields over time

The true transformation of this program into the IQP came in the 1970s and 1980s, as WPI recognized the increasing importance of globalization and the need for students to be prepared for a rapidly changing world. To address these challenges, WPI sought to provide

students with opportunities for global engagement and cultural understanding. In 1988, the first international IQP project center was founded in Venice, Italy. In 1997, the modern IQP program was formally established. The IQP retained its core elements while emphasizing a global perspective. Students were required to complete a project that addressed a pressing issue in an international context. This change reflected WPI's commitment to producing graduates who could thrive in a globalized world and make meaningful contributions to society.

The IQP program's success led to its continued expansion and refinement. WPI established project centers in various locations worldwide, allowing students to choose from a wide range of project opportunities in different countries. These centers became hubs for interdisciplinary collaboration, connecting students with local experts and organizations. Over the years, the IQP program has continued to evolve in response to changing global dynamics. It has adapted to address emerging challenges such as climate change, healthcare disparities, and technological innovation (Reimers, 2020). WPI has also incorporated a strong emphasis on ethical considerations, ensuring that students not only solve problems but do so in a socially responsible and sustainable manner.

Today, WPI's IQP program stands as a testament to the institution's dedication to PBL, global engagement, and societal impact. It has become a hallmark of a WPI education, producing graduates who are well-equipped to address complex, real-world challenges. The program's legacy is one of innovation, adaptability, and a commitment to shaping the future by empowering students to make a difference in the world. As WPI continues to evolve, the IQP program will likely remain at the forefront of its educational initiatives, preparing students to be leaders in an ever-changing global landscape.

2.4 The Mixed-Team Model

One of the first projects of the HPC was to assess the possibility of cross-cultural student collaboration at the HPC. This project concluded that "... it is mutually beneficial and possible for WPI and HDU students to jointly conduct sponsored, interdisciplinary research projects concerning the relationship between technology and society." (Chau et al., 2014). This possibility was realized in 2019 when the HDU School of Management permitted its students to work alongside WPI students in the IQP to also gain academic credit toward their degrees.

There are many benefits to cross-cultural collaboration and many implementation methods that vary in effectiveness. (Mittelmeier et al., 2017). A common problem associated with mixed-team approaches is that "cross-cultural group work is often fraught with tension" (Mittelmeier et al., 2017). This is why it is very important to understand how a cross-cultural team will work together. Besides the HPC, there are a few other WPI project centers that utilize a mixed-team approach to provide students with the additional benefits of working alongside peers from different cultures.

The most successful of these project centers is in Thailand, at the Bangkok Project Center. It has been an IQP site for thirty years and has implemented a MTM for the past seventeen years. This project center cooperates with the Chulalongkorn University Chemistry Department, where the department offers students the option to take an identical course to the IQP. The students who take this course do not take any other courses during the time that WPI students are in Thailand, they take a prep course like ID2050, and the teams are made up of only four students. This means that the IQP teams in Bangkok are made up of four WPI students and four Chulalongkorn students who focus their undivided effort on the project.

Another IQP site that uses the MTM is the Mandi Project Center in India. This project center has been using a MTM for ten years in collaboration with the Indian Institute of Technology. Indian students take some classes alongside the IQP but can still fulfill identical learning outcomes, although issues with project coordination can still occur. For example, the beginning of academic terms between schools do not usually match, and there can be up to a three-week difference between each school's academic periods. 2023 is the first year where both academic terms start at the same time.

At the HPC, HDU students take a course called the International Joint Practice (IJP) as an equivalent to the IQP. HDU participants also take between seven and eleven classes alongside the IJP and are grouped into teams ranging from eight to twelve students. Due to the large number of concurrent classes, HDU students do not have much time to dedicate to the IJP course. In addition, the WPI academic term starts weeks before the HDU academic term, presenting many challenges for project organization and execution.

2.5 The History of Hangzhou and Hangzhou Dianzi University

Hangzhou is the capital of Zhejiang Province, China. The city is located on the north bank of the Qiantang River estuary and is linked to waterways that span the Yangtze River. It sits at the base of the Tianmu Hills and next to West Lake, which are both symbols of beauty and national pride (The Editors of Encyclopaedia Britannica, n.d.).

Under China's founding Qin Dynasty of 200 BCE, the town of Qiantang was established, which began to develop in the next centuries as the Yangtze River Delta was settled. Under the Sui Dynasty of 580 AD, Qiantang became China's capital city and the construction of the Jiangnan Canal linked the Yellow and Yangtze Rivers. This canal grew Qiantang as a bustling hub for commerce and the city was soon renamed. Presently, this canal still connects Beijing and the Yellow River to Hangzhou and the Yangtze River and is the longest man-made waterway in the world ("The History and Culture of Hangzhou", n.d.).

As a new economic powerhouse of China, Hangzhou became the capital of the Wu-Yue state during the Ten Kingdoms period, 950 AD, and the seat of Song Dynasty rulers in the following centuries. Marco Polo described 13th-century Hangzhou as the "finest, most splendid

city in the world” since its great canal network and atmosphere mirrored his home city of Venice. Even in recent years, further technological developments such as rail systems, motor road development, and electronics manufacturing have maintained Hangzhou’s significance as a major Chinese city.

Following the Cultural Revolution of 1949, Hangzhou housed a tractor plant which brought about a machine and tool industry. This industry grew to encompass electronics manufacturing which encouraged the founding of a specialized electrical engineering university, Hangzhou Dianzi University (HDU), in 1956.

HDU has since become an internationally respected multi-disciplinary research university. Its large focus in the fields of electrical engineering and business management allows for many co-op program opportunities with local technology-based companies around the city.

2.6 The Hangzhou Project Center During COVID-19

Due to the emergence of the COVID-19 pandemic, China closed its borders to foreigners on March 28, 2020. This meant that WPI students had to find alternate methods to complete projects in China. Methods mainly relied on video conferencing to communicate with experts, sponsors, and other organizations (Schardong et al., 2021). As part of the MTM, WPI and HDU student teams had minimal collaboration ability, and most teams sought to work independently and then communicate with each other about their progress. Our project will elucidate what the experience was like for students involved in the HPC during this period. It will also provide findings from this period that may help future projects, whether face-to-face or online.

2.7 Current Cultural Preparation for Traveling to Hangzhou

When studying abroad, students often find they are not culturally prepared enough to “optimize their learning opportunities at the foreign site” (Goldoni, 2015). Thus, WPI provides cultural preparation during ID2050, an IQP cultural and professional preparation course, to prepare students for their travel destination. For the HPC, resources include the Hangzhou Handbook, the Hangzhou eProjects site, and ID2050 presentations given by various speakers. The Hangzhou handbook is an informative document written by the project center directors, containing information on what flights to book and necessary information for students to get to their housing in China. It also provides useful travel guidelines such as suggested attire, expected prices of goods and services, and emergency contacts (Appendix A). The Hangzhou eProjects site is provided to WPI students when they are looking into project centers for their IQP. This website has information such as previous project examples, a brief overview of the project center location, food options around the student housing, and the price of the project. Before 2019, WPI also brought an expert into ID2050 to teach basic language and culture to students. Later years of students did not have this additional cultural preparation.

3. Methodology

Our project assesses the HPC over the past 10 years, integrating the perspectives of our three key stakeholders: students, sponsors, and advisors. Our goal is outlined by the following three research objectives:

1. Analyze the student experience of IQP education at the HPC, specifically about the mixed-team model and cultural preparation.
2. Determine why sponsors are willing to sponsor student projects and what factors affect their fidelity to the program.
3. Understand the impressions of advisors and other faculty involved with the HPC, specifically regarding the value of the IQP and the mixed-team model.

To analyze qualitative data, our group consulted established literature in data analysis. We determined the following method to be appropriate for our data analysis:

Typically, researchers conduct a structured reading, annotating the text for key themes, pivotal observations, or anything else of interest as they read. During this component, you need to start the process of considering the way in which you will ultimately report on your research and, in particular to start thinking about key themes...Once the themes and their codes have been decided, the next task is to code the text using the codes, so that text covering similar themes in different interviews, or in different parts of the same interview can be drawn together and compared, and appropriate understandings of the things that the interviewees have said about a theme (or sub-theme) can emerge, and quotes can be identified to support such insights. (Rowley, 2012)

Our application of this method is further explained in the data analysis section.

The following sections further detail the methods of gathering primary data for our assessment of the HPC. Along with foundational background literature and academic sources, this assessment generates recommendations for project center improvement. Implementation of our recommendations will come at our sponsor's discretion.

3.1 Analyzing Student Experience

The IQP is an educational strategy centered around the student experience (see sections 2.2 and 2.3). Students serve as the foundation of educational institutions and project centers like the HPC, and understanding student interest and educational outcomes is paramount to interpreting satisfaction in the project center and determining whether the goals of PBL are met. When students have positive educational experiences, it not only reflects well on the institution but also encourages future students to participate. Conversely, a lackluster experience with minimal educational benefit can deter future participants and undermine the center's ability to thrive. Students are also the most direct stakeholder who experiences the design and functionality

of a project center and can provide valuable insights into what works well or needs refinement in program design, curriculum, and support systems. By closely examining the experiences of WPI and HDU students within mixed teams and their cultural preparation, both institutions may be able to make informed adjustments to enhance the overall quality of education and intercultural learning. Thus, student experience data is central to our study.

Our team utilized anonymous surveys as our primary research method to acquire primary data. Surveys have a structured format that allows them to be versatile and scalable. Standardized questions provide consistency and reliability in data collection, which are crucial for drawing meaningful comparisons and identifying trends for data analysis (McLafferty, 2010). Additionally, surveys accommodate differences in schedules and geographical dispersion by offering respondents the convenience of participating at their own pace and from any location.

Our WPI survey (Appendix B) was separated into two different sections for analysis purposes: closed-ended questions, mostly Likert scales, and free-response questions. Closed-ended questions ask respondents to choose from a distinct set of pre-defined responses. Results yielded numerical quantitative data on personal growth, educational growth, professional skills growth, and cultural preparation. By viewing question averages and standard deviation, we can identify trends in student satisfaction that will prove useful in our recommendations (McLafferty, 2010). Alternatively, a few free-response questions will be included. Free-response questions allow respondents to enter additional information they find relevant to the questionnaire.

The HDU survey, outlined in Appendix C, was strategically structured similarly to the WPI survey. This questionnaire was divided into two distinct sections to facilitate comprehensive analysis: closed-ended questions, predominantly featuring Likert scales and open-ended inquiries. Closed-ended questions prompt participants to select from a predefined set of responses, yielding numerical quantitative insights into various facets such as personal growth, educational advancement, professional skills enhancement, and cultural preparedness. Like the WPI survey, the HDU survey incorporates a subset of open-ended questions, fostering an avenue for respondents to provide supplementary information that they deem pertinent to the questionnaire. This dual-section approach enhances the depth and breadth of the survey's findings, facilitating a more nuanced understanding of the surveyed population's perspectives and experiences.

We issued our online questionnaire using Qualtrics software, while the HDU team used Wenjuan software. The surveys collected responses that shed light on students' positive experiences, areas of dissatisfaction, potential improvements, and other related aspects. While the survey was anonymous, those who wished to share more about their experience at the HPC also wrote their name for a possible interview with our team.

The student survey was released after many rounds of revisions from sponsors and advisors to improve the quality. Before release, we recruited classmate volunteers to take the survey as part of a pilot study. This approach allowed us to gauge survey quality including

completion time and question clarity. After preparing our final survey, we collaborated with the Global Experience Office and previous year HPC advisors to distribute it.

Our group, working with our HDU counterparts, also interviewed WPI students to gain a more qualitative perspective of their nuanced HPC experiences (Sarkis, 2023). Sponsors did not request interviews with HDU students. Surveys provide valuable quantitative data, but interviews allowed us to gain a deeper understanding of the emotional and experiential dimensions of the participant journeys, including their feelings, motivations, and unique stories. Moreover, interviews helped us clarify and contextualize the responses obtained from surveys. Incorporating interviews alongside surveys enabled a more comprehensive and holistic approach to data collection, allowing us to triangulate information and obtain a more well-rounded perspective on the impact and effectiveness of the HPC (Sarkis, 2023). Any interviews we performed with participants abided by informed consent anonymity agreements as explained in section 3.6.

3.2 Analyzing Sponsor Experience

In the context of the IQP, a sponsor is an individual or organization that provides a specific project to a team of students. During ID2050, the pre-IQP preparatory class, students are encouraged to discuss project goals with their sponsors. The goal of the IQP is to provide an educational experience for students, which sponsors facilitate suggesting that their satisfaction is another significant part of a project center's well-being.

Sponsor satisfaction or dissatisfaction with student project results can inform the project site how to improve or further reinforce certain practices. Reasons that contribute to varying sponsor experiences include levels of communication, professionalism, shared visions with students, and IQP goals. Understanding sponsor intentions will allow us to develop methods to increase satisfaction and perhaps encourage sponsor retention.

Sponsor experience data is collected over online interviews. Interviews are a preferred method of data collection over surveys or focus groups due to the limited number of sponsors and potential difficulties in communications (Sarkis, 2023). Reaching out to previous sponsors may prove difficult enough, but gathering a group of sponsors together in a focus group is relatively infeasible. With a plan and a protocol to interview sponsors, the next step is to contact them. One of our sponsors, the HDU liaison, has been recruiting sponsors to the program for the entirety of the HPC's history and provided us with some personal information to reach out to them. With this contact information, we can explain the purpose of our research and schedule interviews.

The HDU students on our team conducted many sponsor interviews due to their fluency in the sponsors' primary language, Chinese. During the interviews, specific questions about the sponsor's satisfaction were asked according to our shared interview protocol (Appendix D). As

with student interviews, all collected data follows the informed consent anonymity agreements (see section 3.6).

3.3 Analyzing Faculty Experience

Since faculty are responsible for a great deal of on-site logistics of a project center, they can be especially affected by logistical difficulties and coordination stressors involved with managing and advising in an international location. Project site coordination requires continuity in scheduling, decision-making, and equitable project integration to ensure that work is fairly distributed and student team morale stays high.

Splitting tasks in a joint-university curriculum is also a strenuous process. Besides obvious language barriers, culture, time zone, and department differences, primary responsibilities must be established before final tasks can be fully realized (Goldoni 2015). Faculty are important stakeholders in the success of project centers since they must work as a team with local sponsors, advisors, and institutions to ensure effective project center operations.

Likewise, faculty must prepare for student conflicts brought about by group logistics, due to the size of groups and individual motivation (Mittelmeier et al., 2017). Specifically with the implementation of the MTM, social loafing can occur since shared ownership often decreases individual accountability (Braender et al., 2013). At the HPC, university faculties must be proactive in organizing student groups to minimize this. Organizing these groups must also include accounting for student project preferences and sponsor language preferences; that is, some sponsors may only speak Chinese and would prefer to communicate with Chinese-speaking students.

We gathered data from the past ten years of the HPC through a series of interviews with WPI faculty advisors. Since there have been only 13 WPI advisors, scheduling interviews was as straightforward as sending a concise email explanation of our project and our interview request. We scheduled eight WPI advisor meetings and three HDU advisor meetings to provide us with the largest data set for later analysis. We based interview topics around key points included in our protocol script (Appendix E) and asked opinions and anecdotes about HPC operation. For advisors who assisted in HPC research after 2019, we also included specific questions to ask about the effectiveness of the MTM. All conversations with prior or current faculty advisors are in accordance with informed consent anonymity agreements as explained in section 3.6.

3.4 Promotional Video

Our sponsors also requested a supplementary promotional video to generate future student and sponsor interest in the HPC program. From our team's recommendations, our sponsors specified their desire for a six-minute promotional video explaining the IQP and its

history. This video contains a brief history of the HPC, testimonials from the project center directors, and quotes from students, sponsors, and advisors about the benefits gained from the HPC. To create this promotional video, we drafted a video script with our HDU partners (Appendix F) and requested feedback from our advisors and sponsors. Our video incorporates anonymous quotes and survey data from HPC participants and testimonials from project site faculty. It also features English narrations with Chinese subtitles. Quotes, images, and media do not conflict with informed consent anonymity agreements as explained in section 3.6.

3.5 Methodology Limitations

We encountered multiple limitations that affect the execution of our methodology. These included biases, survey response rates, language barriers, and establishing contact with sponsors.

One of the most prominent limitations of our project was bias. As we prepared our survey for finalization, we noted a concern from our sponsor regarding survey data and bias. To expand on our resources and knowledge of this, we conferred with an expert on data analysis and bias from WPI. We found multiple potential biases could impact our results, including self-selection, social desirability, and nonresponse bias.

Self-selection bias is “bias that can occur when individuals are allowed to choose whether they want to participate in a research study” (Nikolopoulou, 2023a). Since our surveys and interviews were entirely voluntary, we expected some results to be inevitably impacted by self-selection bias. For example, individuals may have only chosen to only participate if they had a positive experience at the project site or if they had strong opinions to share about their experience (Nikolopoulou, 2023a). This bias potentially impacted our qualitative survey results.

Social desirability bias “occurs when respondents give answers to questions that they believe will make them look good to others, concealing their true opinions or experiences” (Nikolopoulou, 2023b). Methods to avoid this bias include maintaining anonymity, being careful with the wording of questions, and indirect questioning (Nikolopoulou, 2023b). We integrated these methods into our methodology by ensuring anonymity was maintained for all surveys and interviews, and that questions were craftily worded to gain the most honest responses possible. Because of the use of anonymity, we found that this bias most likely did not impact our results.

Nonresponse bias is “when individuals who refuse to take part in a study, or who drop out before the study is completed, are systematically different from those who participate fully” (Nikolopoulou, 2022). According to the literature, it can be minimized by doing things such as offering incentives to participate, sending reminders, and ensuring the anonymity of participants is maintained (Nikolopoulou, 2022). We implemented these three methods to improve participation from individuals who are difficult to motivate or contact. In our case, we held a raffle for survey participants, sent reminders for alumni to fill out the survey, and ensured that all sources of information were held anonymous. Therefore, this bias likely did not impact our data

collection.

Another potential limitation was that our surveys did not receive enough responses to perform effective data analysis. There was a limited number of students who have participated in the HPC and we were unsure of whether we could successfully reach out to all of them due to communication and contact information difficulties. This is why we released our survey with endorsements from the HPC directors and other WPI faculty that would encourage survey completion.

Results from 2023 did not accurately reflect data since at the time of our data collection current students had not yet fulfilled or provided any final project results. This affected responses to project-impact questions and justified why 2023 was observed separately for the student qualitative analysis. Similarly, students from 2022 and 2023 have not yet graduated nor held full-time jobs, which could have impacted their responses to questions regarding the professional relevance of their IQP experience.

We also expected difficulties to arise from the cross-cultural nature of our project. Our team depended on the HDU students to collect interview data from sponsors but we had to ensure that sentiment was properly translated between Mandarin and English. We planned to approach this by reviewing each interview transcript by question and rephrasing each answer in multiple similar ways to ensure that translations were as close as possible. Since we were also unsure of cultural or personal differences that would make interviewees less critical of the HPC, we aimed to ensure anonymity and strove to maintain a comfortable atmosphere during interviews. We also planned to consult our advisors on this, as we believed they had many tips that would help yield us the most candid responses to our questions.

Finally, we faced challenges when initiating contact with sponsors. The perspective of sponsors who did not continue their sponsorship gave us valuable insights for analysis but we were initially unsure of whether these sponsors were interested in providing us their feedback. Since we predicted scheduling these sponsor interviews would be difficult, our approach involved reaching out to as many previous sponsors as possible. We also sought advisor insight to establish an effective protocol for these interviews.

3.6 Informed Consent Discussion

Since our project's data collection involved human subjects, an informed consent form was necessary for our research to be completed ethically. As described above, our methods of data collection included surveys and interviews, so ethical use of personal data was observed.

For surveys, all data was collected anonymously. Survey respondent responses cannot be connected to their identity, so consent is not necessary to share the results of the collected information.

Interviews did not permit the same degree of anonymity, as these included individual meetings where we obtained subjective perspectives. Our group also foresaw a prominent complication in asking Chinese interviewees to sign consent forms due to cultural differences. Instead, those familiar with Chinese culture advised us to obtain consent through a verbal agreement. After hearing this we found multiple sources explaining the problem with requesting written consent in China, including (Eikenburg, 2009), (Adams et al., 2007), and (Dai, 2003). As opposed to presenting interviewees with a form, we requested verbal affirmation that they were comfortable with their position being attached to any statements in our report. If the interviewee agreed, the group noted the verbal agreement date and continued with the interview. We used testimonials in a way that did not identify individuals by anything other than their position or relevance to the HPC, which was necessary to establish credibility. If any interviewees disagreed, our group still conducted the interview and simply noted any similar sentiments to other HPC participants. These interviews were not cited in our report.

To minimize additional privacy complications, our group chose not to document interviews through video or audio recordings. Instead, two team notetakers actively transcribed, quoted verbatim statements, and summarized each interview.

Our verbal agreement clause was included in our consent information sheet found in Appendix G.

4. Data and Analysis

In the following sections, we identify and elaborate on patterns found in our survey and interviews. The qualitative data from the interviews was sorted into three sections depending on the stakeholder target group and analyzed using the method outlined in Section 3 of the methodology. The interview feedback was also categorized by common themes, which we extrapolated from the interview protocols of each target group, based on the theoretical and practical foundations of this study.

Once the themes were established, we organized our analysis by years of similar project center organization to align with the narrative format desired by our sponsors. For students and sponsors, these periods included buddy-system years (2014-2018), the first year of MTM (2019), pandemic years (2020-2022), and present-day (2023). Since our survey only garnered 2 responses from 2019, there was not enough data for this section to be analyzed independently. Thus, it was grouped differently based on analysis of the mixed-team model or in-person years. Since WPI data from 2023 was largely analyzed independently due to the nature of our data analysis methodology, this time period has no standard deviation.

Analyzing faculty interviews required using a different set of time period organization, including initial years (2014-2016), middle years (2017-2019), and recent years (2020-2023). We included 2019 with 2017 and 2018 because the faculty were less affected by the MTM than in later years. We did not further divide any years after 2020 because the advisors did not change during this time period. Thus, our analysis is grouped by stakeholder and outlines themes and is arranged by time period. Organizing in this way made drawing conclusions and providing recommendations more straightforward.

4.1 Student Experience

The WPI questionnaire was sent to 212 total students who attend the HPC from the years 2014 to 2023. We received 48 valid responses with a response rate of 23%. Our HDU questionnaire was sent to 365 total students from 2014 through 2023 and we received 42 valid responses with a response rate of 12%. The detailed survey data is available in Appendices H and I.

4.1.1 Survey Demographics

The first question of our surveys asked the gender of the respondent. This was noteworthy since historically, more WPI male students attended this project center than WPI female students. Responses showed a 25 to 23 female majority, indicating this survey was not necessarily representative of the entire HPC alumni population. Despite this finding, later analysis did not note any significant differences in responses between genders, so we determined

this bias was negligible. The HDU survey had a greater proportion of female respondents. 32 females and 10 males completed the HDU student survey. Unlike the bias presented in the WPI student survey, the HDU students who have worked with WPI throughout the past ten years have been predominantly female, indicating no gender bias in the HDU survey. The results for this question are shown in Appendices H and I. Our sample of WPI respondents from each year are shown in Table 1.

Year	Number of Respondents
2014	2
2015	0
2016	1
2017	3
2018	7
2019	2
2020	1
2021	3
2022	10
2023	17

Table 1. Number of WPI alumni survey responses from each HPC year

We were unable to gather responses from 2015 due to a lack of student contact information from that year. The years 2014, 2016, 2019, and 2020 also had few respondents, with only one or two from each of those years. We noted that the averages from those years may not fully reflect the thoughts and experiences of their entire class. Most of our data was from 2022 and 2023, though there was also a notably high response rate from HPC alumni of 2018.

The HDU survey was split into two groups of students, those who were part of the buddy system program and those who participated in the MTM. The percentage of HDU students who participated in the years 2014 through 2018 that completed the survey was 24% and the percentage of HDU students that completed the survey from 2019 through 2023 was 76%. Most students who completed the HDU survey were from the MTM years. This is logical because more students participated in the MTM than the buddy system.

4.1.2 Student Motivation for Hangzhou Project Center Selection

The next question of our survey asks about student motivation for selecting the HPC, which provides insights into future recruitment directions, but also can be used to determine if motivation can impact the results of the experience. For this section, we included 2019 as part of the earlier period because the pandemic likely impacted students' reasons for choosing the project site more than the MTM did. These results are summarized in Table 2.

Motivation for Participating in the Project Center	2014-2019	2020-2022	2023	All Years
All Questions	3.77 ± 0.48	3.99 ± 0.46	3.55	3.65 ± 0.93
Geography	4.12 ± 0.60	4.56 ± 0.42	4.28	4.24 ± 0.76
City Setting	3.86 ± 0.54	4.67 ± 0.47	4.22	4.13 ± 0.77
Housing	3.29 ± 0.39	3.00 ± 0	3.22	3.24 ± 0.89
Interesting Projects	3.87 ± 0.45	3.25 ± 0	2.83	3.33 ± 0.89
Opportunities to explore a different culture	4.87 ± 0.19	4.67 ± 0.47	4.44	4.54 ± 0.88
Availability in desirable term	3.74 ± 0.39	3.78 ± 0.87	3.94	3.83 ± 0.96
Interest in speaking Chinese	3.36 ± 0.79	4.33 ± 0.47	3.94	3.72 ± 1.28
Fun activities & trips	4.09 ± 0.85	4.44 ± 0.42	4.17	4.13 ± 0.82
WPI faculty recommendations	3.30 ± 0.31	3.33 ± 0.47	2.33	2.57 ± 0.95
Peer recommendations	3.24 ± 0.32	3.89 ± 0.96	2.17	2.76 ± 1.05

Table 2. Mean response scores and standard deviations from WPI students on their reasoning to join the HPC, based on 1 (strongly disagree) to 5 (strongly agree) a Likert-type scale.

The two most prominent reasons WPI students chose the HPC were the opportunities to explore a different culture and geography. The two least prominent reasons were WPI faculty recommendations and peer recommendations. Other interesting trends include the following:

1. Housing did not tend to impact student interest
2. Student interest was somewhat influenced by faculty and peer recommendations for all years except 2023
3. Students from 2020-2022 seemed the most interested in the project site than other years, while students from 2023 seemed the least interested in the project site

The HDU student survey also asks about their motivation to join the program. These questions were only asked to the HDU students who chose to volunteer at the site. Given that the HDU students live in Hangzhou, some of these elements are different from the WPI student survey. The data we collected is shown in Table 3.

Reason	2014-2018
All Questions	4.25 ± 0.73
Interesting projects	4.50 ± 0.50
Opportunities to explore a new culture	4.50 ± 0.50
Interest in speaking English	4.30 ± 0.78
Interesting activities	4.50 ± 0.50
Teacher recommendations	3.90 ± 1.04
Peer recommendations	3.80 ± 1.08

Table 3. Mean response scores and standard deviations from HDU students on reasons for participating in IJP, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

We found that most of this data mirrors the WPI survey results. Teacher and student recommendations were the least impactful (but still very impactful) on student decisions to volunteer, with averages of 3.9 and 3.8, respectively. Students largely agreed they participated as volunteers for the experiences of interesting projects, exploring different cultures, and fun activities, which all had a mean value of 4.5. Based on the standard deviations, students tended to be more split regarding whether teacher and student recommendations impacted their decision to volunteer.

4.1.3 Professional Growth and the IQP Experience

The project also considered what level of professional skills students gained from their HPC IQP experience. These skills are important for the educational experience of the project and are core pedagogical outcomes, as outlined in Section 2.1 of the background. For this section, we included 2019 as part of the earlier period because the online format of the project likely had a larger impact on student experience than the MTM, as recognized by the literature on the weaknesses of online learning ((Bates, 2021) and (Donelan and Kear, 2023)). The professional growth results from the WPI student survey appear in Table 4.

Professional Skill	2014-2019	2020-2022	2023	All Years
All Questions	4.33 ± 0.39	4.05 ± 0.69	3.98	4.07 ± 0.73
Solving practical problems	4.20 ± 0.32	3.67 ± 0.47	4.00	3.87 ± 0.77
Project management	4.71 ± 0.39	4.11 ± 0.83	4.28	4.43 ± 0.61
Defining project goals	4.55 ± 0.32	3.89 ± 0.68	4.33	4.37 ± 0.70
Understanding client's needs	4.14 ± 0.51	4.33 ± 0.47	3.94	4.00 ± 0.81
Working effectively in a team	4.77 ± 0.29	3.44 ± 1.75	4.06	4.18 ± 0.80
Writing effectively	4.35 ± 0.37	4.11 ± 0.16	3.50	3.96 ± 0.78
Communicating well with others	4.52 ± 0.33	4.44 ± 0.42	3.89	4.17 ± 0.70
Professionalism	4.50 ± 0.43	4.44 ± 0.42	3.94	4.09 ± 0.72
Consideration of ethics in professional practice	3.94 ± 0.52	4.00 ± 0.82	3.39	3.63 ± 1.01
Maintaining effective working relationships	4.08 ± 0.45	4.00 ± 0	4.00	3.91 ± 0.69
Remaining flexible when faced with project changes	4.29 ± 0.27	4.67 ± 0.47	4.50	4.39 ± 0.57
Leadership	3.89 ± 0.53	3.44 ± 1.75	3.89	3.85 ± 0.91

Table 4. Mean response scores and standard deviations from WPI students on their professional skill development from IQP, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

Multiple trends stood out in this data. The first of these is a drop-off in writing effectively in 2023 and how two of the questions during the 2020-2022 had a very large standard deviation. Writing effectively not being developed for the 2023 students may be due to the report not being written at the time of the survey, while students were able to experience and improve their skills in other regards; this limitation is recognized in our methodology. For the 2020-2022 period, both leadership and working effectively as a team had a standard deviation of 1.75, indicating major disagreements among the responses for that time. These deviations were likely caused by the remote nature of those projects, where online education makes working in a team more difficult and less effective (Bates, 2021).

The HDU student survey also asks about professional skill growth from program participation. The data we collected is shown in Table 5.

Professional Skill	2014-2018	2019-2023	All years
All Questions	4.01 ± 0.78	4.06 ± 0.75	4.05 ± 0.77
Solving practical problems	3.80 ± 0.98	4.00 ± 0.79	3.95 ± 0.84
Project management	4.20 ± 0.98	4.00 ± 0.75	4.05 ± 0.82
Defining project goals	4.00 ± 1.00	4.06 ± 0.70	4.05 ± 0.79
Understanding client's needs	4.00 ± 0.63	4.03 ± 0.64	4.02 ± 0.64
Working effectively in a team	4.10 ± 0.54	4.28 ± 0.62	4.24 ± 0.61
Writing effectively	3.80 ± 0.98	4.00 ± 0.71	3.95 ± 0.79
Communicating well with others	4.30 ± 0.64	4.16 ± 0.79	4.19 ± 0.76
Professionalism	3.80 ± 0.98	3.91 ± 0.84	3.88 ± 0.88
Consideration of ethics in professional practice	4.20 ± 0.40	4.19 ± 0.73	4.19 ± 0.66
Maintaining effective working relationships	4.00 ± 0.77	4.09 ± 0.72	4.07 ± 0.74
Remaining flexible when faced with project changes	4.20 ± 0.60	4.06 ± 0.83	4.10 ± 0.78
Leadership	3.70 ± 0.90	3.91 ± 0.83	3.86 ± 0.97

Table 5. Mean response scores and standard deviations from HDU students on their professional skill development from IJP, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

HDU students had similar sentiments in their responses to professional skills development about being flexible when faced with project changes having the highest average of 4.2. They gained more skills in communication due to the program. For the 2014-2018 period, there was a standard deviation of 1.00 in defining project goals. This could be due to the buddy system and not having to assist WPI with project goals compared to the 2019-2023 period. Overall, there were no significant differences between the buddy system and MTM periods.

4.1.4 Personal Growth from the Hangzhou Project Center IQP Experience

We next examine whether the HPC experience influenced students on the personal growth level. Personal growth results are summarized in Table 6. The most notable outcome is that students participating in the program during the pandemic experienced substantially less personal growth than students participating in the program during the in-person years.

This is logical because the online nature of the project during that period likely made the experience less impactful to the students. Students believed HPC participation most impacted their personal growth by building new friendships and improving personal qualities. Students did not feel as strongly influenced to spur personal changes in their lifestyles and improving personal goals. There were no significant differences in the student responses between the two in-person

time periods.

Personal Skill	2014-2019	2020-2022	2023	All Years
All Questions	4.06 ± 0.42	3.14 ± 0.54	4.05	3.84 ± 0.90
Expanded my interests	4.06 ± 0.58	3.33 ± 0.47	4.11	3.87 ± 0.99
Improved my self-confidence	4.26 ± 0.27	3.00 ± 0.82	3.83	3.78 ± 0.86
Spurred personal changes in my lifestyle	3.62 ± 0.48	2.56 ± 0.42	4.11	3.57 ± 1.08
Impacted my personal goals	3.74 ± 0.46	2.78 ± 0.57	3.78	3.59 ± 0.99
Built new friendships	4.49 ± 0.55	3.67 ± 0.94	4.61	4.39 ± 0.79
Intellectual growth	4.03 ± 0.37	3.56 ± 0.42	3.72	3.78 ± 0.81
Improved my personal qualities	4.20 ± 0.20	3.11 ± 0.16	4.22	3.91 ± 0.80

Table 6. Mean response scores and standard deviations from WPI students on their personal skill development from IQP, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

Two main trends appear in this data. These include the overall lower mean responses from 2020-2022, which could be impacted by doing the projects remotely and having less of an opportunity for personal growth. The other trend is that self-confidence has decreased over time. This could be from the bias of the 2023 students not completing their IQP prior to completing the survey.

The HDU survey gathered results from similar questions as shown in Table 7.

Personal Skill	2014-2018	2019-2023	All Years
All Questions	4.00 ± 0.64	3.85 ± 0.91	3.89 ± 0.86
Expanded personal interests	4.30 ± 0.46	3.97 ± 0.95	4.05 ± 0.87
Improved self-confidence	4.10 ± 0.54	3.91 ± 0.91	3.95 ± 0.84
Spurred lifestyle changes	3.60 ± 0.80	3.63 ± 0.89	3.62 ± 0.87
Impacted personal goals	3.70 ± 0.64	3.66 ± 1.08	3.67 ± 0.99
Built new friendships	4.30 ± 0.78	4.09 ± 0.72	4.14 ± 0.74

Table 7. Mean response scores and standard deviations from HDU students on their personal skill development from IJP, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

There are some differences compared to the WPI survey data. The HDU students experienced more growth in personal interests with a total average of 4.05 compared to WPI students with a 3.87 total average. Otherwise, the all-year averages for each question were remarkably similar between the two surveys.

4.1.5 Satisfaction with Cultural Preparation

WPI students, in preparation for the HPC visit, are required to take ID2050 and a PQP course. In these courses, there are many learning opportunities and one of them could be cultural preparation for a visit to China. Note that for this question, we chose to split the time periods differently since students from 2019 visited China while students from 2020-2022 did not. The summary mean rating results for the response to cultural preparation appear in Figure H-1.

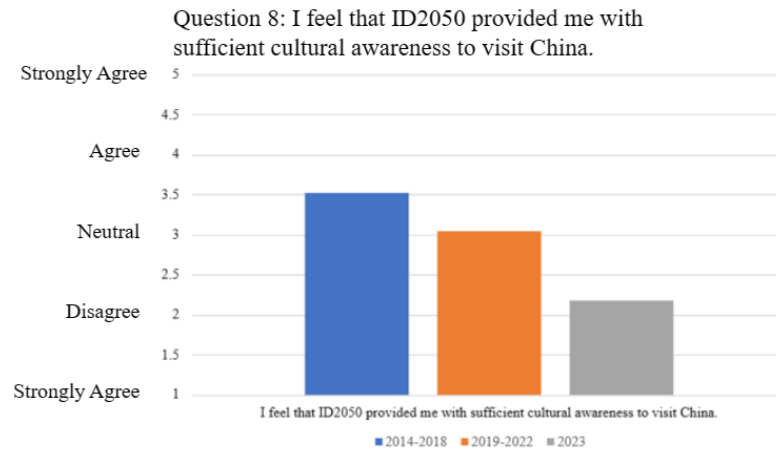


Figure H-1. Mean response scores and standard deviations from WPI students on their satisfaction with cultural awareness training in ID2050, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

Students from 2014-2018 reported a mean value of 3.52 ± 0.55 , which correlates to agreement. Student responses from 2019-2022 had a mean value of 3.04 ± 0.31 , which correlates to a neutral sentiment, likely because the students during these years never visited China or were not concerned about raising their awareness. Students in 2019 did not receive the same cultural preparation as students from 2014-2018, which is why 2019, despite also traveling to China, was not included in the previous period. Finally, students from 2023 reported a mean value of 2.17 ± 0 , which represents an average disagreement with this statement, and is the overall lowest average from all time periods. Satisfaction with cultural preparation might have decreased over time because of the pandemic affecting the necessity of a cultural preparation expert during ID2050.

4.1.6 Chinese Language Knowledge Before Coming to China

Whether Chinese language or knowledge preparation was sufficient, and its outcomes is now evaluated. The results show that from all years, 62% of WPI students had Chinese knowledge before the IQP while 42% of students took Chinese classes at WPI. Thus, a majority of WPI students who have come to the HPC have had some form of experience with Chinese before visiting China, while almost half previously took Chinese courses at WPI.

For students who were previously familiar with Chinese before coming to the HPC additional questions related to Chinese language knowledge were asked. Whether the HPC experience affected Chinese language skills and if Chinese instruction at WPI was useful was evaluated. See Figure H-2 for a summary of results.

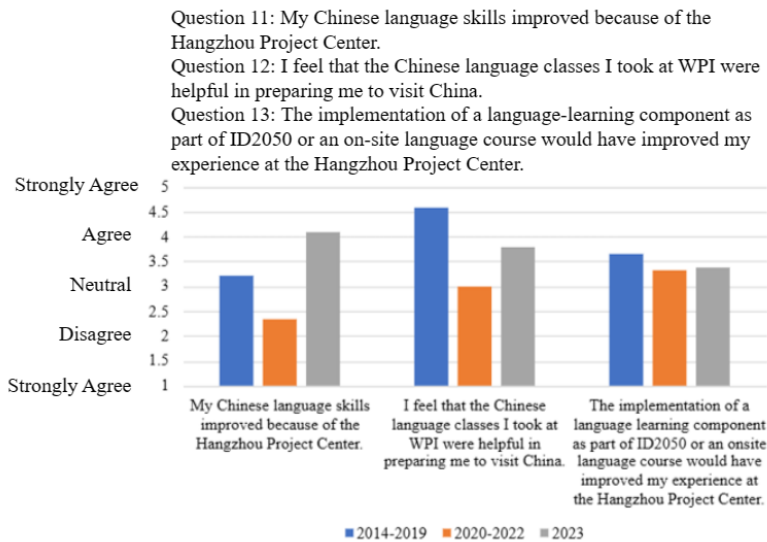


Figure H-2. Mean response scores from WPI students on questions related to Chinese language learning, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

While students from 2014-2019 and 2023 believed that their Chinese language skills improved because of the HPC with mean scores 3.22 ± 0.69 and 4.08 ± 0 respectively. Students from 2020-2022 believed that their Chinese language skills did not improve during their IQP with a mean score 2.33 ± 0.47 . This could potentially be because the students from 2020-2022 were unable to fully immerse themselves through living in China and had substantially fewer opportunities to practice their Chinese while completing their IQP project.

This result can be supported by literature mentioning how online learning has many more difficulties and challenges to learning, in comparison to in person (Bates, 2021) (Donelan and Kear, 2023). In addition, cultural immersion has strong benefits to learning a foreign language when a student can fully experience the traditions and customs associated with a language

(Karlık, 2023). There was a similar trend for whether WPI Chinese courses helped prepare the students to visit China. Students from 2014-2019 and 2023 believed their WPI Chinese courses prepared them to visit China with mean scores of 4.56 ± 0.31 and 3.78 ± 0 respectively, and students from 2020-2022 were neutral about whether their WPI Chinese courses prepared them to visit China with a mean score of 3.00 ± 0 .

Likewise, the HDU survey asked students about their English language skills before the program and whether their skills aided them in communication with the WPI students. A question about the implementation of a language learning component was not included, since HDU students did not have the availability to take a preparatory course. See Figure I-1 for a summary.

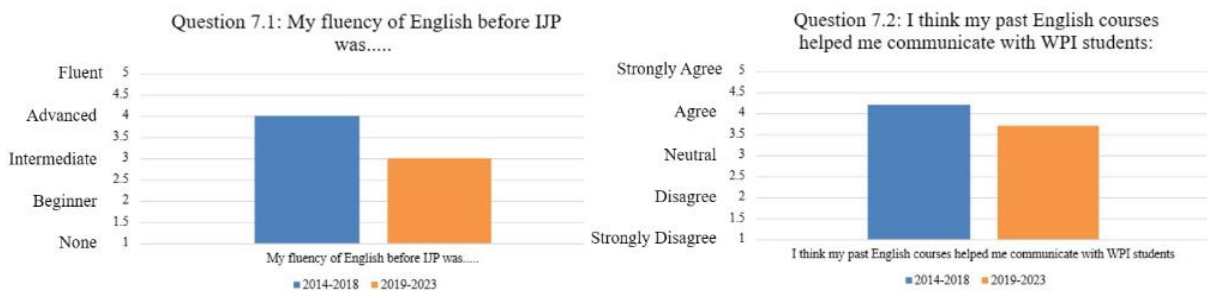


Figure I-1. Mean response scores from HDU students on their English fluency before IJP (left) and mean response scores on whether they think their English skills helped them communicate with WPI students (right), based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

The HDU students noted their English language ability and acknowledged that English courses helped them communicate with WPI students. Students from 2014-2018 said their English fluency was at an advanced level 4.00 ± 0.63 , while 2019-2023 only believed their English skills were intermediate 3.00 ± 1.03 . Students also agreed with a value of 4.20 ± 0.75 from 2014-2018 that their past English classes helped in communicating, while 2019-2023 had a value of 3.69 ± 0.78 .

4.1.7 Student Perceived Impact of Projects on Sponsors and Community

Our surveys also asked about the impact students perceived their project had on their sponsors and the community. Student perceptions of their project impact on sponsors and communities indicated whether their work had a greater benefit. The results for our WPI student survey are shown in Figure H-3.

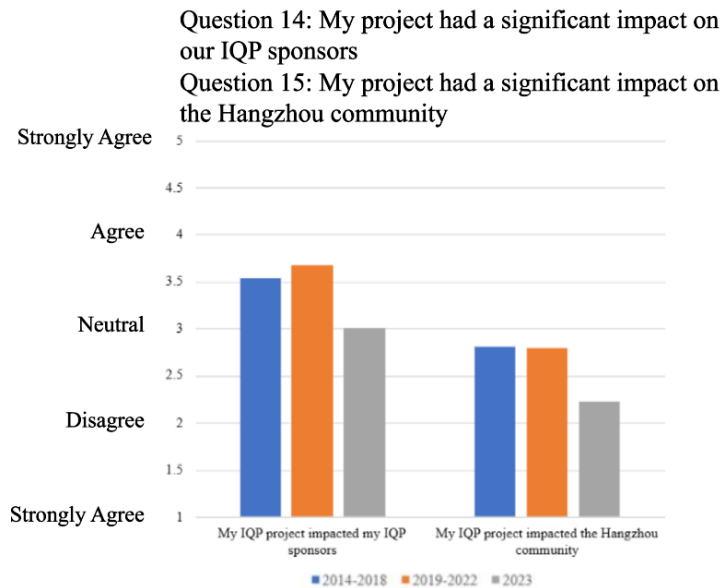


Figure H-3. Mean response scores from WPI students on their perceived project impact on their sponsors and the Hangzhou community, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

Students from 2014-2018 and 2019-2022 thought that their IQP project impacted their sponsors, with mean values of 3.53 ± 0.28 and 3.67 ± 0.42 respectively. However, students from 2023 were neutral about their IQP project having an impact on their sponsors, with a mean value of 3.0. This is because at the time of our data collection, students from 2023 had not yet fulfilled or provided any final project results.

In a similar trend, students from 2014-2018 and 2019-2022 leaned towards disagreeing that their IQP project impacted the Hangzhou community, with mean values of 2.81 ± 0.61 and 2.79 ± 1.23 respectively. Students from 2023 disagreed even more with the statement than the previous years, with a mean value of 2.22. This could likely be explained by the business focus of the HPC, since many previous projects provide deliverables for a business, not often to a community. However, the high standard deviation for this question indicates that there is not agreement among students, possibly because while most projects are focused towards impacting a business, some also provide positive impact to community focused groups and businesses.

The HDU student survey had similar results as the WPI survey. But the HDU student survey asked about the project’s impact on the Hangzhou community rather than the impact on students. The results are summarized in Figure I-2.

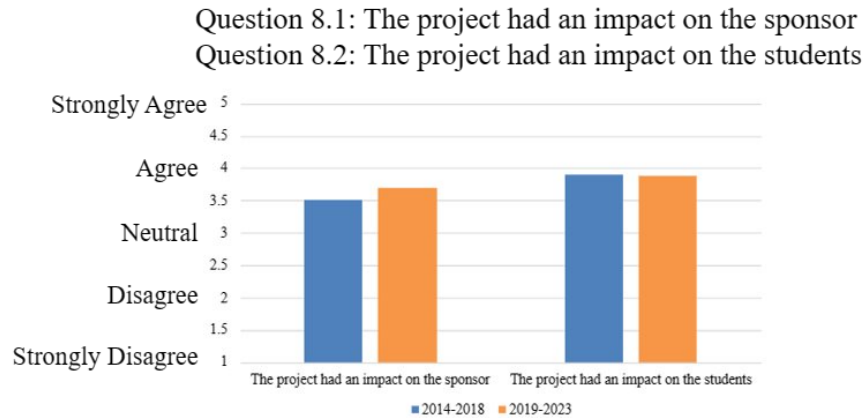


Figure I-2. Mean response scores from HDU students on their perceived project impact on their sponsors and the Hangzhou community, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

We found that the HDU survey gathered similar results regarding the impact on the sponsors with mean values of 3.5 ± 0.67 and 3.69 ± 0.85 , respectively. We also discovered that HDU students feel that the project has a high impact on students with averages of 3.9 ± 0.54 and 3.88 ± 0.78 .

4.1.8 The Mixed-team Model at the Hangzhou Project Center

MTM model queries were only asked for students from 2019 to 2023, since they were the only ones to have officially participated in the MTM. These questions asked respondents to rate their experiences based on a 1 (very negative) to 5 (very positive) experience. Overall, WPI students had a positive experience with the MTM, with an average response of 3.86 ± 1.10 from all years combined. This shows that overall WPI had some disagreement over the overall experience of the MTM. The HDU student survey yielded similar results with a mean of 4.00 ± 0.67 .

Experiences for students across a variety of dimensions for both WPI and HDU students are summarized in Figures H-4 and H-5.

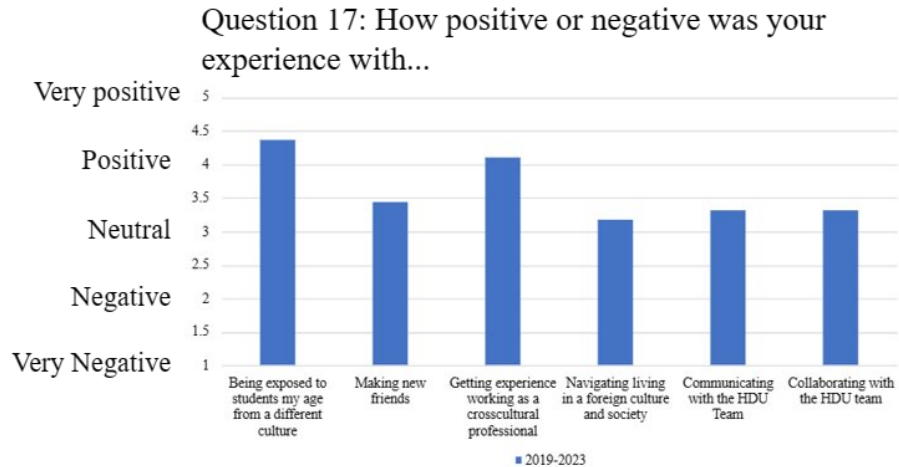


Figure H-4. Mean response scores from WPI students on their general experience with the MTM, based on a 1 (very negative) to 5 (very positive) Likert-type scale.

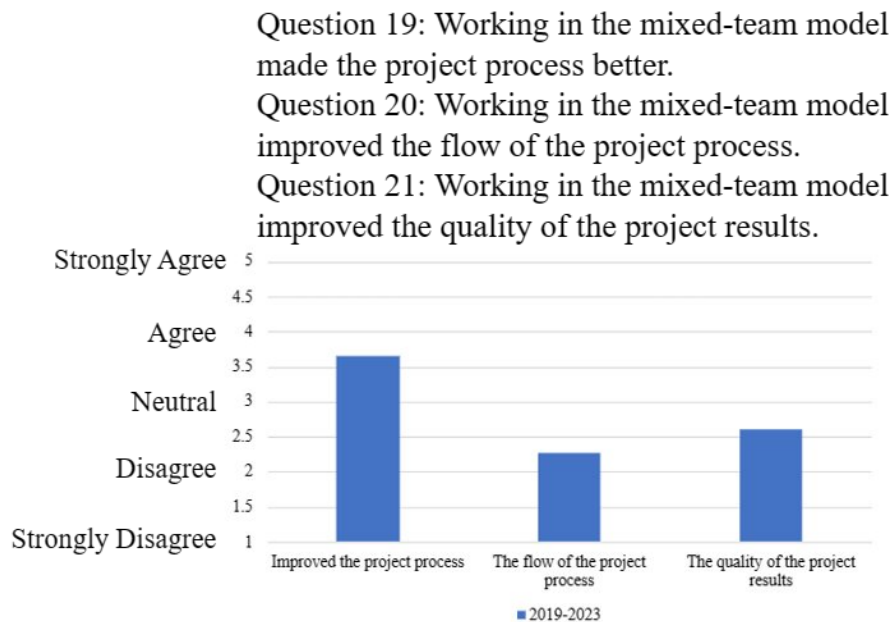


Figure H-5. Mean response scores from WPI Students on their experience with the MTM regarding workflow, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

Students had the most positive experiences with the MTM regarding “being exposed to students their age from a different culture” and “making new friends”. They had the least positive experience with the MTM regarding it improving the flow of the project process and the quality of the project results.

The HDU student survey results regarding their experience with the MTM are shown in Figure I-3.

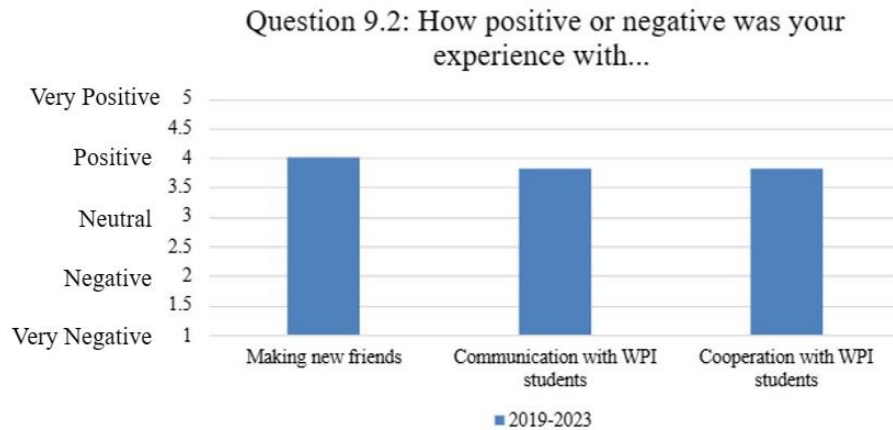


Figure I-3. Mean response scores from HDU Students on their general experience with the MTM, based on a 1 (very negative) to 5 (very positive) Likert-type scale.

We found that the HDU students had more positive experiences than WPI students within the topics of making new friends, communication, and cooperation.

We also collected data regarding the size of the mixed teams to determine if they should be smaller, kept the same size, or larger. The average response of all MTM years was 3.7 ± 0.81 , suggesting the mixed teams are too large, although 2022 had a neutral sentiment. The HDU students agreed the size of the teams were too large with an average of 3.88 ± 0.83 .

4.1.9 Student Recommendation of the HPC

Our final questions asked if WPI students would recommend completing an IQP at the HPC and if HDU students would recommend taking the IJP. The purpose of this question was to get an overall look at the contentedness of the students with their experience with the HPC. The data for this question is shown below in Figure H-6.

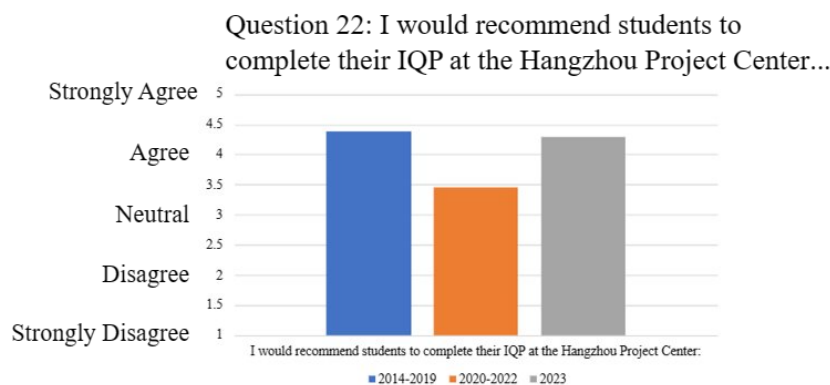


Figure H-6. Mean response scores from WPI Students on their likelihood to recommend the HPC, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

WPI Students from in-person years answered very positively to this question with a mean score of 4.36 in the 2014-2018 period and 4.28 in 2023. Students from 2019-2022 were also positive in their response to this question, but notably less so than the other years with a mean score of 3.71. As mentioned before, less positive HPC experiences could be associated with the online format of the program during the pandemic, as students were unable to travel to China to enjoy the culture. We also found that HDU students would generally recommend participating in the IJP with a mean of 4.33 ± 0.64 .

4.2 Student Experience Interviews

In addition to a survey, our group completed five interviews with a mixture of HPC alumni and current HPC participants. The purpose of these interviews was to collect more detailed qualitative information regarding specific experiences and memories from their IQP experience; the interview questions are included in our student interview protocol (Appendix J). Student interviews were sorted according to the following themes: cultural preparation and experience, professional experience, and experience with the buddy system and MTM.

During the first period of 2014-2018, students were in person at the HPC, but HDU students' participation in the project was limited to the buddy system. However, this only affected the experience with the buddy system and MTM theme; otherwise, the cultural and professional experiences should be like those of other in-person years, 2019 and 2023.

The first theme was cultural preparation and experience. Students from 2014-2018 generally believed that the cultural preparation they received during ID2050 was lacking. One student from 2017 stated that the cultural preparation in ID2050 "was okay", but they "[already knew] some things about Asian cultures, so maybe [for] someone who's never experienced Asian culture it could've been improved". Another student from 2018 stated that the ID2050

preparation “could be improved in a practical sense” since they “learned about communism and Mao but not practical things like [often having] no personal space [in public spaces]”. Overall, students believed that teaching more relevant information during ID2050 regarding living in China would have made it easier for them to acclimate once they arrived in the country. While in Hangzhou, the students we interviewed unanimously had a positive cultural experience. One student stated that the “cultural experience was a good thing and had an impact on her”, while another student said that by living in Hangzhou, they “gained a greater appreciating for what other students experience”.

Regarding the second theme of professional experience, students had mixed opinions regarding how much they improved in a professional capacity from their time at the HPC. One 2017 student had an especially difficult time, stating that regarding teamwork, “there [were] extra challenges with the living situations and teams”, and that “some drama involved teams being together a lot of the time”. This suggests that this student’s professional growth was heavily impacted by poor team dynamics, though they also said that “professionally [they did] not [experience] much growth [because the] project wasn’t related to [their] field [of study]”. Contrasting this experience, a student from 2018 noted that their “team worked very well together”. They also said that the project “greatly improved [their] writing”, taught them to manage their time because their project was more “self-driven”, and “introduced [them] to bureaucratic things they needed to [know]”.

For the third theme of experience with the buddy system and MTM, we found that the first four years were the only years in which the buddy system existed independently from the MTM. Interviewed students from this period had overwhelmingly positive things to say about their experience with the buddy system. A student from 2017 enthusiastically said that “the connectivity with the buddies was the best part [of the IQP experience] for [them]”. They elaborated on how they not only enjoyed the buddy system but also formed strong connections with some of their buddies, maintaining contact long after the IQP concluded. The students also appreciated the “English corner offered every week,” where they engaged with HDU students in both English and Chinese. Upon learning that current students participate in the program through the class, they opined, “Interest-based volunteers seem to be more effective to some extent than students from the class.” Another student from 2018 had a similarly positive experience. They informed us that having an “individual buddy really made the experience a lot richer and better”, and that their “experience was greatly improved by the buddies”. However, they did note that while “some people were really close with their buddies, some were like ‘I’m here to help you survive in China and that’s it’”. Thus, it seems as though students’ experiences were greatly influenced by their buddies, but only if the buddies were interested in interacting with the WPI students.

The transition to the MTM in 2019 marked a pivotal change in the HPC student experience. Despite the potential similarity between the student experiences in 2019 and 2023, both being in-person years using the MTM, it was challenging to locate students for interviews

from 2019. One plausible explanation could be the notorious difficulty of that year, potentially making alumni less inclined to participate in interviews.

Regarding cultural experience, the consensus from 2019 was that more practical cultural preparation would have been very helpful. One student stated that “[they were] told [that they] could pay with cash, but when [they] flew in [they] found that everyone uses QR pay instead. It took [them] weeks to get regular access to this as noncitizens, and many places would not accept cash. [They] were also told... that many people would speak English, but [they found that] this was also not the case”. The student stressed that more accurate and detailed cultural preparation could have greatly enhanced their overall experience. They also suggested incorporating training on the use of translator apps as a helpful addition.

The student did not comment on their professional experience at the project center.

For the experience with the buddy system and MTM, the student did not have a positive experience. They stated that “the HDU student [had] a lot more classes and [that] this [class] was just one small portion” and that “they also had no exposure to [the WPI students’] work prior to [the WPI students] showing up.” The student felt that the teams were too large, proposing a shift towards smaller groups for more informal assistance, without the pressure of being a graded class for HDU students.

Between 2020 and 2022, the abrupt shift to an online format due to the COVID-19 pandemic significantly impacted the student experience. Completing the IQP remotely meant they couldn't be on-site in China, and all interactions with sponsors and HDU students were conducted via Zoom.

Reflecting on the cultural experience during the pandemic, students noted their inability to provide insights as they didn't reside in China during their IQP. One student noted that they took up to Intermediate III in Mandarin classes at WPI but found that they “[were] only able to really use it in WeChat messages [with HDU students]. Due to the limited interactions with HDU students caused by the online format of the program, students said that the interactions they did have with HDU students were more professionally focused as opposed to culturally.

In terms of professional experience during the pandemic, students generally found value in their participation in the program. One student said that the “interviews, Gantt charts, weekly meetings, [and] writing were very useful to learn and practice”. They also said that “sponsors overall were pretty good with communication except for a few”, and that “this is a strength of the Hangzhou Project Center”. However, they also noted that their sponsor “wasn't very direct with [their] group about project details and wasn't direct about if [the students] were on target”; The student attributed this to a perceived cultural difference between China and the US. Despite the online format, students were content with the skills acquired through their IQP experience.

Regarding their experience with the MTM, students who participated in the program during the pandemic thought “it was interesting to work with [the HDU students], but they didn't

really impact our project". Students noted that due to the remote nature of the project, the HDU students were very helpful in collecting data from people in China. However, the consensus was that WPI students "didn't really work too closely with [the HDU students]", and meetings were only held once or twice a week. Fortunately, students noted that communication was not an issue as there were some fluent speakers in the cohorts, and any communication through WeChat could be translated using in-app features.

The current year, 2023, marks the first year of the in-person MTM following the reopening of China to foreigners. This year's feedback becomes particularly crucial, as it likely mirrors the experience of future students.

Regarding cultural experience, students from 2023 expressed dissatisfaction with the cultural preparation received during ID2050 for living in China. One student said that the cultural preparation was insufficient and that they "spent so much learning about businesses that [they] never learned things for the individual". We asked the student to elaborate on this sentiment. They said "[Professors teaching ID2050] brought [the students to China] with no considerations for [the WPI students being] foreigners", meaning that the students felt unprepared for multiple facets of life in China like the squat toilets. They went on to say that "[they] couldn't find where things are [and] how to communicate needs", such as needing medicine like painkillers. They thought that the cultural preparation would have been better with more emphasis on how to live life in China, including using a translation app and becoming comfortable with rudimentary Chinese. Another student also stated that the ID2050 cultural preparation was "not effective enough to prepare students for China because of all the preconceived notions that American students have about China", and that the "overall sentiment in the US [towards China] makes it difficult to truly understand what China is like".

Concerning professional experience, the students interviewed believed they gained valuable teamwork and business-related skills. One student highlighted that although "[they have] a lot of roles with similar topics and practices at WPI", they appreciated getting "practice in actual professional skills for a job later on" and "practice working with professionals versus students". Another student believed that they got "more out of the project academically and professionally in A term than in B term" since they believed their project team accomplished more during A term.

Finally, opinions on the MTM were varied. One student found it challenging to work with HDU peers due to a lack of structure and poor communication about the collaborative model. They said it was "very difficult to work with [their] HDU peers" because "there is no structure" and it is "poorly communicated to all students what the collaborative model would be". The student stated that although the students were given the freedom to decide how closely the WPI and HDU teams worked together, "there needs to be at least a backbone of what is expected out of the HDU students". Another note they made was that "within the WPI team you have to manage different backgrounds, work ethics, and other things, [which becomes] even

more difficult with the HDU team in addition”. They stated that their group struggled to adapt to this additional team dynamic, in addition to managing their smaller sub-team dynamic. In contrast, another student had a more positive experience, citing good contributions from their HDU group in data collection. They said “[their] HDU group contributed a good bit”, and that “collecting data with them was good and helpful”. However, they said they believed that “producing a product with [the HDU students] isn't very helpful or useful”. They also believed that although “year-to-year experiences [would] make [each group’s experience] different”, they thought that there was “not good leadership” and that the “teams need better structure and leadership”. Overall, students unanimously agreed that the MTM would benefit from improved guidance and expectations for team collaboration.

4.3 Sponsor Experience Interviews

We completed nine total interviews with past and current HPC sponsors. As expected, our group encountered issues in contacting sponsors, but most of these issues were overcome through networking or scheduling interviews through mutual contacts. We aimed to interview sponsors spanning several years to prevent viewpoints from being consistently influenced by an extraneous factor. Before conducting interviews, we researched much of the HPC history which enabled us to ask personalized questions about the sponsors' experiences depending on the year they participated.

2014 to 2018 marked the first years of the HPC operating. In this beginning era, many of the sponsors were HDU faculty, and they stated that their participation in the project was due to Professor Shen directly asking them to be involved as a sponsor. Additionally, due to the buddy system in place during this period, one sponsor felt “that HDU students [were] not fully involved in the project”, so they recommended that “HDU students [no longer be] volunteers, which [would] keep them motivated and active to participate in the project... [and combine their involvement] with the curriculum, so that the organizational form of the program can be combined with the specialized courses of HDU”. Generally, sponsors during this period found the projects “very satisfactory” but saw it more as a volunteer opportunity to “learn about foreign education”, as opposed to the project providing any tangible benefit to their organization.

2019 was the first year that the HPC implemented the formal MTM, with HDU students receiving course credit for their contributions to the project. Sponsors during this year noted that there were multiple learning curves the student teams needed to overcome, including work-life balance and work distribution when working with the joint teams. Sponsors ultimately believed that the HDU students made many valuable contributions to the team since they could help provide guidance regarding language and cultural issues. They recognized the value of the MTM as necessary for data collection, as factors such as the language barrier “proved much more difficult than expected and were only possible due to the HDU students”. This sentiment was not universal though, and some sponsors expressed disappointment in team cooperation. One

sponsor noted that there seemed to be “two types of HDU students working on the project: those interested and those not interested, [arising] from the different incentives that the WPI/HDU students are given”, most notably in course credit. Outside of the MTM, the sponsors from this year were still very content with the final product they received.

Due to the pandemic from 2020 to 2022, the HPC had to either switch their sponsors to an online format or find entirely new sponsors. One sponsor said they became involved because “it was very difficult for the university liaison to find [other] sponsors” due to the pandemic, although the HPC maintained many recurring sponsors throughout this time. The willingness of sponsors to continue sponsorship through the pandemic may suggest that the remote nature of the project did not subvert the sponsor’s expectations. Sponsors from these years agreed with the MTM sentiment, in which they expressed that HDU students were not as involved in the project as they initially expected.

Current-year (2023) sponsors have been satisfied with the work the mixed team is completing in China. They have stated their reasons for participating more closely align with wanting to have young international minds in their workplace, as opposed to doing a favor for a contact, which was more common in the initial years of the project center.

Since the beginning of the pandemic, sponsors have continually noted that the WPI advisors have been “very valuable as advisors for this business IQP because they have a good understanding of the business world”. Multiple sponsors noted that the WPI students were very polite, professional, flexible, and efficient. One sponsor noted that they would have preferred “business/marketing majors working on the project rather than only computer science and engineering students”, and that “a business background would better suit [their needs]”.

However, present-day sponsors unanimously said they would have liked to see more involvement from the HDU students in the project, as they “do not really talk with the HDU students”, and they seem to “take on a supporting role to the WPI [students]”. One sponsor noted that “[have] seen so little value from the HDU students” in comparison to the WPI students. They believed that this stemmed from the differing educational models between the two universities: “Western [education] teaches students to learn for themselves, [and] WPI [students] have more self-learning skills”. Historically, HDU student involvement and preparation was not a notable concern of sponsors, suggesting that this is a more recent issue.

The first section of data from our sponsor interview analysis is focused on sponsor interest and how they became sponsors for projects. We found that sponsor reasons for being a part of the HPC could be split into two different categories: one for sponsors who more personally knew the liaison from HDU and another for those who wanted the insight of international students for their businesses. Of those who knew the liaison well they all worked or studied at HDU in the past. The liaison was noted for being a “charismatic individual and was enthusiastic about the IQP learning experience”. This granted the opportunity for the liaison to acquire many sponsors for past and current projects at the HPC. For the other category of

sponsors, we found that these businesses often were international companies or businesses that wanted to have the knowledge of students taught in the United States for guidance and inspiration for their businesses. These sponsors would describe these projects as an “opportunity to learn from American students.” This gave them an incentive to sponsor because the IQP experience allows for them to directly work with American students. Even those who sponsored because of their connections to the liaison also mentioned the usefulness of learning from the WPI students. The concept of learning from American students from our analysis is a common theme among the sponsors and their reasons for participating in the program.

We also determined how the sponsors felt about the overall project and their outcomes. From the data we collected we found that sponsors were extremely satisfied with the professionalism the teams had, especially when it came to presentations, formal meetings, and preparedness.

Most sponsors were “very impressed with the professionalism of the team” and most noted how happy they were with the knowledge the WPI students came into the projects with. Other sponsors had mixed feelings about the results of their projects but often they understood that the IQP is a learning experience. Although they did not receive the exact results they wanted, they were overall content with most of the work that was done.

Some sponsors felt there was a lack of communication at times with the teams, mentioning how they would sometimes not be a part of discussions about the team’s progress or given updates consistently. However, this was only mentioned by a few sponsors from different years of the HPC, meaning that this factor was likely dependent on the individual student groups rather than representative of the HPC.

Our final key section of data comes from the MTM questions in our interview protocol (Appendix D). From the six sponsors that were involved during the years of the model, we were able to determine sponsor opinions for the combined WPI and HDU teams. From the interviews, we found that the sponsors were satisfied with the use of native speakers from HDU to translate documents and interviews to make more comprehensive presentations, interviews, questionnaires, and more.

They noted how it was an improvement over the use of translation apps because the language was more grammatically correct and easier to read. Of the sponsor interviews that were completed, we found that most sponsors noted a few areas of improvement that did not yet meet their expectations. These included a lack of communication with the HDU student teams and discrepancies in the quality of work. Many sponsors noted that they rarely worked directly with the HDU students and often were unsure of their involvement in the project.

This quotation from one of the interviews gives a fair representation of this topic. “I have no idea how the HDU students impact the project, besides from questionnaires and interview translations.” We also found that most sponsors assume that “the HDU students take on a

supporting role to the WPI students.” Even with these issues sponsors overall were satisfied with the outcomes of the projects.

4.4 Faculty Experience Interviews

The final component of data analysis for this project is centered around WPI faculty members who have been involved with the HPC. We were fortunate to interview 9 WPI advisors and 3 HDU advisors who have worked for HPC, allowing us to observe the transformation of the HPC over the years. Before conducting interviews, we researched much of the HPC history which enabled us to ask personalized questions about the advisors' experiences depending on the year they participated.

Throughout the decade of faculty advising at Hangzhou we found that the initial years of a project center are most vital for its establishment. 2014 to 2016 saw the first stages of HDU and WPI student relations with the buddy system and the need for aid in translation within projects. We also observed that a common sentiment is that the project center has a notably different project focus than most other IQP project centers. One advisor framed disappointment with the projects by claiming that “IQPs should be centered around humanitarian or social issues, not businesses.” However, this sentiment is not universal. Another advisor praised the projects, claiming that “there are many challenges in recruiting project sponsors, but [the liaison] is doing a great job at finding them!”

We also noted the value of the buddy system between 2017 and 2019 and heard accounts of how difficult technology proved to be for foreigners. One faculty advisor said that “the buddies did so much to assist all of [them] during [their year], and the project center would likely have seen very little success without them. Even things like mobile payments did not always work for [them], so there were times when [they] literally had no money. The buddies were a lifesaver”. WPI and the Global Experience Office did not give any warning to students about this, and there was little warning about the limited use of WPI web applications in China. Even advisors felt similarly ill-prepared to live in China, saying that they “were not told anything about the culture difference” and were unaware of differences they would encounter in China, such as the politics and bad air quality. Being in China during this time was “really hard” for advisors.

From 2020 to 2022, the HPC had to adapt to a remote system, which faced advisors with many uncertainties. Advisors had difficulty trying to organize teams in different time zones, and they did not become so familiar with their students. Advisors during these years also observed that “student well-being varied greatly based on their desire to pursue face-to-face interactions” and so their takeaways from the project center also differed. In addition, advisors during this time observed that “many students were still busy working jobs and had great difficulty

disengaging from the practical realities of home life to experience a new environment.”

Advisors also noted a lack of communication between sponsors and student teams. They found that many sponsors had been praising the quality of projects but continued altering the project scope due to dissatisfaction. These changes would most often come after the sponsors had already agreed to student project proposals in the prior academic term. These inconsistencies often caused notable distress to students who needed to change their project methods with limited remaining time. It also made advising more difficult. One advisor said, “The scope of the project should be consistent from A term to B term to reduce stress and frustration.” However, this individual also commented that even through those challenges “there are opportunities for students to gain more knowledge about what can happen in the real world.”

4.4.1 Key Themes and Trends Among Faculty

We identified six consistent themes across our faculty interviews. These themes are cultural preparation, project relevance, advisor roles, communication, sponsor expectations, and adaptability. For this section, we followed a protocol of analysis that uses these themes to support our insights in creating recommendations. We will discuss the six themes in more detail to provide context and understanding.

The first theme of discussion is cultural preparation. Our notes consistently underscore the challenges stemming from a lack of language expertise among advisors. This deficit often made assistance from Chinese speakers necessary, and some advisors found themselves leaning on their students for cultural awareness and language assistance. All interviewed faculty agreed that at least one advisor must have a comprehensive understanding of the language and cultural nuances to facilitate a smoother experience for WPI students and in emergencies.

Advisors also had negative opinions on the relevance of HPC projects. The consensus among interviewees is that the HPC projects failed to “align with the educational goals of the IQP while making a tangible difference to society”. Some adamant advisors called outright for an end to “sketchy projects like crypto mining and Ponzi schemes” to focus on projects with a discernible community impact.

Advisor roles are also at the forefront of student education. While advisors do not necessarily need to be culturally or linguistically competent, advisors must be knowledgeable in their field and able to provide useful insights to students. Since this project site has a strong business orientation, faculty unanimously agreed that the most educational value will come from advisors with a business background.

Communication skills are also a key concern of faculty. Especially during the preparatory term, a lack of communication between the HDU and WPI students led to an unclear establishment of collaborative expectations. Consistency in communication methods, as well as a

better-defined plan for HDU students during this term, are necessary for effective cross-team communication.

Another theme was the importance of sponsor preparation and understanding of the IQP's educational nature. Concerns regarding inconsistent sponsor involvement, self-serving project goals, and unclear expectations underline the need for a mutual program understanding. A recurring call to inform sponsors of the purpose of the IQP early in the student planning process is necessary to maintain satisfaction for all parties.

Finally, our interviews stressed the importance of both advisors and students being flexible, particularly when sponsors alter project scopes. The importance of maintaining a shared vision throughout the semester ties into the sponsor preparation and communication aspects listed above, however, students must be prepared to approach any challenges that may arise. Consistent adaptability is viewed as essential for fostering a positive and constructive learning environment.

These key themes were the main points of concern for all faculty interviewees. Besides these sentiments, there were not many areas of conflicting opinion regarding the HPC. Faculty backgrounds will be factored into our later recommendations, but these are the top areas of notable concerns and themes for the HPC.

4.5 Conclusions

Following data collection and analysis, our next objective was to draw conclusions from our data to inform our recommendations. Our team did this by reviewing the key points of the student surveys and interviews, sponsor interviews, and faculty interviews and summarizing the main themes across all our primary data. These themes, or conclusions, effectively highlight the most important topics within the data, to be further critiqued in our recommendations.

4.5.1 Positive Cross-Cultural Impact on Students and Advisors

From the student survey, we found that the main reason WPI students want to travel to China for their IQP project was because of the different culture and geography. These are the same reasons advisors were interested in the HPC. When in China both students, in surveys and interviews, and advisors had an overall positive experience with Chinese culture. Advisors mentioned how they enjoyed being a tourist and exploring the many amazing sights in China, they also enjoyed meeting other professionals from HDU. Students expressed how the experience at the HPC helped build new friendships, with other WPI students and HDU students, and some students from 2014 to 2018 are still in contact with their buddies many years after leaving China.

4.5.2 Insufficient Cross-Cultural Preparation for Students and Advisors

One of the most negative survey results was for the question “I feel that ID2050 provided me with sufficient cultural awareness to visit China”. Responses from 2014 to 2018 had an average of 3.5, meaning that they did agree that ID2050 sufficiently prepared them, however, it is not a strong agreement. Following this, 2019 to 2022 had an average of almost 3, being entirely neutral. Then 2023 had an average of 2.17, meaning that they disagreed that ID2050 prepared them to visit China. These results showed a trend of recent students feeling more unprepared to visit China than students from earlier years. In student interviews, this was expanded on by multiple students. Even from 2014 to 2018 students said that the cultural prep could have been improved for them to be more practical, this view was strongly supported by students interviewed from 2023.

Students were not the only stakeholders to have trouble due to a lack of cultural preparation, as advisors often experienced issues from not understanding the culture. Many past advisors were reliant on Chinese student buddies to navigate China and experienced great difficulty with Chinese culture during years where neither of the WPI advisors could speak Chinese.

4.5.3 High Professional Value of Projects to Students

From our data collection, we concluded that the professional experience for students was generally very good and that some minor adjustments would make it even better for all parties involved. In our student survey and interviews, student responses suggested that students benefitted greatly from their professional experience at the HPC. From our survey, students most agreed that their project management skills and ability to deal with project changes improved.

During student interviews, students echoed this sentiment and noted the value of the real-world experience they get with this project, through working with professional organizations. Student interviews also indicated that team dynamics heavily impact how much students gain from the project. Students in groups with poor team dynamics tended to gain little from the experience professionally, while students in groups with good team dynamics gained substantial amounts of professional experience from their projects.

4.5.4 Misaligned Sponsor Expectations

Our data revealed that sponsors are generally indifferent to the student project deliverables that they receive, but the deliverable quality tends to improve over time. Interviews with sponsors reveal that projects have little value to their organization but provide their company with the valued insights of international students or an opportunity to share their knowledge and experience in a mentorship role with students.

Sponsors who are less satisfied with the IQP have expressed that deliverables do not satisfy their project expectations. The purpose of the HPC must be made abundantly clear to new

sponsors so all stakeholders share a common vision. This situation reflects our findings that sponsor expectations sometimes do not align with the educational model of the IQP. This result occurs in self-serving project goals or unclear research expectations that disagree with other stakeholder expectations. Student survey information said that students usually did not believe that their projects had an impact on the Hangzhou community. Recurring sponsors express that projects improve over the years because they have experience facilitating projects and gain a clearer idea of the educational program goals over time.

Aside from these issues, sponsors expressed that while WPI student preparation is good, they believe communication should be improved. Sponsors noted a lack of project involvement from HDU students and a lack of outreach communication from students to discuss goals. Advisors disagree with this perspective, citing that sponsors tend not to communicate clear objectives with students, either.

4.5.5 Improvements to the Mixed-Team Model

The primary data results showed that students generally believe the MTM is a valuable part of the experience at the HPC because it provides an opportunity to connect with similarly aged students in China. This opportunity was the most highly rated aspect of the buddy system as well. WPI students believed that their IQP experiences were often greatly improved by their interactions with the HDU students outside of their professional relationships. For this to happen, WPI students believed that HDU students had to be genuinely interested in making connections, which could be more common if the students participated on a voluntary instead of a compulsory basis.

However, the successful collaboration of student teams within the MTM was limited for a number of reasons. From our student survey and interviews, students believed that the mixed teams were too large. Students stated that it was difficult to work effectively with such a large group due to the lack of guidance regarding how the two teams were meant to cooperate. In interviews, students stated that more structure would help the two teams understand how they could best work together.

WPI students in interviews had mixed impressions of how much the HDU students contributed to the project, but they agreed that HDU students were very helpful in data collection, specifically from the Chinese sources. WPI students also believed the expected level of commitment to the project was poorly communicated to the HDU students.

This sentiment considered that participation in the program was only one of many classes the HDU students were taking at a time, which made fair workload distribution challenging. Further, Sponsors often stated that they rarely interacted with the HDU students and were unsure of HDU student roles within the project, suggesting that the role of each group of students was often ambiguous. All these limitations and benefits also match the research we conducted on cross-cultural teamwork as mentioned in section 2.4 of our background.

5. Recommendations, Challenges, and Summary

In the final section of our report, we state our four recommendations for improving the HPC for the future. We then describe the challenges faced during the execution of our project. We then provide a final summary to conclude our project report.

5.1 Recommendations

Recommendations for improving the HPC arise from an assessment of the three main stakeholders, students, sponsors, and faculty of the site. The following four recommendations are for the project center directors and the liaison of the site to improve the overall HPC experience and the Global Projects Program experience. The below recommendations are derived from the data collected through the student surveys and interviews, sponsor interviews, and faculty interviews; some are supported from the background literature.

5.1.1 Recommendation 1: Cultural preparation during ID2050 for students traveling to Hangzhou should be improved.

Both students and advisors who were interviewed agreed that the cultural preparation for traveling to a country so drastically different than the United States needs to be improved. Cultural preparation is a crucial part of the preparatory phase of the IQP, and is highly important for cross-cultural learning in a foreign environment (Goldoni, 2015). Students from 2023 especially said that they needed more cultural preparation and were unaware of common Chinese norms.

To improve the cultural preparedness of students and advisors, we provide multiple recommendations that can better prepare stakeholders in the future. Firstly, before 2019, advisors noted how there was an expert who would often come into their ID2050 class and teach language and culture to students. Students from this period also reported being more prepared than students post-2018. Bringing in an expert on China or a previous HPC student to teach students a little bit of culture during ID2050 would likely improve overall student preparedness. This expert could also inform students of common unexpected experiences such as how some Chinese citizens will stare at or take nonconsensual pictures and videos of foreigners.

Secondly, students in ID2050 should be better informed about the China Hub and the various activities that it runs. Students should be encouraged to attend these events to learn more about China. Students would be more likely to attend if there were a strong motivation to attend these activities, such as extra credit in ID2050. The China Hub could also focus on making A-term activities more focused on modern Chinese living.

Thirdly, students have expressed how lessons on using different Chinese apps such as translators, Alipay, Meituan, and Taobao would have greatly improved their experience.

We strongly recommend that the GEO office enhance the clarity of information on the Hangzhou eProjects page concerning accessibility accommodations, allergies, dietary restrictions, and sensitivities. The current content within the "Allergies, Accommodations, and Special Circumstances" section lacks specificity, mirroring other project centers without

addressing the unique considerations in Hangzhou. Given that the eProjects site serves as a vital resource for WPI students navigating the IQP application and site selection process, the Hangzhou project page must provide comprehensive insights. Currently, there is an absence of information on accessibility in China, leaving students uninformed about potential challenges they may face.

Details about allergies and sensitivities are relegated to a brief mention in the "food" section of the Hangzhou page, failing to illuminate the extent to which allergies are addressed and the potential impact on an individual's experience and health. Dietary restrictions, such as being vegetarian, vegan, Kosher, or Halal, are not adequately addressed, with no indication of the challenges one might encounter in China.

It is crucial to explicitly communicate the difficulties associated with these restrictions in the Chinese context, a sentiment echoed in the feedback provided by students and advisors, as outlined in Appendix K. The eProject site should function as a comprehensive resource, empowering students with relevant information on accommodations, and eliminating the need for them to seek out a project center director or the GEO for essential details that should be readily available.

Likewise, it is imperative that the Hangzhou Handbook not only contains the essential information outlined above but is also consistently updated to ensure accuracy and provide valuable insights into day-to-day life in China. While certain sections of the handbook, such as those detailing important dates, arrival information, and housing details, have proven to be beneficial, discrepancies in accuracy diminish the overall utility of the resource. A notable instance is the assertion that "cash is still used in Hangzhou," when the current reality is that Hangzhou has transitioned into a mostly cashless city, aligning with the broader trend in China (see Appendix A). This discrepancy underscores the need for a more precise and current representation of local practices.

Further refinements to the Hangzhou Handbook could encompass practical details, such as the availability of deodorant in China (see Appendix K) and the prevalent use of Alipay and WeChat for city transportation, including taxis, bicycles, and the subway. Additionally, integrating medical information about readily available U.S. medicines and the HDU campus health center would enhance the handbook's value.

Including guidance on translator apps, cellular data options, distinctions between Alipay and WeChat Pay, and differences in public restrooms between the United States and China would offer invaluable insights to students preparing for their time abroad. By incorporating these edits, we aim to transform the handbook into a more comprehensive and practical tool, enabling future students to better navigate their preparations for travel in China.

5.1.2 Recommendation 2: The goal of the IQP should be better communicated to prospective sponsors.

To enhance the effectiveness of the IQP as both a cultural and professional growth opportunity, it is essential to improve communication with sponsors, especially those engaging in the program for the first time. Cross cultural communication and cooperation can be difficult and full of tension (Mittelmeier et al., 2017). Valuable insights from former faculty at the HPC underscore the importance of the project directors conducting clear and comprehensive meetings with prospective sponsors.

These sponsor-director interactions should clarify the expectations placed on students and emphasize the primary goal of IQP is educational, a fact sometimes overlooked by sponsors unfamiliar with the program. By drawing on previous project reports and deliverables as illustrative examples, sponsors can receive a more tangible understanding of student work to expect. This interaction and process can help prevent misunderstandings about the academic focus of student projects.

Returning sponsors may already be accustomed to the expectations of an IQP project—the focus should be on ensuring that first-time sponsors are well-informed. Project center faculty should play a pivotal role in steering the program toward its educational objectives. By ensuring sponsors comprehend the educational purpose of the IQP will more likely result in a more enriching HPC experience to students and cultivate partnerships with sponsors who appreciate and align with the educational objectives of the program.

5.1.3 Recommendation 3: Prospective students and advisors should be made aware that the HPC has more business-oriented projects.

Hangzhou is a rapidly developing city in China, making it very attractive for technology and businesses. IJP is a *business management* course at HDU, meaning that all the HDU students participating in the MTM are business management students. The WPI professors currently advising the HPC are professors of business. Thus, it logically follows that many of the projects at the HPC have for-profit businesses as sponsors. The HPC is more business-oriented than most other IQP sites, and this fact should be made known to prospective students and advisors before they select the project site.

Many previous project site advisors and students believed the IQP should be more focused on humanities issues and have expressed discontent with the greater business focus of the HPC. However, this discontent could be avoided if it was clearer to prospective participants that the HPC has more business-oriented projects. This awareness raising could be done by making a note on the eProjects site for the HPC, or more clearly on advertising for the project center at events such as the WPI Global Fair. Giving the names of projects to inform students of the HPC's business focus is not an effective way to inform students. If the business focus is more explicitly stated, projects will best target the interested students who want to increase their real-world business experience.

5.1.4 Recommendation 4: Students should receive a more explicit outline of the mixed-team model's structure.

Our findings indicate that students value the MTM at the HPC but feel there is room for improvement. The student survey and interviews highlight the rewarding aspects of connecting with peers in China. However, challenges arise in the collaboration between sub-teams due to perceived issues like large team size, lack of guidance, and unclear expectations. Further, cross-cultural teamwork can be filled with tension unless properly outlined and structured (Mittelmeier et al., 2017).

Students in the survey and during interviews proposed that a more defined structure and better communication would enhance collaboration. Additionally, concerns about HDU student contribution to the project could be mediated with a clearer outline of expectations and enhanced communication. Advisors voiced similar ideas, expressing a desire for clearer roles and more interaction with the HDU students, emphasizing the importance of addressing these issues for a more effective mixed-team experience. Building on this feedback, we recommend that project center directors and advisors instruct students on the specific expectations of the MTM during ID2050 to address these concerns and enhance collaboration.

5.2 Challenges

Some challenges occurred during this project's progress. We delineate a few we felt deserved mentioning.

Production of the promotional video caused difficulty for our group, as we needed to find ways to comply with our consent agreement while including images and videos as the sponsors expected. We countered this by emphasizing the importance of consent, clarity, and upholding our ethical standards for this project. We would not want to include the likeness of an individual who did not know and give direct and conscious permission for us to use them in this video.

In addition, contacting previous sponsors for interviews posed many challenges. Since we only had phone numbers to contact these sponsors, we tried scheduling interviews, but sponsors would not hold English conversations on the phone with us. To solve this, we asked our HDU team to schedule sponsor meetings on our behalf. Our sponsor interviewees turned out to be the current sponsors of the 2023 project groups or the few sponsors who responded in English to our calls. Our HDU team conducted separate sponsor interviews to collect data we could also use.

Finally, our group encountered issues getting student survey responses from the earlier years of the program. This was likely due to less recent alumni not checking their university email inboxes as often as more recent alumni do. Future projects should focus on interpersonal connections to get responses from older alumni.

5.3 Summary

To conclude this four-month project process, we have provided our sponsors with an assessment of the HPC. Using primary and secondary research findings, four actionable recommendations to improve the site, and a promotional video to support student interest in the HPC are delivered. The methods used to gather data included two student surveys, student interviews, faculty interviews, and sponsor interviews. From our data we were able to draw conclusions about topics such as the cross-cultural, preparatory, and project outcome aspects of the HPC. These conclusions led to a set of recommendations that may further refine the HPC experience and create a stronger positive impact on students, sponsors, and faculty.

We would like to thank everyone who allowed this project to succeed.

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7. APPENDICES

Appendix A: WPI Hangzhou Handbook B23

Going Global WPI

A handbook developed by the Global Experience Office at Worcester Polytechnic Institute for students going to a residential project site:



Hangzhou IQP B'23
Wen-Hua Du, IQP Center Co-Director
Jennifer Rudolph, IQP Center Co-Director

The Global School
Worcester Polytechnic Institute

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Introduction

Hangzhou is the capital of Zhejiang province and is its political, economic and cultural center. Hangzhou, sometimes referred to as China's "Heaven on Earth," is known for its natural beauty and rich cultural heritage; as a result, it's one of China's most important tourist destinations for both domestic and international travelers. And, in fact, Hangzhou's reputation has historical precedent; Marco Polo, the 13th-century Italian merchant, hundreds of years ago pronounced Hangzhou to be "the finest, most splendid city in the world."

Hangzhou shares the Hangzhou Bay with two other major cities: Shanghai and Ningbo. All three cities are easily accessible to one another.

Important Dates

Students must arrive on or before the posted start date and stay through the posted end date of the project. WPI housing will be available from the start date to the end date. Students will be responsible for arranging and paying for their own housing if they plan personal travel outside the project dates.

Arrival Date:	October 22, 2023
Arrival Time:	By 10:30am
Orientation Date:	October 23, 2023
Project Start Date:	October 23, 2023
Project End Date:	December 14, 2023
WPI Housing End Date:	December 15, 2023

Students should let GEO and their advisors know ASAP if their travel itineraries change due to unforeseen circumstances (e.g., flight delays or cancellations due to weather, etc.).

Arrival Information

Travel to China

Students are responsible for making their own round trip flight arrangements. However, GEO and the Project Directors strongly suggest you book the recommended flight itinerary so you can have support in-country when you arrive at Hangzhou Xiaoshan International airport.

To Hangzhou

Departing Flight: **Sat, Oct 21**

Cathay Pacific CX811

LV Boston 1:45AM

AR Hong Kong 5:00AM on **Sun Oct 22** -- **note you arrive in Hong Kong a day later than departure because of time difference.**

Connecting Flight in Hong Kong to Hangzhou (2-hour 50-minute layover in Hong Kong)

LV Hong Kong 7:50AM, Oct 22

Cathay Pacific CX958

AR Hangzhou 10:10AM, **Sun Oct 22** -- **note you arrive in Hangzhou a day later than Boston departure because of time difference.**

To Boston

Departing Flight: **Friday, Dec 15**

Cathay Pacific CX959

LV Hangzhou Xiaoshan Airport 11:20AM

AR Hong Kong 1:50PM

Connecting flight in Hong Kong to Boston (4-hour 20-minute layover in Hong Kong)

Cathay Pacific CX812

LV Hong Kong 6:10PM, Dec 15

AR Boston 8:50PM on **Friday, Dec 15** (same day arrival as Hangzhou departure)

Cathay Pacific is an established airline with a strong safety record. It's based in Hong Kong. As a OneWorld Mileage member, its frequent flyer program belongs to the same alliance as American Airlines and Alaska Airlines, as well as many non-US based airlines. If you don't have a frequent flyer account with American or Alaska or Cathay Pacific already, we suggest you get one—you'll be accumulating a lot of miles with this trip! (Signing up for account is free).

As of August 2023, inbound travelers may choose to take antigen tests within 48 hours prior to boarding rather than nucleic acid tests. Airlines will no longer check pre-departure testing results; however, travelers need to declare the negative test result to China Customs by filling the Health Declaration Form, which is available through a) <http://htdecl.chaport.ov.cn/>, or b) WeChat scan (the scan may take a couple minutes to activate). Outbound travelers are also required to file the Health Declaration Form before departure.



Travel to Accommodation

Airport Pickup Included:	Yes
Airport Pickup Type (If included):	Bus
Ground Transportation Options:	Official taxi
Estimated Ground Transportation Costs:	USD\$30-\$40

HDU will arrange a bus to transport students and their luggage from the airport to the hotel. At the airport, students will have to clear Immigration, pick up their luggage and then clear Customs. After that, students should leave the luggage area and enter the main hall of the Xiaoshan Airport where they will find the group waiting for the bus. There is typically a sign in English, as well as an advisor there to greet them.

For students who are arriving outside the designated arrival time, the hotel address is in the handbook in both English and Chinese. Students can take a taxi there easily. Please take only taxis from the official taxi line at the airport. Cab drivers most likely will not know English, and some of them won't be familiar with the area of the hotel, but that is okay. You will be able to show the driver the address in Chinese. Even if the driver is not familiar with the area, it's okay. The driver will simply ask others for directions once in the general vicinity. This is typical in China. Students will need to change money at the airport if they plan on taking a cab—students should make sure to carry nice crisp \$100 or \$50 bills to exchange US \$ for Chinese RMB. US bills that are crinkled or have writing on them are often rejected at money exchange kiosks, hotel cashiers, and banks in China.

Housing

Students will be staying at the Puyan Hotel in Hangzhou. It's a relatively new hotel that is close to malls, restaurants, and public transportation. The closest metro station is about 200-meter walking distance. The hotel has a few robots to greet and provide room delivery of the snacks that guests order from the lobby's vending machine.

Housing Address

Puyan Hotel
Building 4, Wujiao Commercial Center, No. 30 Jinsha Avenue, Quantang District
Hangzhou, Zhejiang, China 310020

璞砚酒店

浙江省杭州市钱塘区金沙大道吾角商业中心四号楼

Contact Information

057156388888

Mailing Address

Puyan Hotel
Building 4, Wujiao Commercial Center, No. 30 Jinsha Avenue, Quantang District
Hangzhou, Zhejiang, China 310020

Housing Type:	Hotel
Housing Size:	200 rooms
Expected Roommate layout:	Double
Shared Common Areas:	None
Bedding & Linens provided:	Towels & Sheets
Laundry Facilities Available:	Yes, free washer and dryers available, including laundry detergent
Cleaning Services Provided:	Yes, daily
Cooking Amenities:	Refrigerator
Utensils:	No
Potable Water:	No, hotel provides 2 bottles of water daily and there is a water fountain in the hotel lobby
Meals Included:	Breakfast is included and open daily 7:00am-10:00am
Internet Connection:	Wired
Heating/Air Conditioning:	Yes
Smoke Free Property:	No
Alcohol Free Property:	No
Storage Space Available:	Closet
Safe available for valuables:	No
Additional Amenities:	Fitness Center and restaurant

Housing Maintenance, Housekeeping, and Internet Problems

Please call the front desk with any maintenance, housekeeping or internet issues.

Sample Housing Photographs



Typical room



Typical breakfast

Money Matters

Before you leave, it is advisable to scan or photograph the contents of your wallet, including all credit, debit, and insurance cards (back and front). Leave a copy with your parents or a trusted friend and take a copy with you (hard copy and/or a photo on your phone). If your wallet or phone is lost or stolen this will make blocking transactions and getting new cards much easier. If you normally carry multiple credit and or debit cards in your wallet, it is advisable to keep

some of them in your wallet and the rest in a safe place in your accommodation. Thus, if your wallet is lost or stolen, you will still be able to access your accounts.

Primary Currency

Renminbi (RMB)

Typical Exchange Rate

Approximately ¥6.6 – ¥7.25 to \$1 (USD)

Cash or Credit

Be sure to notify your credit and debit card companies before you travel, or you may find your cards 'blocked' when you try to use them. Check with your bank before traveling to understand the international transaction fees they will charge. Some US banks have reciprocal arrangements with foreign banks and will waive the transaction fees if you use designated ATMs (e.g., Bank of America vs. Barclays).

Cash is still used in Hangzhou; however, Hangzhou has largely turned into a cashless city over recent years, as have many other major cities in China, such as Shanghai and Beijing. The majority of Hangzhou'ers pay for almost everything with their mobile payment apps—Alipay or WeChat Pay. WeChat Pay and Alipay have an international option that allows major international credit cards, such as VISA and Mastercard, to be used, and is thus accessible for foreign travelers. **This can and should be set up before your trip starts; doing so will help ease cash/payment concerns.** Alternatively, cash is still widely accepted, though small vendors may not be able to provide change due to the lack of use by locals. Many places in China, including hotels, upscale restaurants, and foreign brand-name stores accept major international credit cards (Visa, MasterCard, American Express), but many others will only accept China-issued cards. For many transactions, especially smaller ones, you want to make sure you have a sufficient balance in your mobile pay system or enough cash, since foreign credit card/debit cards are not accepted everywhere.

There are several ways to exchange US dollars to Renminbi (RMB) :

1. You can purchase RMB through American banks before you leave for China. For example, Bank of America (BOA) offers Order & Exchange Currency service, and you can purchase RMB on BOA's website. Remember, if you have more than \$5,000 cash or equal value currency with you, you need to declare to Customs upon arrival in China.
2. You can change US dollars to RMB with your passport at the money exchange counter as you leave the airport terminal.
3. You can use an ATM to pull money directly from your US account to receive RMB.
4. You can go to Bank of China (BOC) in Hangzhou. Remember to bring your passport. Individuals have an exchange limit of USD\$5,000. The nearest BOC is located at No. 17, Street 3, Hangzhou Economic and Technological Development district, Tel: (0571) 86722327.

ATM Tips

It might be easiest to primarily rely on ATMs to withdraw local currency from a US account. If planning on using US-based debit or ATM cards in China, inform your US bank before departure of the dates of travel. Neglecting to do this could mean the card will not be accepted for use in China.

Service Charges/Tipping

Tipping is not part of the Chinese culture. However, at high-end restaurants, a 10-15% service charge may be added to the bill.

Project Costs (IQP only)

Current WPI policy states that students are expected to contribute \$50 per person per 1/3 unit of IQP work toward any out-of-pocket expenses encountered. This means that each student is expected to pay \$150.00 towards the completion of the IQP before asking for reimbursement of any kind. If you have a project team of 4 students, then the total contribution before being reimbursed is \$600.00. If you anticipate that your expenses will exceed this expectation, then you should submit a budget for your project as part of the project proposal. The faculty advisors and Center Directors will be asked to approve this budget prior to submission of any expenses to the GEO. Commuting costs are not reimbursable.

For current budget information, please see the site-specific page in eProjects.

Global Scholarship

The program fee will be posted to your WPI student account in the term prior to travel, along with the Global Scholarship, for eligible students. The Global Scholarship provides up to \$5,000 to defray direct, billable costs (program fees) for off-campus projects. If billable costs are under \$5,000, you will also be credited the difference, up to \$1,500, on your student account. Estimated program costs are available on [eProjects](#). You can contact the Office of Student Aid & Financial Literacy at finald@wpi.edu for information on scholarship eligibility.

Communication

IT Abroad

When traveling abroad, there are certain steps you will need to take to ensure that your data remains secure, and you have access to any necessary software. IT has assembled [Resources for Traveling Abroad](#) to help you prepare your electronics for travel.

It is recommended to install the [Microsoft Authenticator App](#) on your devices **BEFORE** you travel abroad to ensure you can access WPI resources while traveling. You cannot activate this app once out of the country. If you expect to be using a local phone number (via a SIM card) and accessing your WPI account, it's imperative to have the Microsoft Authenticator App working before you leave the US.

Wi-Fi and Internet Access

Students are accustomed to an environment in which Wi-Fi and internet access are readily available, particularly on campus. Wi-Fi access to the internet is included in your housing, but you may find the connections in the housing, at your sponsoring organization, and elsewhere are not as good as they are back on campus. Please note that streaming services, download services, gaming, and other activities may be severely limited by the quality of the internet connection, so it is best to use them sparingly.

Be sure to check that you have Eduroam installed and working on your computers and phones before leaving the WPI campus. Eduroam will give you wi-fi access without charge in many areas whenever you are within range of a participating educational establishment.

China monitors and places restrictions on Internet content—this is sometimes called the Great Firewall of China. As a result, the Internet can be slow and some sites are blocked (*The New York Times*, for instance) and some apps cannot be accessed (Facebook, for instance). VPNs are not legal in China, so subscribing to a VPN to get around China's Great Firewall is not advised.

Telephones

The GEO requires that you have a working phone so that your advisors can reach you and you can reach them at any time. Though you may primarily use free communication apps over Wi-Fi for on-site communications, you must also always be able to make and receive phone calls without a Wi-Fi connection, including during personal weekend travel.

There are some cell phones or smart phones stores near HDU. For example, in Frid Plaza, you can purchase phones if you like. Please contact HDU Professor Yunhong Shen or your HDU buddy to help you purchase cell phones. You need Chinese friends to help bargain. In addition, group purchases may get good discounts.

WeChat is how most people in China communicate with each other. If you have your family and friends download the free WeChat app, you can communicate with them via video calling for free—much like FaceTime. WeChat is also handy for sharing photos and posts; it's the most popular social media platform in China.

Travel/Transportation

Visas, Passports, and Border Control

All students will need to obtain a visa to enter China. A visa is an endorsement or stamp placed in your passport by a foreign government that permits you to visit that country for a specified purpose and a limited time. GEO will work with students on the Chinese visa process. Please contact GEO (global@wpi.edu) with any visa questions.

If you are planning to visit other countries besides China, you may need a visa for those trips as well. For further information and forms, contact the embassy of the countries you intend to visit. Please give yourself plenty of time to do this; it often takes longer than you might think. We recommend not leaving China during the IQP term, since most students will be issued a single-entry visa. Once you leave, you cannot return. Trips to other countries should be made either before arriving in China or after the end of the term.

Travel in Hangzhou and to/from Sponsor Office/Work Location

City buses: CNY 1-3 per person. There is a discount one the normal ticket fare when paying with a "Transportation Smart Card" (杭州通)

Taxi: CNY11 for the first 3km (2mi), then CNY2.5 per km (0.6mi) for the following 4-10km (2.5-6mi).

Bus: Buses in the Hangzhou bus system include normal bus, air-conditioned bus, and BRT (high speed bus). You could purchase tickets on the bus with change. You could look up ways for taking the buses through Baidu maps (<https://map.baidu.com/>, app in Appstore also available).

Subway: There are currently at least 12 lines open in the Hangzhou subway system, and many new ones should be open before the start of the 2023 Asian Games scheduled for Hangzhou starting in September. There is a free app called HZ Metro that is handy, and you can toggle back and forth between English and Chinese. The subway map could be viewed through the following website:

<http://hz.bendibao.com/ditie/linemap.shtml>.

Weekend or Overnight Travel

Students are responsible for booking and reporting their own travel arrangements if they wish to travel on weekends or are planning to stay overnight away from the dorms at any time. All weekend or other overnight travel must be recorded with the advisor(s) following their directions.

Packing Tips

Climate Information

Located on China's southeast coast, Hangzhou has a subtropical monsoon climate. It's hot and humid in the summer and humid and cool in winter. The best seasons are spring and fall; B-term is an ideal time to be in Hangzhou, with high temperatures ranging from the 60s to 80s and lows in the 40s to 60s. You will experience autumn and winter in Hangzhou, so plan for multiple seasons.

October: Although it is sometimes stormy, you will mostly enjoy the cool and fine weather. The average daily low and high temperatures are 14 °C (57 °F) and 23 °C (73 °F). A third of the days in October will have some rain. Hangzhou experiences about 3 typhoons every year, and while B-term is typically after typhoon season, there are occasionally ones in October. Follow all typhoon warnings and avoid leaving your residence when instructed to stay put. Due to the special shape of the Qiantang River delta, the tidal bores can reach dangerous heights during a typhoon. Caution should be exercised, and you should stay away from that area.

Clothing in October: Bring a long-sleeve shirt and a coat or sweater. You might want to bring a rain jacket, umbrella, and shoes that can handle water.

November: The weather continues to cool down, and it slowly turns into winter. The month is generally dry, with about 9 days of rain. Frost can begin to appear at this time. The average low and high temperatures are 8 °C (47 °F) and 17 °C (63 °F), and there is about 60 mm of total rainfall. You can expect good touring weather most days.

Clothing: Bring coats and sweaters to stay warm in this weather.

December: The weather is relatively cold. Although temperatures don't dip down to Worcester temperatures in December, it feels cold due to the high humidity. The month is generally dry, but it might snow some nights. The average daily low and high temperatures are 4 °C (39 °F) and 11 °C (52 °F), and there is about 47 mm of total precipitation. December is the driest month, and you can expect sunny days. Keep in mind that the temperature drops sharply at night, with a 46°F differential between day and night temperatures being the norm.

Clothing: Bring a coat that can handle the cold and head coverings to stay warm in this weather. On some days, there is slush on the ground, making waterproof shoes advisable. And if you're planning on traveling to Beijing in either November or December, bring gloves and a hat—it's much colder up there!

Work Attire

Work attire depends on your sponsor. We suggest you dress up the first day you go to your sponsor and notice what others are wearing. By dressing up, we do not mean formal business attire, but rather neat business casual. You will need one more formal outfit for your final presentation and banquet.

Weekend Attire

You will see a wide variety of fashions and styles while you are in China. We recommend that you dress on the conservative side of casual, as you are a representative of WPI, and you are a formal guest of HDU.

Toiletries/Necessities

China has a wide variety of items available for purchase. There are lots of supermarkets and drugstores near HDU. While you can purchase your toiletries in China, you should plan on bringing any prescription drugs with you—and enough to last you the whole term. Your prescription drugs should be clearly labeled as such and in their original packaging. Keep them in your carryon when traveling, just in case your luggage is lost. It's always a good idea to have a hard copy of your prescription(s) as well.

Electricity

The electricity is 220-240 volts, which is different from the US, which has 110-120 volts. Bring a converter if you bring an electric appliance from the US that does not have an automatic converter built in. Your laptop and cell phone chargers have a converter built in, so you don't need an extra one for these items.

The plugs in Hangzhou have three large flat prongs, so you will need an adapter plug to be able to use your American style plugs, whether two or three prongs. You can buy one when you get there, or before you leave the U.S.

Health & Safety

Travel Registration and Assistance

All students are required to register their travel through the WPI International Travel Registry. Upon registering your travel, you will receive a "Pre-Trip Advisory" outlining areas of concern for all known travel destinations. Please review this information, and reach out to International SOS, or the Global Projects Program team with questions or concerns regarding medications, medical conditions, or general travel advice. By registering your travel, you are pre-authorized to use the medical and security assistance services provided by International SOS.

All students are expected to download the International SOS Assistance app to their personal device. If you need medical attention or feel at risk, medical and security representatives are available 24/7 via phone or live chat within the app, to recommend the nearest vetted medical facilities and to provide medical and security advice. The app also allows you to receive

immediate safety notices based on your location, as well as allowing you to 'Check In' which will make it easier for both WPI and International SOS to assist you should you require it.

For all emergencies, you should also contact your advisors as soon as is reasonably possible.

COVID-19 Precautions – Residential Programs

With the end of the COVID-19 public health emergency and widespread vaccination, WPI is taking a "self-managed care" approach to COVID-19 practices on off-campus travel:

- Students are strongly encouraged to vaccinate and stay up to date with boosters prior to departing. Students must ensure that they are in compliance with any country specific vaccination requirements.
- Bring your vaccination record card with you.
- Students with health concerns are encouraged to wear a mask when around others, especially while traveling to and from the project center, while using public transportation, and if local COVID-19 transmission risks are elevated.
- Students are encouraged to bring several COVID test kits when traveling in case they are not readily available onsite.
- Please consider taking a rapid antigen test before traveling to your project site, and when returning from personal travel during the project to help minimize infection to the cohort.
- Those who test positive can typically self-manage their isolation and care.
 - Isolate in your project center housing for 5-10 days.
 - Alert your project center advisor(s)
 - Students should call ISOS and their advisor if they have severe symptoms.
- Visit WPI's [COVID-19 website](#) for additional resources and [FAQs](#).

Some project centers may encounter stricter local COVID-19 requirements, and students will need to follow local guidelines in these instances. Visit the [China International Travel Information](#) website from the Department of State, and the [U.S. Embassy COVID-19 website](#) to learn more about China's current COVID-19 policies.

GEO will communicate any change in guidance to advisors and the cohort during the project term. All students must adhere to guidance from the Global Experience Office (GEO) and advisors before and during the trip. Failure to comply with any guidance will result in removal from the travel portion of the project.

Incident Reporting

It is critical that you inform your WPI faculty advisors if any of the following incidents occur while you are off campus:

- Any claims of harassment/sexual harassment
- Any injury or illness, physical or psychological
- Arrest
- Assault and sexual assault*
- Fire
- Serious discord within your team

- Theft or burglary
- Vehicle accident
- Violations of WPI Code of Conduct
- You are concerned for your safety or ability to continue in the program

Your advisors can help you navigate any of the situations above and will be able to connect with local and WPI resources that can support you. International SOS and the GEO Duty Officer are available 24/7 to assist in the case of an emergency.

*It is important to note that WPI has a responsibility to make every effort to maintain a safe environment for all its community members. For that reason, Project Center Advisors are required to report incidences of sexual violence or violations of the WPI Sexual Misconduct Policy to the WPI Title IX Coordinator. Your Advisor and GEO can work with you to find confidential support resources such as a local Rape Crisis Center or counseling services in-country.

Emergency Contact Numbers

*****In a medical emergency, contact the local emergency services or go to the nearest medical facility*****

As soon as possible, contact an on-site advisor and/or the Geo Duty Officer.

GEO Duty Officer: +1 (508) 769-0117

You will receive your advisor's contact information once on-site. When you call, inform your advisor or the GEO Duty Officer of the nature of the emergency, your location, phone number, the location of the students and other advisors, and all relevant details available to you.

If you do not reach a live person immediately or you do not get a call back in 15 minutes, then call the **WPI Police** to inform them of your emergency: **+1 (508) 831-5555**

Local Emergency Services

Severe emergency requiring ambulance, fire, police (911 equivalent)	Phone: 110 (police) 119 (fire) 120 (medical)
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ISOS (Medical or Security Assistance)

Local Number (Beijing)	+86 (0) `0 6462 9100
US Number:	+1 215-942-8478

Local Contact

Prof. Yunhong Shen	Email: syhkjf@163.com WeChat: FortuneStanley
Local liaison	Phone: +86 18858188016

Emergency Meeting Point/Group Assembly Point

Please head to the lobby of the Puyan hotel in case of emergency	

U.S. Embassy or Consulate

U.S. Citizen Services	https://china.usembassy-china.org.cn/
U.S. Consulate General Shanghai 1038 West Nanjing Road, 9th Floor Shanghai, China	Phone: Tel: (021) 8011-2400

U.S. National Sexual Assault Hotline

RAINN: Rape, Abuse, & Incest National Network	https://rainn.org
*Phone and online chat available 24/7	1-800-656-4673

Appendix B: WPI Alumni Survey Questions from Qualtrics Form

WPI Alumni Survey Questions from Qualtrics Form

Introduction

The Hangzhou Project Center is reaching its 10th anniversary as a WPI Global Project Center. To evaluate the performance of the center over the past decade, we are completing an assessment to improve the IQP experience for all future participants of this site. We would greatly appreciate your participation in this survey to analyze past experiences at the project center. Please note that the information provided will not identify any individual respondents but will be aggregated into a statistical result for the final report. Your responses will remain anonymous.

Demographic and General Questions:

1) What is your gender?

- Male
- Female
- Other

2) What year did you complete your IQP?

(Drop-down menu for years 2014-2023)

3) What was your sponsoring organization?

Display selection of years from 2013 to 2022

Use display logic to make 6 different options appear depending on the project year. For example, if a respondent selects “2017”, this question will be a list of all the 2017 HPC Projects. Also include “If other, list here: [open-ended text box]” in case they are unsure.

Project Center Selection Questions

We would like to know what influenced your selection of Hangzhou as your IQP project center:

4) I was motivated to complete my IQP at the Hangzhou Project Center because of:

	1 -Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
Geography	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
City Setting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interesting Projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opportunities to explore different culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability in desirable term	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interest in speaking Chinese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fun activities & trips	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WPI faculty recommendations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer recommendations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Learning and Skills Questions

The IQP is meant to foster intellectual growth, foster real-world experience, and build the soft-skills that are important for development. We wish to know whether you agree or disagree with the following:

5) The Hangzhou Project Center helped me build skills and greater knowledge of:

	1 – Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 – Strongly Agree
Solving Practical Problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defining project goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding client's need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working effectively in a team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating well with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professionalism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consideration of ethics in professional practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining effective working relationships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Remaining flexible when	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

faced with project changes					
Leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We also wish to know whether participation in the project impacted you in non-academic ways. Please indicate whether you agree or disagree with the following:

6) My participation at the Hangzhou Project Center:

	1 -Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
Expanded my interests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved my self-confidence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spurred personal changes in my lifestyle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved my personal goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Built new friendships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual growth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved my personal qualities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Cultural Growth Questions

We would like to know what culture and language skills you gained before completing your project at the Hangzhou Project Center and how they impacted your experience.

Rate how much you agree with each of the following statements:

7) I feel that ID2050 provided me with sufficient cultural awareness to visit China.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

8) Before IQP, my level of fluency in Chinese was...

- Native Speaker
- Advanced
- Intermediate
- Beginner
- None

9) My highest level of Chinese language classes at WPI was:

(Drop-down menu for classes elementary to advanced/higher level)

- Higher level courses (Business Chinese, Contemporary China, etc.)
- Advanced III
- Advanced II
- Advanced I
- Intermediate IV
- Intermediate III
- Intermediate II
- Intermediate I

- Elementary III
- Elementary II
- Elementary I
- I did not take any Chinese language classes at WPI

10) Rate how much you agree or disagree with the following statements if you knew Chinese before going to the Hangzhou Project Center:

My Chinese language skills improved because of the Hangzhou Project Center.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree
- I did not have any Chinese language knowledge prior to IQP

11) I feel that the Chinese language classes I took at WPI were helpful in preparing me to visit China.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree
- I did not take any Chinese language classes at WPI

12) The implementation of a language-learning component as part of ID2050 or an on-site language course would have improved my experience at the Hangzhou Project Center.

- Strongly Disagree
- Disagree

- Neutral
- Agree
- Strongly Agree

Project Impact Questions

We would like to know how much your project impacted your IQP sponsors, the community, and you. Please tell us how strongly you agree or disagree with the following statements:

13) My project had a significant impact on our IQP sponsors

- Strongly Disagree
- Somewhat Disagree
- Neutral
- Somewhat Agree
- Strongly Agree

14) My project had a significant impact on the Hangzhou community

- Strongly Disagree
- Somewhat Disagree
- Neutral
- Somewhat Agree
- Strongly Agree

15) This project experience made me feel more prepared to handle challenges in the future.

- Strongly Disagree
- Somewhat Disagree
- Neutral

- Somewhat Agree
- Strongly Agree

Mixed-Team Model Questions:

The mixed-team model mainly applies to students who attended the project center from 2019 to 2023. [The mixed-team model applies to any project which involved coordinated project efforts between students from Hangzhou Dianzi University.]

16) My experience with the mixed-team model was:

- Very Positive
- Somewhat Positive
- Neutral
- Somewhat Negative
- Very Negative

17) How positive or negative was your experience with:

	1 – Very Negative	2 – Somewhat Negative	3 - Neutral	4 – Somewhat Positive	5 – Very Positive
Being exposed to students my age from a different culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making new friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Getting experience working as a cross-cultural professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Navigating living in a foreign culture and society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating with the HDU Team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having different goals as the HDU Team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaborating with HDU students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18) The size of the mixed team was:

- Too small
- Small
- Just right
- Large
- Too large

Rate how much you agree or disagree with the following statements:

19) Working in the mixed-team model made the project process better

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

20) Working in the mixed-team model improved the flow of the project process.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

21) Working in the mixed-team model improved the quality of the project results.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Conclusion Questions:

22) Rate how much you agree or disagree with the following statement: I would recommend students to complete their IQP at the Hangzhou Project Center:

- Strongly Disagree
- Somewhat Disagree
- Neutral
- Somewhat Agree
- Strongly Agree

23) If you have any suggestions or have anything you would like to elaborate on regarding the Hangzhou Project Center, please leave them below.

[Open-ended response]

24) As part of our research, we would like to conduct interviews with WPI alumni of the Hangzhou Project Center (including current students) to get a more comprehensive understanding of student experiences at the Hangzhou Project Center. If you would be willing to participate in a 30-minute Zoom interview regarding your experiences at the Hangzhou Project Center, please indicate your name and preferred email address here. We will follow up within a week to schedule a brief interview with you.

[Open-ended response]

25) If you would like to be entered into the raffle for a \$50 Dunkin gift card, please indicate your preferred email address below. This email address will not be connected to your responses to the survey.

[Open-ended response]

Appendix C: HDU Alumni Survey Questions

HDU Alumni Survey Questions

Demographic and General Questions:

- 2) What is your gender?
- Male
 - Female
 - Other
- 3) What year did you complete your IQP?
- 2014-2018
 - 2019-2023
- 4) What was your project?

Project Center Selection Questions

We would like to know what influenced your selection to be a volunteer for the WPI IQP projects.

- 5) I was motivated to volunteer at the Hangzhou Project Center because of:

	1 -Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
Interesting Projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opportunities to explore different culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interest in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

speaking English					
Fun activities & trips	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teacher recommendations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student recommendations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Learning and Skills Questions

The IJP is meant to foster intellectual growth, foster real-world experience, and build the soft-skills that are important for development. We wish to know whether you agree or disagree with the following:

6) The Hangzhou Project Center helped me build skills and greater knowledge of:

	1 – Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 – Strongly Agree
Solving Practical Problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defining project goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding client's need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working effectively in a team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Communicating well with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professionalism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consideration of ethics in professional practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining effective working relationships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Remaining flexible when faced with project changes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We also wish to know whether participation in the project impacted you in non-academic ways. Please indicate whether you agree or disagree with the following:

7) My participation at the Hangzhou Project Center:

	1 -Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
Expanded my interests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved my self-confidence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spurred personal changes in my lifestyle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Improved my personal goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Built new friendships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Cultural Growth Questions

We would like to know what culture and language skills you gained before completing your project at the Hangzhou Project Center and how they impacted your experience.

9) My level of fluency in English before IJP was...

- Native Speaker
- Advanced
- Intermediate
- Beginner
- None

10) I think my past English courses helped me communicate with WPI students.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree
- I did not take any Chinese language classes at WPI

Project Impact Questions

We would like to know how much your project impacted your IQP sponsors, the community, and you. Please tell us how strongly you agree or disagree with the following statements:

14) My project had a significant impact on our IQP sponsors

- Strongly Disagree
- Somewhat Disagree
- Neutral
- Somewhat Agree
- Strongly Agree

15) My project had a significant impact on students.

- Strongly Disagree
- Somewhat Disagree
- Neutral
- Somewhat Agree
- Strongly Agree

Mixed-Team Model Questions:

The mixed-team model mainly applies to students who attended the project center from 2019 to 2023. [The mixed-team model applies to any project which involved coordinated project efforts between students from Worcester Polytechnic Institute.]

17) My experience with the mixed-team model was:

- Very Positive
- Somewhat Positive
- Neutral
- Somewhat Negative
- Very Negative

18) How positive or negative was your experience with:

	1 – Very Negative	2 – Somewhat Negative	3 - Neutral	4 – Somewhat Positive	5 – Very Positive
Making new	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

friends					
Communicating with the WPI Team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooperation with WP students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19) The size of the mixed team was:

- Too small
- Small
- Just right
- Large
- Too large

Conclusion Questions:

23) Rate how much you agree or disagree with the following statement: I would recommend students to complete their IQP at the Hangzhou Project Center:

- Strongly Disagree
- Somewhat Disagree
- Neutral
- Somewhat Agree
- Strongly Agree

24) If you have any suggestions or have anything you would like to elaborate on regarding the Hangzhou Project Center, please leave them below.

[Open-ended response]

Appendix D: Sponsor Interview Questions

Preamble

- I. Thank you for agreeing to meet with us! We are a group of students from Worcester Polytechnic Institute (also known as WPI) in Massachusetts, and we are working to improve the Hangzhou Project Center to make the center better for future students. As part of WPI's Interactive Qualifying Project program, students are sent to project centers around the world and spend seven weeks applying their project-based education to real-world problems. We understand that you are one of the sponsors who worked with the HPC in the past.

- II. Currently, we are conducting semi-structured interviews to get a more in depth look at what the sponsor experience is like. We chose to meet with you because we believe your organization's participation in the program is notable, meaning that your input is highly valuable to us. We intend to ask you about your reasons for participating in the project, your satisfaction with previous projects, and your impressions of student competence regarding the project. If you were a sponsor in the year 2019 or later, we will also ask you about your impressions of the joint-team model between WPI and HDU students. The qualitative answers from these interviews will be used in tandem with a student survey, student interviews, and faculty interviews to create comprehensive recommendations for the advisors of the center.

- III. This interview will take approximately 60 minutes to complete and will benefit also you by improving future projects if you still participate in the program. If you no longer participate in the program, your participation will help us to better understand valuable information related to the project, to clearly identify the problems to be solved.

- IV. We will first collect verbal consent from you to use the information you provide us for our final project report. We intend to maintain anonymity in our interviews and surveys. One case where it could anonymity may be compromised is in regard to the type of sponsor. In those situations, we will not include names, and may instead use positions such as "Sponsor A". Participation in these interviews is completely voluntary and interviewees are able to opt out at any point. You may choose to skip a question if you do not want to answer it. We ensure that your answers will remain confidential. No names or identifying information will appear on any of the project reports or publications.

Do you have any questions about this interview?

Do you verbally consent to participate in this interview? (Y/N)

Sponsor Interview Questions

Project Summary Questions (5 minutes)

First, we would like to see how much of the project you can recall.

- “How much of your organization’s sponsored project from (insert year or years) can you remember? Tell us about the project(s).”

Sponsor Interest Questions (10 minutes)

Next, we would like to learn why you chose to participate in the project.

- “Why did you sponsor the project?”
- “What about the project interested you to become a sponsor?”

IF: the sponsor has participated for multiple years:

- “For what reasons did you decide to continue participating in the IQP?”

Sponsor Satisfaction Questions (20 minutes)

With our next set of questions, we would like to learn how satisfied you were with the projects completed for your organization and the students completing these projects.

- “How satisfied were you with the student project? Was the project useful to your organization?”

IF: the sponsor participated in a year other than 2023

- “How satisfied were you with the final project presentation? How satisfied were you with the final deliverables?”
- “How could the project be improved?” (if needed prompt them to include process or outcome/product)

IF: The sponsor is a current sponsor

- “Will you continue to sponsor the project? Why?”

Student Competence Questions (15 minutes)

With our next set of questions, we would like to learn how satisfied you were with student competence and preparation.

- “How satisfied were you with the communication between you and the student team?”
- “Were you satisfied with how well prepared the students were when they started their

project?”

- “What did students do that met your expectations? That did not meet your expectations?”
- “How would you rate the IQP students in the following categories while working on their project?”
 - “Professionalism?”
 - “Willingness to learn and solve problems?”
- “How satisfied were you with the communication between you and the university advisors to facilitate the project beforehand?”

Mixed Team Model Questions (10 minutes)

IF: They participated in the program after 2019

In this next section, we would like to learn your impressions of the mixed team, which is the Chinese and American students working together.

- “What was your perception of the cooperation between WPI and HDU students on the project?”
- “Did you find that having WPI and HDU students both working on the project was beneficial to you?”
- “Did having WPI and HDU students working together help you cross any barriers or issues? Which ones?”

Final Questions (10 minutes)

We would now like to ask you a few final questions about your experience with the program.

- “Would you recommend sponsoring the project to other professionals?”
 - “Would you be willing to do this?”
- “Is there anything else you want to tell us about your experience?”

Outro

Thank you for participating in this interview with us! If we integrate your feedback into our report, we will ensure that it remains anonymous. If you have any questions, you can email us at gr-hz23-6@wpi.edu. Please enjoy the rest of your day!

Appendix E: Faculty Interview Questions

Preamble

- I. Thank you for agreeing to meet with us! We are a group of students from Worcester Polytechnic Institute (also known as WPI) in Massachusetts, and we are working to improve the Hangzhou Project Center to make the center better for future students. As part of WPI's Interactive Qualifying Project program, students are sent to project centers around the world and spend seven weeks applying their project-based education to real-world problems. We understand that you are one of the faculty members who served as an advisor at the HPC in the past.
- II. Currently, we are conducting semi-structured interviews to get a grasp of what the faculty experience is like to get a better understanding of how the faculty piece of the center works. We chose to meet with you because we believe your position as a program advisor gives you unique insights into the HPC that will be highly valuable to us. The qualitative answers from these interviews will be used in tandem with a student survey, student interviews, and sponsor interviews to create comprehensive recommendations for the advisors of the center.
- III. This interview will take approximately 30 minutes to complete, and your input will improve the HPC for future WPI students. If you no longer participate in the program, your participation will help us to better understand valuable information related to the project, to clearly identify the problems to be solved.
- IV. We will first collect verbal consent from you to use the information you provide us for our final project report. We intend to maintain anonymity in our interviews and surveys. Participation in these interviews is completely voluntary and interviewees are able to opt out at any point. You may choose to skip a question if you do not want to answer it. We ensure that your answers will remain confidential. No names or identifying information will appear on any of the project reports or publications.

Do you have any questions about this interview?

Do you verbally consent to participate in this interview? (Y/N)

Faculty Interview Questions

Faculty interest questions (2 minutes)

First, we would like what initially interested you in being an advisor at the HPC?

- “Why did you choose to become an advisor for the Hangzhou Project Center?”

Faculty satisfaction questions (8 minutes)

Next, we would like to hear about your impressions regarding the projects at the HPC.

- “Do you feel as though advising these project teams has had a positive impact on you? If so, how so?”
- “Do you feel as though this project has a positive impact on students? If so, please tell us how you have seen a positive impact on students.”
- “Did you return as an advisor to the Hangzhou Project Center? Why or why not?”
- “How do you think the Hangzhou Project Center could be improved to make it easier for you to perform your job?”

Faculty Impression on Mixed Team Model Questions (20 minutes)

- “How would you define mixed team?”
- “What are your understanding and expectations of the mixed-team model?”
- “What is the purpose of the mixed-team model?”
- “What do you do differently to advise mixed teams than when you advise single teams?”
- “What are your impressions of the mixed-team model at the HPC?”
- “Are there any ways the mixed-team model has not worked out in the past, and do you have any recommendations for resolving these issues?”
- “How much extra work does the mixed-team model add on your end?”
- “Please provide some examples of benefits of the mixed-team model from your perspective”
- “Please provide some drawbacks of the mixed-team model from your perspective”

“Would you be willing to be contacted over email/WeChat after this interview if we need to ask any follow-up questions or clarifications?”

Outro

Thank you for participating in this interview with us! If we integrate your feedback into our report, we will ensure that it remains anonymous. If you have any questions, you can email us at gr-hz23-6@wpi.edu. Please enjoy the rest of your day!

Appendix F: Promotional Video Script

Expected Length: 6m 05s

Intro 30s

[Text: The WPI/HDU joint IQP/IJP program]

The Hangzhou Project Center was founded in 2014 under the Memorandum of Understanding between Worcester Polytechnic Institute, WPI, and Hangzhou Dianzi University, HDU.

This program has lasted more than 10 consecutive years, reflecting a decade of successful cooperation between the two universities.

Background ~1m 20s

2023 marks the 10th year of the joint IQP/IJP program at the Hangzhou Project Center. From 2014-2018, HDU administration recruited volunteer students to collaborate with WPI students visiting Hangzhou to complete their IQP Projects. The students were divided into 6 mixed teams, consisting of both WPI and HDU students, to solve the real-world sponsor projects. In 2017, HDU administration approved the implementation of a business class known as “International Joint Practice”, and the class was taught for the first time in 2019. In this class, HDU students were able to get course credit for participating in the IQP program.

This was the first year of implementation of the “mixed-team model” at the Hangzhou Project Center. This mixed-team model has continued to the present-day.

[Professor Rudolph talking about benefits of the mixed team model] ~20s

[Professor Shen talking about benefits of the mixed team model (especially for HDU students)] ~20s

Benefits to Students ~2m 40s

Students gain many personal and professional benefits from participating in the program.

Students gain a profound appreciation for other cultures during the program. WPI students travel to a different part of the world and interact with the people there, while HDU students get to work alongside their international peers.

Many students finish the program with a greater understanding of other cultures, and even some students form life-long friendships by participating in the joint program.

The professional nature of this program sees students from both universities gain hands-on project-based work experience, especially in the roles of leaders and helpful team members.

The course encourages students to hone their team building and communication skills while connecting with each other and satisfying the larger project goal.

[Professor Rudolph quote about the impacts on students she's seen – lifelong friends story] ~30s

[Professor Shen quote about the impacts on students he's seen – hotel crying story] ~30s

[WPI student quote about the many benefits they got from the program] ~20s

[HDU student quote about the many benefits they got from the program] ~20s

Benefits to Sponsors ~1m 5s

The Hangzhou Project Center connects students with sponsors in a way that brings great benefits to both parties.

[Sponsor quote about the benefits they get from the program – mentoring experience] ~20s

[Sponsor quote about the benefits they get from the program – international perspective] ~10s

[Sponsor quote about the benefits they get from the program – young blood in office, fresh minds] ~20s

Outro ~30s

Overall, participation in this joint program is an amazing opportunity for students to hone their professional skills and cultural appreciation.

Past students have mastered problem-solving and teamwork skills and have also made intercontinental friendships.

If you want to become an international professional and connect with your international peers, the Hangzhou Project Center is just the place for you. We hope to see you here in the future!

[Outro clip of students waving and cheering]

Appendix G: Informed Consent Agreement

Informed Consent Agreement for Participation in a Research Study

Investigator: WPI IQP Team - Hangzhou B23

Contact Information:

Email: gr-HZ23-6@wpi.edu (Student Team and Faculty Advisors, primary contact)

Student Team Members:

Lucas Anthony	llanthony@wpi.edu
Alissa Cloutier	alcloutier@wpi.edu
Colin McGinty	cjmcginty@wpi.edu
Philip Miu	ptmiu@wpi.edu

Faculty Advisors:

Hansong Pu	hpu@wpi.edu
Joseph Sarkis	jsarkis@wpi.edu

Title of Research Study: Assessing and Improving the Hangzhou Project Center

Sponsor: Worcester Polytechnic Institute (WPI) and Hangzhou Dianzi University (HDU)

Introduction: You are being asked to participate in a research study. Before you agree, however, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks, or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

Purpose of the study: To evaluate the impacts of project research in China with the goal to improve WPI's Hangzhou Project Center for future students.

Procedures to be followed: Our team will send surveys to current and former students who

completed their Interactive Qualifying Project (IQP) at the Hangzhou Project Center Site, including students from both participating universities. We intend to conduct these interviews in person or over scheduled video calls (i.e. Zoom).

Risks to study participants: Due to potential cultural incongruity, participants may feel uncomfortable providing answers to certain survey or interview questions.

Benefits to research participants and others: There will not be any benefits given to participants of the study.

Record keeping and confidentiality: All records will be kept online within a shared Google Drive folder; the only access to this will be held by student team members. Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators, the sponsor or its designee and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identifies you by name. Any publication or presentation of the data will not identify you.

Should a participant wish to not sign a consent form, but still give consent to participate in the study, then verbal consent will be noted, dated, and tracked by the investigators conducting the study. This verbal consent will be considered equivalent in value to a written consent due to foreseeable cultural barriers related to the trust of foreigners.

Should a participant wish to withdraw from the study after it has begun, the participant should email the group alias, gr-HZ23-6@wpi.edu, and state their desire to withdraw from the study. Once the investigators receive this email, they will remove all data related to the participant from the data set and expunge all other participant-related data from their records. They will return an email to the concerned participant notifying them of the completion of this process.

Compensation or treatment in the event of injury: You do not concede any legal rights by signing this statement. No compensation for medical treatment will be available in the unlikely event of injury.

Cost/Payment: There will be no expenses imposed upon, or compensations delivered to, voluntary research participants of this study.

For more information about this research or about the rights of research participants, or in case of research-related injury, contact:

Student team and faculty advisors, primary contact, Email: gr-HZ23-6@wpi.edu

IRB Manager: Ruth McKeogh, Tel. 508 831- 6699, Email: irb@wpi.edu

Human Protection Administrator: Gabriel Johnson, Tel. 508-831-4989, Email: johnson@wpi.edu

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

Date: _____

Study Participant Signature

Study Participant Name (Please print)

Date: _____

Signature of Person who explained this study

Appendix H: WPI Alumni Survey Data

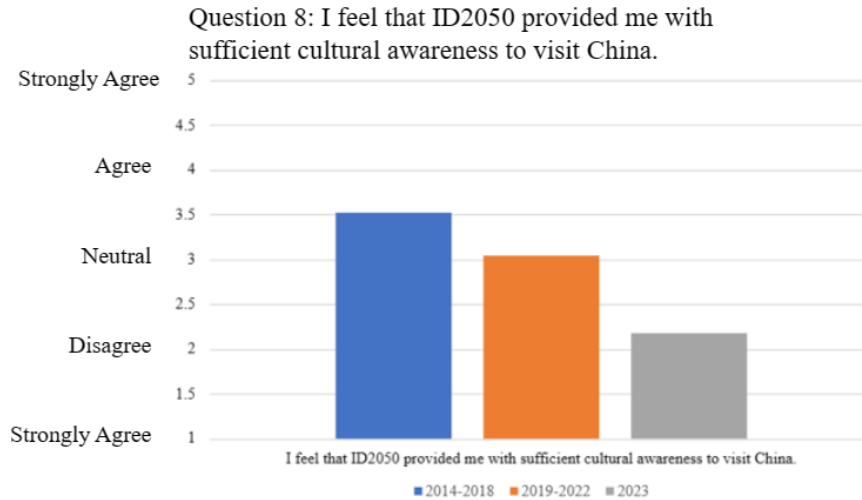


Figure H-1. Mean response scores and standard deviations from WPI students on their satisfaction with cultural awareness training in ID2050, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

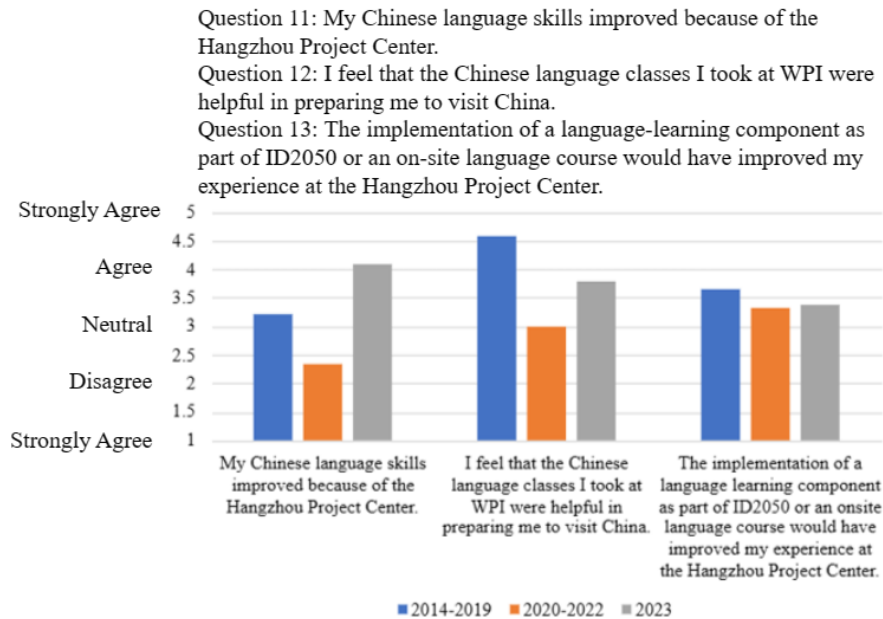


Figure H-2. Mean response scores from WPI students on questions related to Chinese language learning, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

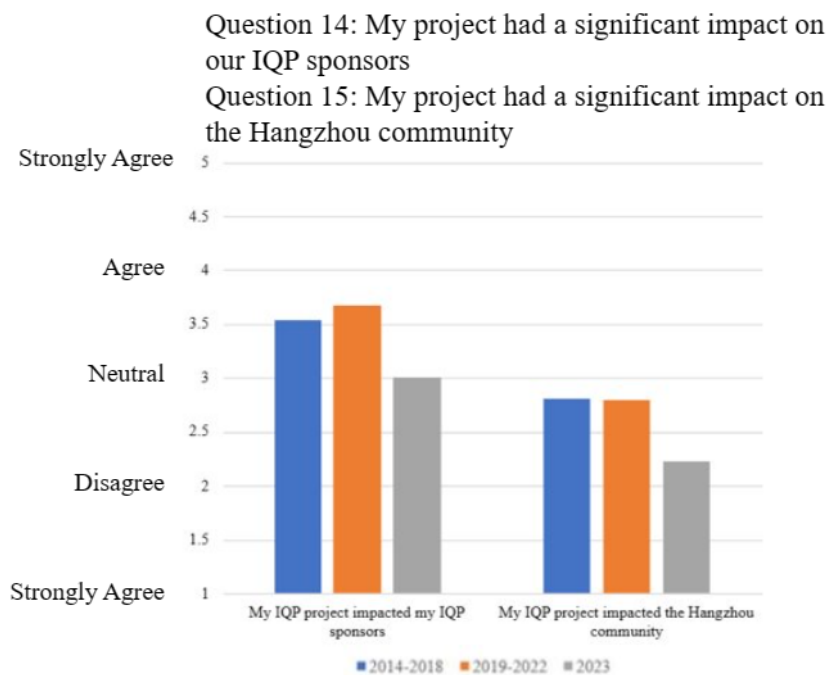


Figure H-3. Mean response scores from WPI students on their perceived project impact on their sponsors and the Hangzhou community, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

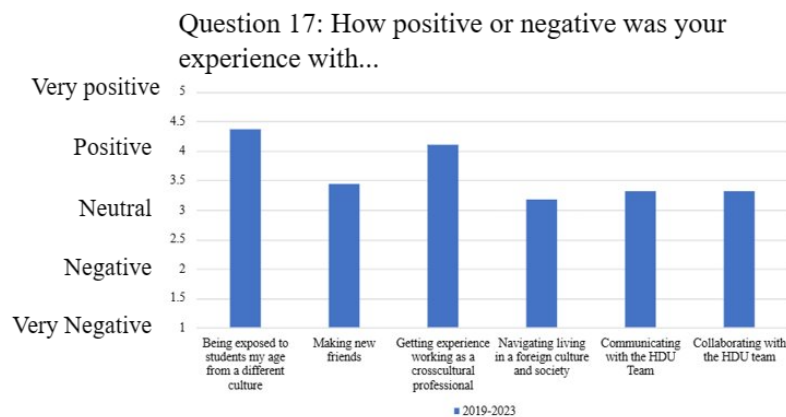


Figure H-4. Mean response scores from WPI students on their general experience with the MTM, based on a 1 (very negative) to 5 (very positive) Likert-type scale.

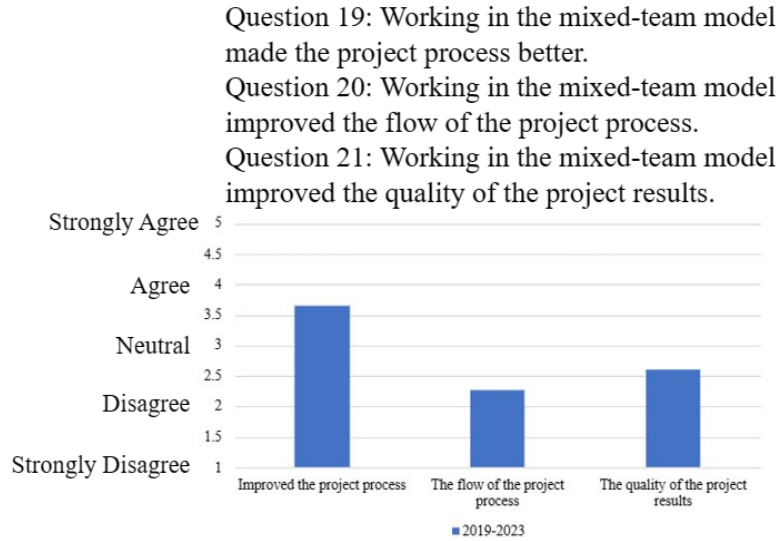


Figure H-5. Mean response scores from WPI Students on their experience with the MTM regarding workflow, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

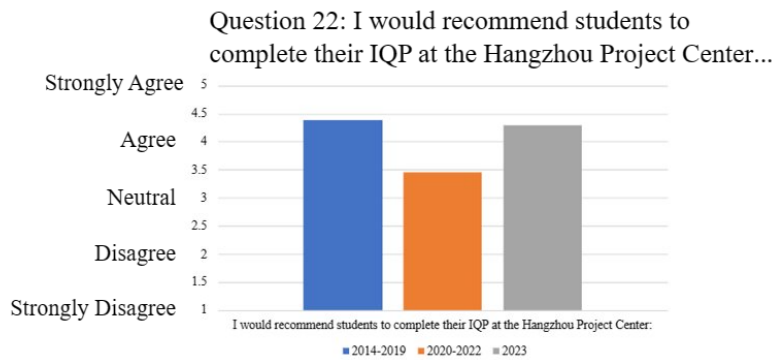


Figure H-6. Mean response scores from WPI Students on their likelihood to recommend the HPC, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

Appendix I: HDU Alumni Survey Data

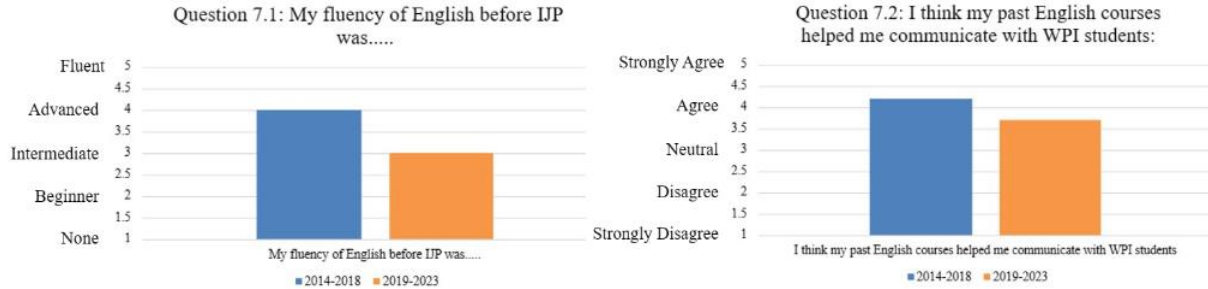


Figure I-1. Mean response scores from HDU students on their English fluency before IJP (left) and mean response scores on whether they think their English skills helped them communicate with WPI students (right), based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

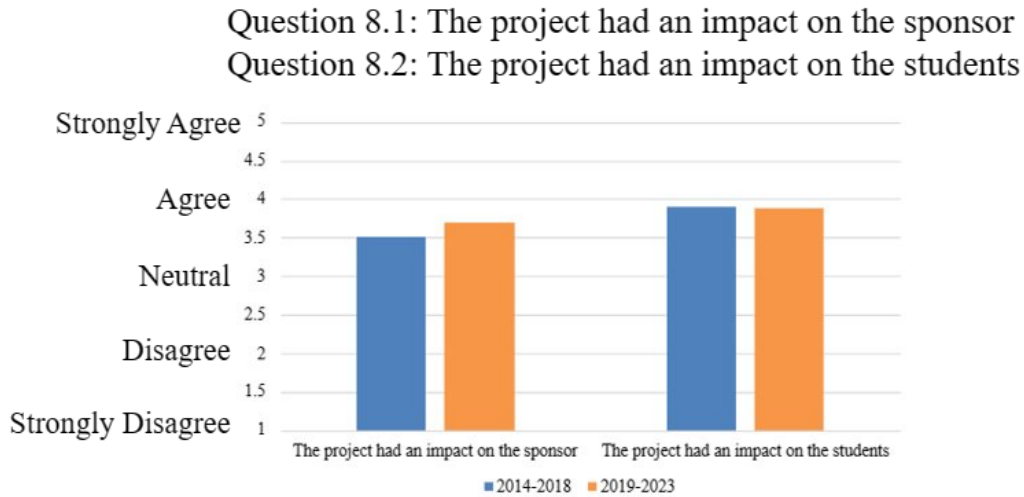


Figure I-2. Mean response scores from HDU students on their perceived project impact on their sponsors and the Hangzhou community, based on a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

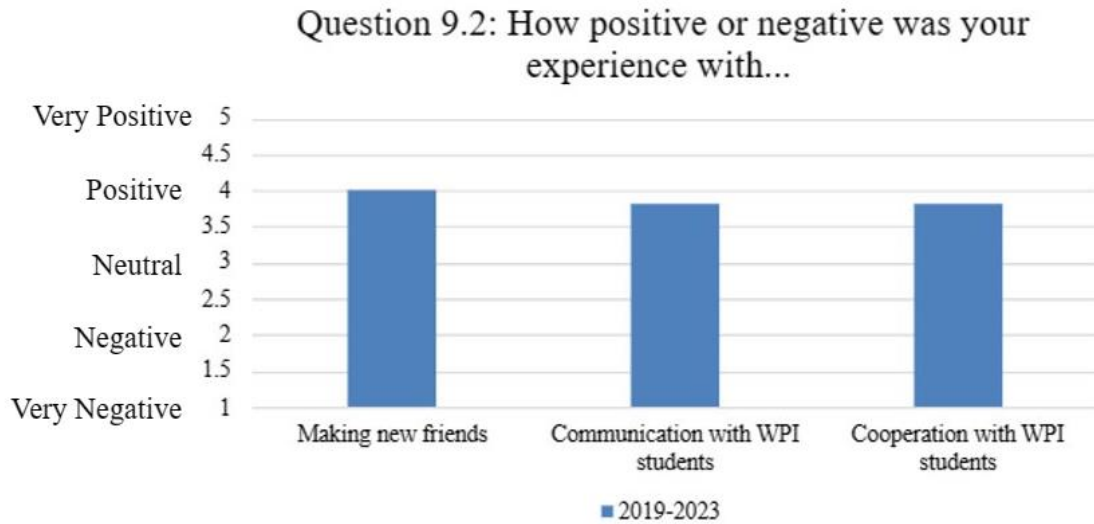


Figure I-3. Mean response scores from HDU Students on their general experience with the MTM, based on a 1 (very negative) to 5 (very positive) Likert-type scale.

Appendix J: Student Interview Questions

Preamble

- I. Thank you for agreeing to meet with us! We are a group of students from Worcester Polytechnic Institute (also known as WPI) in Massachusetts, and we are working to improve the Hangzhou Project Center to make the center better for future students. As part of WPI's Interactive Qualifying Project program, students are sent to project centers around the world and spend seven weeks applying their project-based education to real-world problems. We understand that you are one of the students who performed their IQP at the HPC in the past.
- II. Currently, we are conducting semi-structured interviews to get a more in depth look at what the student experience is like. We chose to meet with you because you expressed interest in elaborating on your experience at the HPC, and also because your detailed experience at the HPC is highly valuable to us. The qualitative answers from these interviews will be used in tandem with a student survey, sponsor interviews, and faculty interviews to create comprehensive recommendations for the advisors of the center.
- III. This interview will take approximately 60 minutes to complete, and your input will improve the HPC for future WPI students.
- IV. We will first collect verbal consent from you to use the information you provide us for our final project report. We intend to maintain anonymity in our interviews and surveys. One case where it could anonymity may be compromised is in regards to the type of sponsor. In those situations we will not include names, and may instead use positions such as "Sponsor A". Participation in these interviews is completely voluntary and interviewees are able to opt out at any point. You may choose to skip a question if you do not want to answer it. We ensure that your answers will remain confidential. No names or identifying information will appear on any of the project reports or publications.

Do you have any questions about this interview?

Do you verbally consent to participate in this interview? (Y/N)

Student Interview Questions

General Information Questions 20 minutes

First, we would like to learn some general information about your IQP experience.

- "What year did you go on IQP, and what was your Project/Sponsor Organization?"
- "Before we delve into more specific questions, could you please give us a broad summary of your project and experience in Hangzhou?"

Cultural and Professional Questions 30 minutes

Next, we would like to ask you some questions about cultural and professional aspects of the IQP.

- “Did your IQP experience broaden your cultural perspectives, in regards to global issues, interactions between cultures, and ethical responsibilities? If so, how?”
- “Did your IQP experience help you build your professional skills? Would you say that your experience gained from the IQP has helped you post-graduation? If so, how?”
- “Did you have any experience speaking Chinese before going to Hangzhou? If so, how would you say this impacted your experience in Hangzhou?”
- “In what ways do you think that the cultural preparation component for the IQP could be improved?”
- “What is one of your favorite memories from IQP? Would you recommend this experience to a friend, and if so, for what reasons?”

Mixed Team Model Questions 10 minutes

IF: They participated in the program after 2019

Finally, we would like to ask you a question about your experience with the mixed-team model.

- “How was your experience with the mixed-team model? Were there any highlights?”
- “What could be introduced to make the mixed-team model better? What things that are already integrated could be improved?”

Outro

Thank you for participating in this interview with us! If we integrate your feedback into our report, we will ensure that it remains anonymous. If you have any questions, you can email us at gr-hz23-6@wpi.edu. Please enjoy the rest of your day!

Appendix K: List of Specific Culture Issues and Suggestions Mentioned by Students and Advisors

- How to order delivery, using Meituan app
- How to find stores and restaurants online
- How to see what stores and restaurants sell
- How to take the metro with Alipay
- How to order a Didi with Alipay
- How to get medications in China, such as painkillers
- Public places often only have squat toilets
- Public places often do not have toilet paper, you need to bring your own
- Many bathrooms do not have hand soap
- People stare at, take pictures of, and request pictures with foreigners
- Give more heads up about lack of personal space, such as how people get shoved in the busy metro
- Give a review of gestures, taking shoes off, gifts that would be inappropriate to give people (don't give a clock), avoid groups of four, and other fun facts
- Very few people speak English in Hangzhou
- How to use a translator app to communicate with people
- Some Chinese people will not directly answer specific questions, such as questions that would be negative towards someone else
- Air quality can be extremely poor
- Ways to get around the “great firewall”
- Cannot buy deodorant