



ASPIRE
Undergraduate
Engineering
Design
Challenge 2023
Reports
(Total 8 participants)

ASPIRE Undergraduate Engineering Design Challenge 2023

Student Workshop Completion Report

Report Date 2023 06 30

| | | | |
|---------------------------|---|-------------------------------|---|
| Your Name | Vinnie Chuawanta | | |
| Affiliation at Tokyo Tech | Department of Transdisciplinary Science and Engineering School of Environment and Society | | |
| Student ID# | - | Current academic program year | 3 |
| Presentation theme | Daredemo Yukata - Yukata for Everyone (Yukata Rental Service for Firework Festival) | | |
| Program period | 2023/06/26 to 2023/06/30 | | |
| Posting to the web | This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? Include / Exclude | | |

Report contents

① The reason you joined the program

Participating in this collaborative program with esteemed universities such as Tsinghua University, KAIST, The Hong Kong University of Science and Technology, and Nanyang Technological University presents an incredible opportunity for me. By engaging with students from diverse backgrounds, I can enhance intercultural communication skills and navigate diverse working styles. Moreover, the program offers ample networking opportunities, allowing me to interact with students from prestigious institutions and establish valuable connections.

② Pre-program preparations

In preparation for the program, I took several steps to gather information. Firstly, I researched previous years' program details on Tokyo Tech website to familiarize myself with the course structure and requirements. Additionally, I sought guidance from my upperclassmen who might have previously participated in the program to gain valuable insights and advice. To ensure proper authorization, I reached out to Professor Naoya Abe, the GSEP chair, seeking his agreement for me to join the program.

③ Program contents, activities

| | June 26 (Mon) | June 27 (Tue) | June 28 (Wed) | June 29 (Thu) | June 30 (Fri) |
|--------------------------------|---------------------------|---|------------------|------------------|---|
| 10:45-11:35 | Ice Breaker & Orientation | Instruction | Instruction | Instruction | Group Work |
| 11:35-12:25 | | Group Work | Group Work | Group Work | |
| 13:45-14:35 | Instruction | Visiting Museum in Ueno (by reserved bus) | Instruction | Instruction | Group Work |
| 14:35-15:25 | Group Work | | Group Work | Group Work | Final Presentation & Reception (-18:00) |
| 15:40-16:30 | | | Group Work | Group Work | |
| 16:30-17:20 (Final Day -18:00) | Feedback Meeting | | Feedback Meeting | Feedback Meeting | |

Day 1 (June 26, 10:45-12:25, 13:45-17:20)

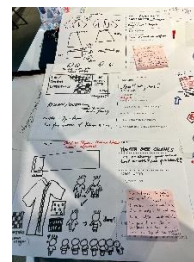
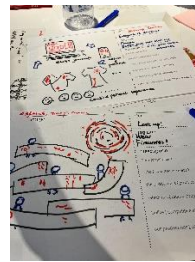
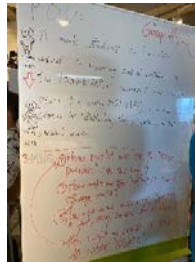
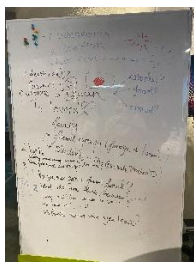
Ice-breaking, team formation, simple collaboration, lecture on design thinking, plan interview, interview, journey map, walk through POV, feedback



| すべての録音 | |
|---------------------|-------|
| 東京工業大学 - 大岡山キャンパス 2 | |
| 月曜日 | 19:48 |
| 東京工業大学 - 大岡山キャンパス | |
| 月曜日 | 22:19 |

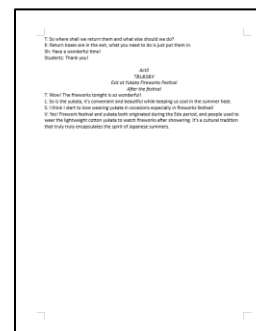
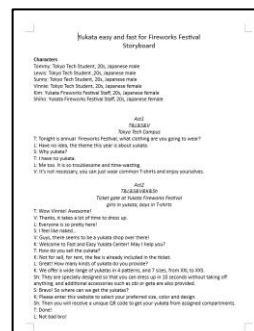
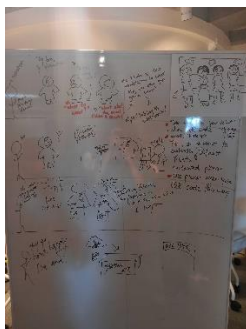
Day 2 (June 27, 10:45-12:25, 13:45-17:20)

Introduction to Japanese society, culture and technology, explanation of problems to tackle in this class, concept designing by team, revisit POVs, create HMWQs, draw sketches, visit Ueno National Museum



Day 3 (June 28, 10:45-12:25, 13:45-17:20)

Selection of a design concept, 2D prototyping, improvement of the design concept, reprototype, prepare skit with prototype and pitch



Day 4 (June 29, 10:45-12:25, 13:45-17:20)

3D prototyping or preparation of demonstration



Day 5 (June 30, 10:45-12:25, 13:45-17:20)

Finishing operation, preparation of presentation, presentation

④ Program participants

| <u>1</u> | <i>Tokyo Institute of Technology</i> | <i>PHAM VIET ANH</i> | <i>School of Environment and Society</i> | <i>TA</i> | <i>Vietnam</i> |
|----------|--|---------------------------------------|--|-----------|-------------------|
| 1 | The Hong Kong University of Science and Technology | LAI, Kam Wai | Integrative Systems and Design School: School of Engineering | 3 | Hong Kong |
| 1 | Tsinghua University | Li YINUO | Xingjian College(Theoretical and Applied Mechanics + Civil Engineering) | 3 | China |
| 1 | Nanyang Technological University, Singapore | MUHAMAD DANISH KARLIN BIN MOHAMED ISA | School of Electrical & Electronic Engineering | 3 | Singapore Citizen |
| 1 | KAIST | Ayantuu Teshome Mossisa | Civil and Environmental Engineering | 4 | Ethiopia |
| 1 | Tokyo Institute of Technology | Yoon Hee Joo | School of Materials and Chemical Technology | 4 | Republic of Korea |
| 1 | Tokyo Institute of Technology | Hinako Iwashige | School of Life Science and Technology Department of Life Science and Technology | 4 | Japan |

| <u>2</u> | <i>Tokyo Institute of Technology</i> | <i>XU PEIMIN</i> | <i>School of Environment and Society</i> | <i>TA</i> | <i>China</i> |
|----------|--|-----------------------|--|-----------|-------------------|
| 2 | The Hong Kong University of Science and Technology | HEUNG, Tsz Fung Sunny | Physics School: School of Science | 2 | China |
| 2 | Tsinghua University | Liu Jin | School of Architecture | 4 | China |
| 2 | Nanyang Technological University, Singapore | CHOI HOI TO TOMMY | School of Electrical & Electronic Engineering | 4 | Hong Kong |
| 2 | KAIST | Buyeon Kim | Mechanical Engineering | 4 | Republic of Korea |
| 2 | Tokyo Institute of Technology | Vinnie Chuawanta | School of Environment and Society • Department of Transdisciplinary Science and Engineering | 2 | Indonesia |
| 2 | Tokyo Institute of Technology | Shiho Otomo | School of Environment and Society Department of Transdisciplinary Science and Engineering | 4 | Japan |

| <u>3</u> | <i>Tokyo Institute of Technology</i> | <i>Muhammad Farkhan Abdillah</i> | <i>School of Environment and Society</i> | <i>TA</i> | <i>Indonesia</i> |
|----------|--|----------------------------------|--|-----------|-------------------|
| 3 | The Hong Kong University of Science and Technology | WONG, Sze Chai Helen | Biochemistry and Cell Biology School: School of Science | 2 | China |
| 3 | Tsinghua University | Peng Qinhe | Department of Electronic Engineering | 3 | China |
| 3 | Nanyang Technological University, Singapore | HO HONG THENG | School of Civil and Environmental Engineering | 3 | Singapore Citizen |
| 3 | KAIST | Akobir Kamolov | Electrical Engineering | 3 | Uzbekistan |
| 3 | Tokyo Institute of Technology | Cong Minh Hieu | Department of Transdisciplinary Science and Engineering | 3 | Viet Nam |

| <u>4</u> | <i>Tokyo Institute of Technology</i> | <i>Mao Yamauchi</i> | <i>School of Environment and Society</i> | <i>TA</i> | <i>Japan</i> |
|----------|--|-------------------------|--|-----------|-------------------|
| 4 | The Hong Kong University of Science and Technology | CHENG, Ka Ho Nathan | Quantitative Social Analysis School: School of Humanities & Social Science | 3 | China |
| 4 | The Hong Kong University of Science and Technology | GU, Minjin | Bioengineering / Management / Division: Interdisciplinary Programs Office | 3 | South Korea |
| 4 | Tsinghua University | OLIVERI GIADA | School of Medicine | 2 | Italian |
| 4 | Nanyang Technological University, Singapore | WANG ZILONG, VICTOR | School of Civil and Environmental Engineering | 3 | Singapore Citizen |
| 4 | Tokyo Institute of Technology | Yu zi chan | School of Environment and Society • Transdisciplinary Science and Engineering Department | 3 | Malaysia |
| 4 | Tokyo Institute of Technology | Sasipha neerapattanagul | School of Environment and Society, Department of Transdisciplinary Science and Engineering | 2 | Thai |

| 5 | Tokyo Institute of Technology | Chen Kechen | School of Environment and Society | TA | China |
|---|---|---------------------|---|----|------------|
| 5 | Tsinghua University | Gong Xinyi | Academy of Arts, Department of Visual Communication Design | 3 | China |
| 5 | Nanyang Technological University, Singapore | YAP ZHI YI | School of Chemistry, Chemical Engineering and Biotechnology | 3 | Malaysian |
| 5 | KAIST | Sultan Sultanidinov | Electrical Engineering | 2 | Kyrgyzstan |
| 5 | Tokyo Institute of Technology | Pontakorn kuusakul | School of Environment and Society, Department of Transdisciplinary Science and Engineering, Undergraduate Major | 2 | Thai |

⑤ Any difficulties you faced during the program

Balancing my academic responsibilities at university with my commitment to this program proved to be quite challenging. Furthermore, time management in the program played a critical role, as it often left us feeling underprepared and rushed through the steps. Consequently, this affected our ability to fully grasp and complete each task with the desired level of proficiency. In addition, preparing a compelling skit to introduce our prototype posed a significant challenge. We felt a lack of guidance and direction in this particular area, which left us somewhat lost in the process. It would have greatly benefited us if there had been a dedicated workshop or training session focused on developing effective skits. Such a workshop would have equipped us with the necessary tools and techniques to create engaging and impactful presentations. One last challenge I encountered during the program was the requirement to have lunch on the bus, which proved to be very unstable. Eating while the bus was in motion made it difficult to finish my lunch, and I often felt nauseous. Moreover, the constant movement of the bus made me anxious about the possibility of my food falling or spilling, adding to the overall difficulty of enjoying a meal in that setting.

⑥ Outcomes of your participation in the program

I received incredibly valuable feedback from the other participants, which provided refreshing insights that I had never considered before. Additionally, this experience allowed me to establish numerous new connections. Our discussions were engaging and enjoyable, and we even had the opportunity to create our own yukatas. Exploring Tokyo together after classes added an extra layer of excitement and adventure to the whole experience.

⑦ Any comments regarding "Museum Tour"



The current exhibit at the Ueno National Museum showcases a remarkable collection of swords and sword-fittings from the Heian to Edo periods in Japanese history. Each piece holds a rich historical and cultural significance, offering a captivating glimpse into the past. I had the opportunity to enhance my understanding of this exhibit through my participation in the "Traditional Technology and Intercultural Co-learning" course. As part of the course, I engaged in practical training, including a steelworks tour, charcoal cutting, Tatara Iron Making, swordsmith experience, and Japanese sword appreciation. These hands-on experiences allowed me to grasp the intricate craftsmanship and artistry involved in creating these remarkable swords. The exhibition left a lasting impression on me, as I had the chance to appreciate the beauty and significance of these artifacts firsthand. It was an incredibly enjoyable experience that deepened my understanding of Japanese history and traditional craftsmanship.

⑧ Any advice for students who wish to participate in a similar type of program

Don't forget to fully immerse yourself in the program and enjoy the overall experience. ASPIRE UEDC is not just a course; it's an opportunity to meet incredible people and create great memories. Cherish the moments and make the most out of the program. The more you immerse yourself in the activities, interact with others, and embrace the opportunities presented, the more enriching and fulfilling your experience will be.

ASPIRE Undergraduate Engineering Design Challenge 2023

Student Workshop

Completion Report

Report Date 2023 07 07

| | | | |
|---------------------------|---|-------------------------------|------------|
| Your Name | Chan Yu Zi | | |
| Affiliation at Tokyo Tech | Transdisciplinary Science and Engineering Department | | |
| Student ID# | 21B0015 | Current academic program year | Third year |
| Presentation theme | Scoop n Go | | |
| Program period | 2023/06/26 to 2023/06/30 | | |
| Posting to the web | This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? Include / Exclude | | |

Report contents

① The reason you joined the program

I became interested in design thinking after taking Professor Inaba's System Design Project course last year. Since then, I have been actively joining design workshops as the research I want to conduct will involve the design thinking approach. Therefore, I decided to join this program in order to gain a better understanding of this approach. Another factor that motivated me to join this program is the participation of students from other prestigious universities in East Asian countries. Since I rarely get the opportunity to interact with students from different universities, I am eager to learn from their perspectives and engage in cultural exchanges through this program.

② Pre-program preparations

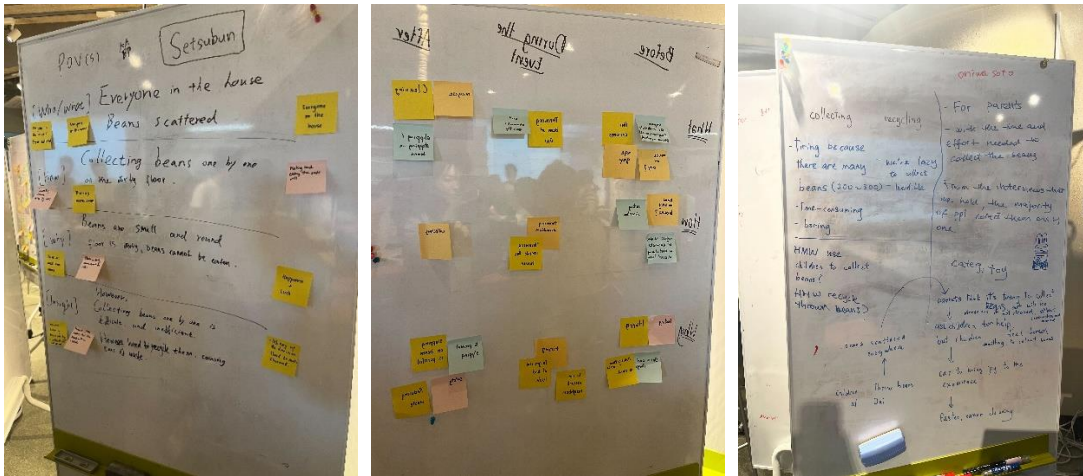
Having previously completed System Design Project course, I dedicated some time to reviewing the design process before joining the program. Besides that, I went through the slides shared in the Aspire slack workspace a day prior to the program, ensuring that I was aware of what to anticipate and the expectations placed upon me. Furthermore, I made an effort to memorize the names of my team members and their respective countries in advance. I believe that remembering people's names shows respect and contributes to creating a positive team environment.

③ Program contents, activities

I enjoyed every activity throughout the program. From the initial self-introduction and interviews to

the eye-opening museum visit and the final product presentations, each experience was filled with excitement. I also felt lucky that I have the chance to collaborate with my teammates, generating innovative ideas. The program facilitated active participation and encouraged everyone to share their thoughts. Below shows a few pictures from the program.

During our group discussions, we effectively utilized whiteboards and post-it notes to enhance communication and idea visualization.



The picture on the left illustrates group work activity during the program and on the right is a picture of our group teaching assistant holding our final product while being surrounded by us.



Overall, it was a great experience that provided me with valuable skills and experiences that I can apply in various aspects of my life.

④ Program participants

All participants from the program were really nice and friendly. We worked together in groups to create the best possible product for our chosen event. The positive atmosphere also made the program experience enjoyable and productive. I gained valuable insights and knowledge from my interactions with the other students, making it one of the most significant highlights of the program for me. I sincerely hope that Tokyo Tech organizes more programs involving multiple universities in the future. On the last day of program, we went to torikizoku and had a fun time there to celebrate the end of the program.



⑤ Any difficulties you faced during the program

In the second feedback meeting, we were told that skit was not necessary for our team feedback. However, we received comments from professors and students after our presentation that skit should also be included in our presentation; all of us were confused about the presentation instructions of the meeting. Hence, in the third feedback meeting, we overcame this difficulty by confirming the instructions several times before our presentation. As this course is not treated as an official absence, I also faced some difficulties explaining to a few professors that I did not absent from their class on purpose.

⑥ Outcomes of your participation in the program

Participating in the design thinking program was a great learning experience for me. I gained a lot of knowledge about the design thinking approach and how it can be applied to solve problems. I also had the opportunity to make many new friends during the program. It was wonderful to interact with students from different cultures and learn about their perspectives. Overall, the program not only expanded my understanding of design thinking but also enriched my social connections.

⑦ Any comments regarding “Museum Tour”

The museum tour was a fantastic experience for me. I had the chance to learn a lot about Japanese culture and art, which was really interesting. Additionally, I made a few new friends during the visit, which made the experience even more enjoyable. Unfortunately, due to time limitations, I couldn't explore every gallery in the museum. Nonetheless, the tour was still worthwhile and left me with a greater appreciation for Japanese culture and art. Here are a few pictures taken by me during the visit.



⑧ Any advice for students who wish to participate in a similar type of program

Firstly, I highly recommend this program for students want to meet new people and make friends. These programs often involve group work, allowing students to collaborate with others and build strong connections. Secondly, for those want to enhance their presentation skills, these programs are a great opportunity. There are a lot of chances for students to present ideas and projects, improving communication and public speaking abilities. Lastly, if you are genuinely interested in learning more about design thinking, I can assure you that you will enjoy this program as you do not only learn theory about design thinking, but you also get to do practical work with your teammates.

ASPIRE Undergraduate Engineering Design Challenge 2023

Student Workshop

Completion Report

Report Date 2023 07 05

| | | | |
|---------------------------|---|-------------------------------|-------------------------------|
| Your Name | Le Cong Minh Hieu | | |
| Affiliation at Tokyo Tech | Department of Transdisciplinary Science and Engineering | | |
| Student ID# | - | Current academic program year | Third-year undergraduate (B3) |
| Presentation theme | ごみトレード (Garbage Exchange Service for Hanabi) | | |
| Program period | 2023/06/26 to 2023/06/30 | | |
| Posting to the web | This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? Include / Exclude | | |

Report contents

① The reason you joined the program

As a student in the Global Scientist and Engineering Program (GSEP) in the Department of Transdisciplinary Science and Engineering (TSE), I am passionate about various engineering fields. My ultimate goal is to leverage my knowledge to promote society's development by applying it to real-world projects. To achieve this, I have realized that possessing basics in engineering design is crucial. That's why I am excited about the ASPIRE League Undergraduate Engineering Design Challenge as it can equip me with such skills.

One of the many compelling aspects of this program is the opportunity to communicate and work in a mixed group with students from diverse backgrounds, universities, and cultures. I firmly believed that such an experience can contribute immensely to my overall development. Although the GSEP curriculum also emphasizes communication skills, it is mostly limited to GSEP students only. Therefore, the ASPIRE League UED Challenge is an excellent platform for me to broaden my social circle and learn from a more extensive range of people.

Additionally, during my second year, I registered and completed several third-year courses, which freed up a lot of my time. Hence, I aimed to spend my free time efficiently and productively, and I believed that participating in this program would add significant value to my academic and personal growth.

② Pre-program preparations

Before the ASPIRE Undergraduate Engineering Design Challenge, I reviewed my knowledge of the design thinking project, which I acquired during the 'System Design Project' class in my second year. Additionally, I thoroughly read the program's Handbook and Guidance to ensure I was well-prepared.

However, the most crucial preparation I made was cultivating a comfortable and open mindset for participating in the program. Since the students I would be working with came from different countries and backgrounds, I anticipated encountering diverse perspectives. Hence, I recognized the significance of an open mindset for effective collaboration. I mentally prepared myself to be receptive to new perspectives and ideas from the talented individuals I would be interacting with, as I eagerly sought to work with and learn from them.

③ Program contents, activities

During the ASPIRE Undergraduate Engineering Design Challenge 2023, I gained essential knowledge and skills related to the "Design Thinking" approach, which encompasses five main steps: Empathize, Define, Ideate, Prototype, and Test. After receiving a lecture from Professor Inaba, the program participants had the immediate opportunity to work in teams and apply this knowledge to design a new project aimed at solving an existing problem in traditional Japanese festivals.

Specifically, as a participant from Tokyo Tech, along with students from NTU, KAIST, HKUST, and Tsinghua, I was assigned to Team 3, named GAKUSEI. Throughout the program, we collaborated closely with the team members. After extensive discussions on traditional Japanese festivals, we decided to focus on the firework festival (Hanabi) as our main event of interest. Through interviews, we identified several issues that Japanese people often encounter during this festival. Although we discovered multiple problems, we chose to concentrate on the challenge of people having to carry garbage by hand and the post-festival congestion.



Figure 1: Team 3 - Prototypes (Garbage Stamp & Lucky Draw)

Following the "Design Thinking" approach, we diligently worked through each step to find a solution for the identified issues. After engaging in exciting discussions, we developed a proposal that involved implementing a garbage exchange service after the firework festival, offering attractive prizes as incentives. We then proceeded to create a prototype and conducted multiple tests, gathering feedback from Japanese people, receiving guidance from professors, and

iteratively refining our solution. Through this iterative process, our understanding of the "Design Thinking" approach became clearer, and our solution improved significantly.

Finally, during the final presentation, we showcased our problem statement, outlined our design process, and presented our solution, accompanied by a skit. We were able to demonstrate the evolution of our solution based on the feedback received, highlighting the effectiveness of the "Design Thinking" approach in problem-solving.

In addition to the lectures and teamwork sessions, we also had the opportunity to visit the National Museum. This excursion provided me with a chance to appreciate various forms of art and craft that embody the unique aspects of Japanese culture. I developed a deeper understanding and admiration for the Japanese aesthetic sense during this enriching trip.

④ Program participants

The ASPIRE Undergraduate Engineering Design Challenge brought together undergraduate students from various universities and disciplines, including Tokyo Tech, NTU, KAIST, HKUST, and Tsinghua. The program participants showcased exceptional talent, with a plethora of interesting ideas and impressive skills. Moreover, they demonstrated openness and friendliness throughout the program.

In my team, despite the limited time available for introductions and getting acquainted with one another, we seamlessly proceeded with our teamwork. Even when we encountered issues with our project, we engaged in discussions and collectively worked towards finding solutions. The spirit of collaboration and support within the team was truly inspiring.

One of the highlights for me was the opportunity to make new friends with diverse backgrounds. Interacting with fellow participants who came from different universities and cultures broadened my perspective and allowed me to appreciate the richness of our global community. Sharing ideas, learning from one another, and forging connections with individuals who had unique experiences was an enriching aspect of the program.

Overall, the program participants played a significant role in making the ASPIRE Undergraduate Engineering Design Challenge a memorable and rewarding experience. Their exceptional talent, collaboration, and openness created a supportive environment that fostered personal and academic growth. I am grateful for the friendships formed and the learning opportunities shared, and I look forward to the potential collaborations and continued connections with these remarkable individuals.



Figure 2: Team 3 - GAKUSEI

⑤ Any difficulties you faced during the program

All my team members were foreigners who were not familiar with Japanese culture. Therefore, we heavily relied on the information gathered through interviews to understand the situation and the problem at hand. However, conducting interviews posed challenges due to limitations in terms of the number of interviewees and time constraints. Additionally, there were instances where our

initial mindsets or ideas did not align with the preferences or needs of the Japanese people. As a result, we had to reassess our project background and solutions multiple times throughout the design process. With the guidance of professors and through group discussions, we were able to overcome these obstacles and successfully complete our project and final presentation.

Personally, I faced some struggles in managing my time during the program. Since I am currently in the middle of the semester, participating in the program required me to miss some classes. Although the professors were kind enough to allow me to attend the workshop, I still had to complete assignments and submit them on time. Balancing the demands of the program and my academic responsibilities proved to be quite hectic for me during this period. However, I made sure to stay organized and prioritize tasks to ensure that I fulfilled all my commitments.

Despite these challenges, the valuable learning experiences and the opportunity to collaborate with talented individuals made the difficulties worthwhile. The support from professors, the dedication of my team members, and my own determination allowed me to overcome these obstacles and make the most of the program.

⑥ Outcomes of your participation in the program

Participating in the ASPIRE Undergraduate Engineering Design Challenge has yielded several valuable outcomes for me.

Firstly, throughout the intensive 5-day workshop, I successfully achieved the goals I had set for myself. I gained a solid understanding of the fundamental steps involved in the "Design Thinking" approach to problem-solving. This methodology, which emphasizes problem analysis, interviews, and collaborative teamwork, will undoubtedly prove invaluable as I tackle real-world projects in the future.

Additionally, the program provided me with a deeper insight into the perspectives and ideas that resonate with Japanese culture. As an international student studying in Japan, this knowledge is crucial in fostering effective collaboration with Japanese colleagues and stakeholders. Understanding their cultural context will undoubtedly enhance my ability to work efficiently and contribute positively to future projects.

Moreover, the program facilitated the formation of meaningful connections and friendships with individuals from diverse backgrounds. Interacting with such a diverse group of participants exposed me to a range of unique viewpoints and experiences. Engaging in discussions and sharing ideas with these individuals broadened my horizons and enriched my understanding of various subjects. The friendships forged during the program will continue to be a source of inspiration and learning beyond the program's duration.

Overall, my participation in the ASPIRE Undergraduate Engineering Design Challenge has been a transformative experience. It has equipped me with valuable knowledge and skills, fostered cultural understanding, and provided me with an expanded network of like-minded individuals. Most importantly, I thoroughly enjoyed the program.

⑦ Any comments regarding "Museum Tour"

I would like to express my sincere appreciation for organizing the tour of the National Museum. Despite having studied in Japan for over two years, it was my first visit to the museum. The experience was truly remarkable as I had the opportunity to witness the fascinating art and crafts that spanned the rich history of Japan. This visit provided me with fresh perspectives on the allure of Japan and deepened my admiration for the Japanese aesthetic sense.

While I thoroughly enjoyed the museum tour, I would have loved to have more time to explore all the different sections and exhibits. It would have been even more engaging if there were guides available to provide insights into the art and craft, as well as offer directions within the museum.

Nevertheless, I found the museum tour to be incredibly interesting and it added immense value to my overall experience during the program.

⑧ **Any advice for students who wish to participate in a similar type of program**

For students who wish to participate in a similar type of program, it is essential to take advantage of the valuable opportunities it presents. Such a program offers a chance to learn more about the topic of interest, as you can receive valuable advice, feedback, and instructions from professors and experts. Therefore, remember to make use of these opportunities to enhance yourself.

In addition, the most important preparation for a program like this is cultivating a comfortable and open mindset. Since you will be working with people from diverse backgrounds and encountering new perspectives, it is crucial to feel free to accept these new mindsets in order to work efficiently. Moreover, embracing different viewpoints not only aids in building relationships among the participants but also contributes to a memorable workshop.

Let's forge lasting connections and embark on an unforgettable journey!

ASPIRE Undergraduate Engineering Design Challenge 2023

Student Workshop

Completion Report

Report Date 2023 07 06

| | | | |
|---------------------------|---|-------------------------------|----|
| Your Name | Pontakorn Koosakul | | |
| Affiliation at Tokyo Tech | School of Environment and Society, Department of Transdisciplinary Science and Engineering. | | |
| Student ID# | - | Current academic program year | B2 |
| Presentation theme | 酒花(Sakebana) | | |
| Program period | 2023/06/26 to 2023/06/30 | | |
| Posting to the web | This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? <input checked="" type="radio"/> Include <input type="radio"/> Exclude | | |

Report contents

① The reason you joined the program

I'm interested in participating activities where I can work with international students. Since I joined the university, most of the international activities are cultural exchange program or extracurricular but ASPIRE league is the first academic activity, so I'm really excited to join.

② Pre-program preparations

Since I already have my slack account, I don't have to set up many things for pre-program preparations. All I have to do is to look through the given documents weeks before the program.

③ Program contents, activities

The event takes 5 days in total. The theme of the project is to create a product for Japanese people based on special events or festivals in Japan. Overall, the flow of the class is similar to the System Design Project class I recently took in the 1st quarter but with a field trip on the second day of the event.

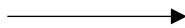
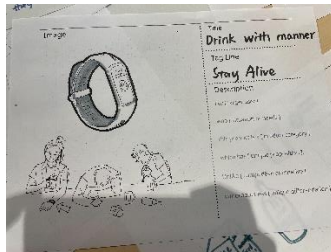
On the first day, most of the activity is ice-breaking and course introduction. We got to learn

about Japan's culture and chose what festival we want to based over work on. There was also an interview session where we can ask Japanese people there opinion about the event we are interested in. My group first chose Setsubun and Coming of age day but finally settle to only one event which is coming of age day after having an interview with Japanese people.

For the second day, the morning lecture is about the art of Japan. We also have to form the POVs and HMWQs for our project to finalize the design and what we want to do. We decided to make drunkenness measuring device to prevent people from over drinking. The highlight is the field trip to Tokyo National Museum. We set off from the campus at around 13.00 the return at 16.30. From the museum, we got to see many records and arts related to Japan culture.

Finally, the last 3 days of the project is used to finalize our project. We had to do 3 presentation in total, the first one is for product demonstration in the form of a skit, the second one is the skit, how we get our product to the market, and its technical feasibility, and the final presentation, which include all of above with the development process of our product.

The design process proceed in this order. On the third day, we used our POVs to create the prototype then have a user test to improve it. At first, we want product to be like a watch, but after a lot of comment from the users we change it into a wearable flower which can attach to our cloth. Also, instead of making one notices their own drunkenness, we make our product shows drunkenness level to each other so that people in the event can help each other.



On the forth day, we mostly talk about technical work of the device, we explored many parameters and sensors than can be used and decided to use skin patch for measuring alcohol. The device work by detecting ethanol content from the user's sweat and sends electric signal to LED which will change the flower color from green to yellow, orange, and red. I also created the team crest on the this day.



Finally on the last day, we mainly work on preparing our final presentationny rehearsing the presentation and the skit.

④ Program participants



There are student from various nations participated in the program. At first, I was worry to be a representative from Tokyotech even though I'm not Japanese since the theme of the event is to think through Japanese perspective. However, seeing that other people are also an exchange student at their university too make me less nervous. Even though we all come from different nations, we don't have any problem getting along at all.

My group have 5 members in total, from the right side of the picture, me, Sultan, Min Jin, Yaq, Gong. All of them are friendly and easy to work with. Sultan and Yaq are great helper and very well-versed. I, Sultan, and Yaq worked together while researching about the technical term of our project. Minjin is good at giving new idea and discussion. She also a good presenter. Finally, Gong is the artist of the group. We rely only him when we need to draw or create something.

During the program, I didn't have much chance to speak with participants from other groups, however, during the presentation, everyone are eager to contribute and can give good comments to one another group.

⑤ Any difficulties you faced during the program

I don't think there is any difficulty from the program that I have to mention in particular. However, since the program was held during class time, my workload increased greatly during the program. This decrease the time that I can spend with my friends from ASPIRE league after the workshop is finished.

⑥ Outcomes of your participation in the program

I think I understand better about how we can approach problem and solve it after I finished the program. It teach me the order of project design, how I should find the problem, how should I conduct an interview to the user, and how should I improve my product from user's feed back. I think this workshop will be useful to me one day in the future and will aid me if I'm incharge of some project. I believe other group members also have similar feeling to me. At the end of the project. Some of my group members even commented that our project is very feasible and could actually be made and sold to not only the Japanese but around the world.

I have a positive memory about the project and I really enjoyed working with teammates. After the project is finished, we exchanged our contact on other social media platform as well.

⑦ Any comments regarding "Museum Tour"

The museum tour was great and the time was not too long nor too short. We also got a postcard souvenir from the museum. Still, it is quite hard to contribute what we see in the to our product since some of the topic is far from tradition.

⑧ Any advice for students who wish to participate in a similar type of program

I think this is a great opportunity if you want to experience how designing product feel. Since this is only a 5-day long project, we don't have to create actual product so the atmosphere of the workshop is relax and enjoyable.

ASPIRE Undergraduate Engineering Design Challenge 2023

Student Workshop

Completion Report

Report Date 2023 07 04

| | | | |
|---------------------------|---|-------------------------------|----------------------|
| Your Name | Shiho Otomo | | |
| Affiliation at Tokyo Tech | Department of Transdisciplinary Science and Engineering | | |
| Student ID# | - | Current academic program year | 4 th year |
| Presentation theme | Yukata Rental Service in Firework Festivals “Daredemo-Yukata” | | |
| Program period | 2023/06/26 to 2023/06/30 | | |
| Posting to the web | This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? Include | | |

Report contents

① The reason you joined the program

One of the main reasons for joining in this program was because I wanted to meet the aspiring students from all over Asia and enjoy intercultural communication. I spent a part of my childhood in China, where I experienced both Chinese and American schools and interacted with people from various cultural backgrounds. I have always enjoyed these kind of cultural interactions/communications and felt great joy in bonding with all the people I met, so I wanted to take this opportunity to meet new people.

Another motivation for me to join this program was to take part and contribute to the group discussions and group work. Being well experienced in groupworks is very important to me, as my dream is to become a global engineer and make contributions to the international society, meaning that I will be working with people from different countries, where I will face some challenges, but need to come to a consensus. Because of this, I have tried to take every opportunity I can, where I can work together in an international group, and I believe UEDC will give me an environment to build up my experiences.

② Pre-program preparations

I did not prepare anything prior to the program.

③ Program contents, activities

On the first day, we came together for the first time as a team. My team consisted of: 2 students from Tokyo Tech, and one each from KAIST, HKUST, NTU, and TsingHua. We briefly introduced ourselves and came up with our team name as “Tonkotsu ramen”, which is a type of ramen in Japan, because our favorite Japanese food was ramen. After getting instructions about design thinking and the overall procedures, we decided on “Firework festivals” as our Japanese event. Then according to the possible questions and topics we came up with, we interviewed two Japanese Tokyo Tech students and learned about their perspectives of fireworks, and found an interesting fact about Japanese males not wearing yukatas at firework festivals. Thus we created our POV, which was “A male student in his 20s has used to wear casual clothes to the firework festival because he feels embarrassed and peer pressure (**nobody else is wearing**). However, he wants to express his individuality through clothing in special occasion and needs **a little push**.”



TONKOTSU RAMEN - GROUP 2

(Our House Crest – “Tonkotsu Ramen”)

With the POV we created on the first day, on the second day, we questioned ourselves “How might we push the Japanese males into wearing the yukatas?” and started drawing sketches and coming up with ideas for our POV. The sketches included an easy-to-wear separatable yukata, yukata vending machines, DIY yukata, and competition games during the festival. We were not able to decide on our final sketch at this point. After the group work in the morning, we headed to the Ueno National Museum to see the Japanese and Asian arts.

On the third day, we started working on creating a storyline with the “Ki-Sho-Ten-Ketsu” outline. With the sketch ideas that we came up on the second day, each of us created our own story and later shared with the other group members. By combining our storylines, we proceeded to create our initial prototype. Our first prototypes included: (1) a one-piece yukata; (2) customizing stickers for yukatas; (3) sticker vending machines. After creating our first prototypes, we took the opportunity to test our products with users. Their feedbacks gave us important insights about our prototypes and the point of view of the users.

We started working on our final prototypes on the fourth day and final day. We finally decided on our final prototype which included: “Daredemo-yukata (simplified yukata)”; the yukata closet (vending machine for the yukatas); and the yukata pocket box (collecting box of the yukatas). They were all inspired by the existing products in the market, which included (1) the simplified separatable yukata sold in a popular women’s brand, (2) the labelling fruit machine which allows you to customize your own labels, (3) the delivery box that stores your deliveries until you receive them, and (4) the automated checkout systems that uses RFID technology to identify the items in the box. We especially spent a certain amount of time on creating the yukatas by creating templates and finding the suitable materials to reproduce the yukatas. At the end of the fourth day, we had some time to show our sketch and prototype to the other groups and receive feedback from professors and other participants. This was very helpful, as we could get precise and sharp comments from a perspective we have not thought about, and also a great chance to learn how other groups were dealing with their POVs and issues.

Lastly, at the end of the program, we made a final presentation about our prototypes with the skit and pitch, along with explanation about our designing process. During the presentation, we were also able to learn about the other teams' prototypes and their creative ideas behind it, along with a very nice skit.



(During our presentation)



(Slides for our final prototype)

④ Program participants

Program participants included:

- 9 students from Tokyo Institute of Technology
- 5 students from The Hong Kong University of Science and Technology
- 5 students from Tsinghua University
- 5 students from Nanyang Technological University, Singapore
- 4 students from KAIST



(Our first group selfie)

⑤ Any difficulties you faced during the program

One of the difficulties we have experienced during the program and the design process was narrowing down the ideas and solutions that we had. After deciding on our POV, we had so many creative ideas and solutions from each member, but it was difficult to choose our main solution because all ideas were unique and well-thought. Being able to come up with multiple solutions and see things from a multiple perspective is important in one way, but because we have restrictions such as time and budget, I felt it was also important to be able to narrow down the options we have by finding the essence to each of our options and considering its feasibility. This was especially important at the UEDC, as we had only a short period of time to think and work on our prototype.

⑥ Outcomes of your participation in the program

One of the greatest outcomes of participating in this program was meeting students from other Asian countries, creating bonds, and sharing our cultures with each other. Although it was a very short time, we spent most of the time together during the program, since the group works were from morning to evening. As we were mostly Asian students, we had a lot in common, but at the same time, there were significant differences that we had, and our cultural backgrounds were so diverse. I was especially amazed that most of the students were multilingual, some even being able to speak four or five languages. I truly felt that your mother tongue, the language that you speak daily, the language that you study in, the language you are familiar with were not always the same. It was amazing to learn about them and also have a chance to share my own country's culture as well, especially since I was one of the few attendants from Japan. I truly felt that the diversity is what makes us so unique, but at the same time, the similarities we share are what brings us together. Another major outcome of participating in this program was the feeling of accomplishment after we finished the whole program. Although it was only five days, each day was very intensive, and time for each process was very limited. In some parts we were not able to finish in time, and there were also times that we were worried about the outcome of our prototype and presentation. However after completing the presentation, we were proud of ourselves for completing the tasks and coming up with a great prototype in limited time. This sense of accomplishment also comes from the great teamwork that we had had, and all of the members' efforts to bring together our product. I truly appreciate my team and everyone who has supported us throughout the program.



(My team members)



(After our "Uchiage (after party)")

⑦ Any comments regarding "Museum Tour"

I felt the Museum Tour at the Ueno National Museum was an effective way to understand and appreciate our Asian cultures. I was not able to see the whole exhibition, but visited the Asian Area, where they showed Asian arts from different periods of time. The biggest impression that I had was the similarities that we had shared. For example, in the first part of the exhibition, I saw some buddhas from ancient China. At the end of the exhibition when I went to see the Japanese arts, I was surprised to find an exact similar statue. I truly felt that the cultures that we Asian countries share are so intricately connected and related to each other, that it is sometimes very hard to tell which influenced which. It was a good opportunity to acknowledge that the similarities we share and the influences that we have on

each other is ancient, and we would always continue to influence each other.



(In front of the Ueno National Museum)

⑧ Any advice for students who wish to participate in a similar type of program

I greatly encourage anyone who wants to make friends from overseas, and to accomplish something through group work, to join these kinds of programs! Although UEDC 2023 was just a five-day intensive program, I was able to meet aspiring students from all over Asia and become good friends with them in such a short time. In addition, I have accomplished in making a prototype with my fellow group members. It is indeed challenging, but I feel there is more to gain than the challenge itself, so if you're unsure, just take the challenge and enjoy!

ASPIRE Undergraduate Engineering Design Challenge 2023

Student Workshop

Completion Report

Report Date 2023 07 07

| | | | |
|---------------------------|---|-------------------------------|----|
| Your Name | Hinako Iwashige | | |
| Affiliation at Tokyo Tech | School of life science and technology, Department of life science and technology | | |
| Student ID# | - | Current academic program year | B4 |
| Presentation theme | Can recycling system in Hanami season | | |
| Program period | 2023/06/26 to 2023/06/30 | | |
| Posting to the web | This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? <u>Include</u> Exclude | | |

Report contents

① The reason you joined the program

I have three reasons. First, I would like to promote my English. This is because I have plans to study abroad next year, and it is necessary to improve my speaking and listening skills in English. Second, I would like to discuss some themes with foreign students. I have ever tried to discuss some theme in English. However, I couldn't express what I wanted to say well. So I will try to join the discussion again. Third, I would like to get along well with foreign students. I would especially like to know about their county, university, hobbies, and interests. So the program is a good chance to connect with other university students from a foreign country.

② Pre-program preparations

Actually, I didn't prepare for the program. This is because I live with roommates from foreign countries, and I have chances to practice speaking English in my daily life. Moreover, I'm now studying English for the TOEFL and other English tests every day. That is, I didn't make special preparation for the program, but I keep in mind, "Don't hesitate to make mistakes when I communicate with others in English. It's more important to say what I think until others make sense" before the program.

③ Program contents, activities

The schedule is below:

| | June 26 (Mon) | June 27 (Tue) | June 28 (Wed) | June 29 (Thu) | June 30 (Fri) |
|--------------------------------|-------------------------|---|------------------|------------------|---|
| 10:45-11:35 | Ice break & Orientation | Instruction | Instruction | Instruction | Group Work |
| 11:35-12:25 | | Group Work | Group Work | Group Work | |
| Lunch | | | | | |
| 13:45-14:35 | Instruction | Visiting Museum in Ueno (by reserved bus) | Instruction | Instruction | Group Work |
| 14:35-15:25 | Group Work | | Group Work | Group Work | |
| 15:40-16:30 | | | | | Final presentation & Reception (-18:00) |
| 16:30-17:20 (Final Day ~18:00) | Feedback Meeting | | Feedback Meeting | Feedback Meeting | |

In the program, I learned "engineering design." The first day I took the lecture on engineering design and Japanese traditional events such as Hinamatsuri, Ohanami, Jyugoya, etc. In my group, we forced Ohanami. We interviewed Japanese students about their experience of Ohanami. After that, we found the problem and came up with a solution. We made the first prototype. However, we found the data from the interviewee was not enough for the presentation after the user test of the first prototype. So we had interviews with other Japanese students again. Lastly, we developed our first prototype design and made the final prototype with a laser cutter.



We had a skit, picture, and presentation of our solution.





Also, We went to the National Museum.



We went to many restaurants together during lunch time every day.



④ Program participants

There are a total of 28 participants. Nine participants were Tokyo Tech undergraduate students. Others came from foreign universities, including The Hong Kong University of Science and Technology, Tsinghua University (China), Nanyang Technological University (Singapore), and KAIST (South Korea). Most Tokyo Tech students are international students. Only two Tokyo Tech students are Japanese.

⑤ Any difficulties you faced during the program

When I discussed it with other team members, I had difficulties. Especially on the first and second days, I couldn't listen to what they said because they spoke so fast. So I asked them to repeat what they said or to change their words to easy words. Also, sometimes I cannot express exactly what I want to say, but I tell them with body language or images. When I made the draft of the final presentation slide, I had difficulties because time was not enough and I couldn't come up with appropriate sentences in English. In that case, other team members said, "Anyway, it is OK to write what you want to write. If you make mistakes or your expression is not appropriate, we can correct your words and buff up your slide. So, we want you to make the draft." Thanks to their word, I completed the draft.

⑥ Outcomes of your participation in the program

It is my first time learning engineering design. So I learned how to conduct an interview, how to find a problem, how to make a prototype, and how to do a user test. Furthermore, because participants in this program came from different foreign countries, I learned about the variations in their career plans, their university lives, their countries, etc.

⑦ Any comments regarding “Museum Tour”

I watched not only Japanese art but also that of other Asian countries. Also, I learned about the art of the country because I talked with international students from Uzbekistan during the museum tour. I asked about the difference between Japanese art and his country's art. It was so interesting.

⑧ Any advice for students who wish to participate in a similar type of program

If you are interested in the program, I would like you to try to join it. Don't hesitate. Actually, I was so nervous before the program started because I did not have the confidence to communicate with foreign students in English as well as you. However, you can use pictures, drawings, or body language when you have trouble communicating with international students. You will undoubtedly gain new perspectives as a result of the program.

ASPIRE Undergraduate Engineering Design Challenge 2023

Student Workshop

Completion Report

Report Date 2023 07 XX

| | | | |
|---------------------------|--|-------------------------------|------|
| Your Name | - | | |
| Affiliation at Tokyo Tech | Transdisciplinary Science and Engineering | | |
| Student ID# | - | Current academic program year | 2023 |
| Presentation theme | Scoop n Go (Toy car for Setsubun) | | |
| Program period | 2023/06/26 to 2023/06/30 | | |
| Posting to the web | This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? Include / Exclude | | |

Report contents

① The reason you joined the program

I first saw this program information through email. I was very excited as it is the first exchange program that international student like me can join. I always believe that it is good to exchange ideas with people with different backgrounds especially with my major that requires the skill to solve global problems. I was also excited to make new friends from abroad.

At first I was a little bit hesitant as I am not sure whether I will do well enough to provide information about Japanese culture. But this is also the point that caught my attention, I think the topic of solving problems that are subjected to only Japanese society is interesting. So, I decided to join in the program anyway, and it turned out to be an experience that I didn't regret.

② Pre-program preparations

There are not many preparations before the program. Most information is provided through Slack and email. I personally prefer email more as its notifications are better. But I think Slack works well and suits the situation where everyone is in teams.

The program handouts are very useful. I think the most useful part is the preparation for weather and situations in Japan. It rained almost every day during the program, but people were not wet because they were warned beforehand.

③ Program contents, activities

During the five days, my team have came up with the idea name scoop n go. It is a toy car dedicated for collecting leftover beans from the event Setsubun. I think we did well on solving the problem we define. However, the event Setsubun is more of an at-home event, so our problem wasn't as big as other problems and didn't create much of the impact to the society.

I think the fun, but most exhausting part is defining the problem. We spend majority of our time on this topic. It was hard as people we interviewed give completely different opinion in our idea and prototype. We were not able to define the problem until the last day that we decided to be solid about it.

The designing and sketching is memorable for me. My sketch got chosen to be our team idea. I was very happy to see me idea got shaped by my teammates. It make me remember that I will always revised my idea with other people as it gives better point if view on the problem.

The prototype process was fun. The energy of us matched each others very well, so we were able to have a lot of fun during our prototype making process. The presentation on the last day went smoothly. I took care of the slides making, and it was fun to summarize all the idea into something people need to understand in a few seconds. I also get to draw the crest for the team. It was fun and encouraging as I didn't draw for quite sometime.

Overall, it was a fun program. I get motivated in many aspects and learned a lot about other countries and their cultures.

④ Program participants

I didn't get to talk much to other people other than people from my team. But, I feel that they are all passionate and very knowledgeable in their own speciality. At first I was a little bit worried about language barrier, but everything went fine. There are some point that language become barrier, but everyone in my group except me are able to speak mandarin so everything was smooth. I also get to learn some words in mandarin and teach other people in my group some basic Japanese. It was very fun exchanging cultures and experiences with my friends from abroad. I feel that everyone is polite and respectful, so there is not conflicts or problem during our program. I think the atmosphere all the participants had created was very lovely and friendly.

⑤ Any difficulties you faced during the program

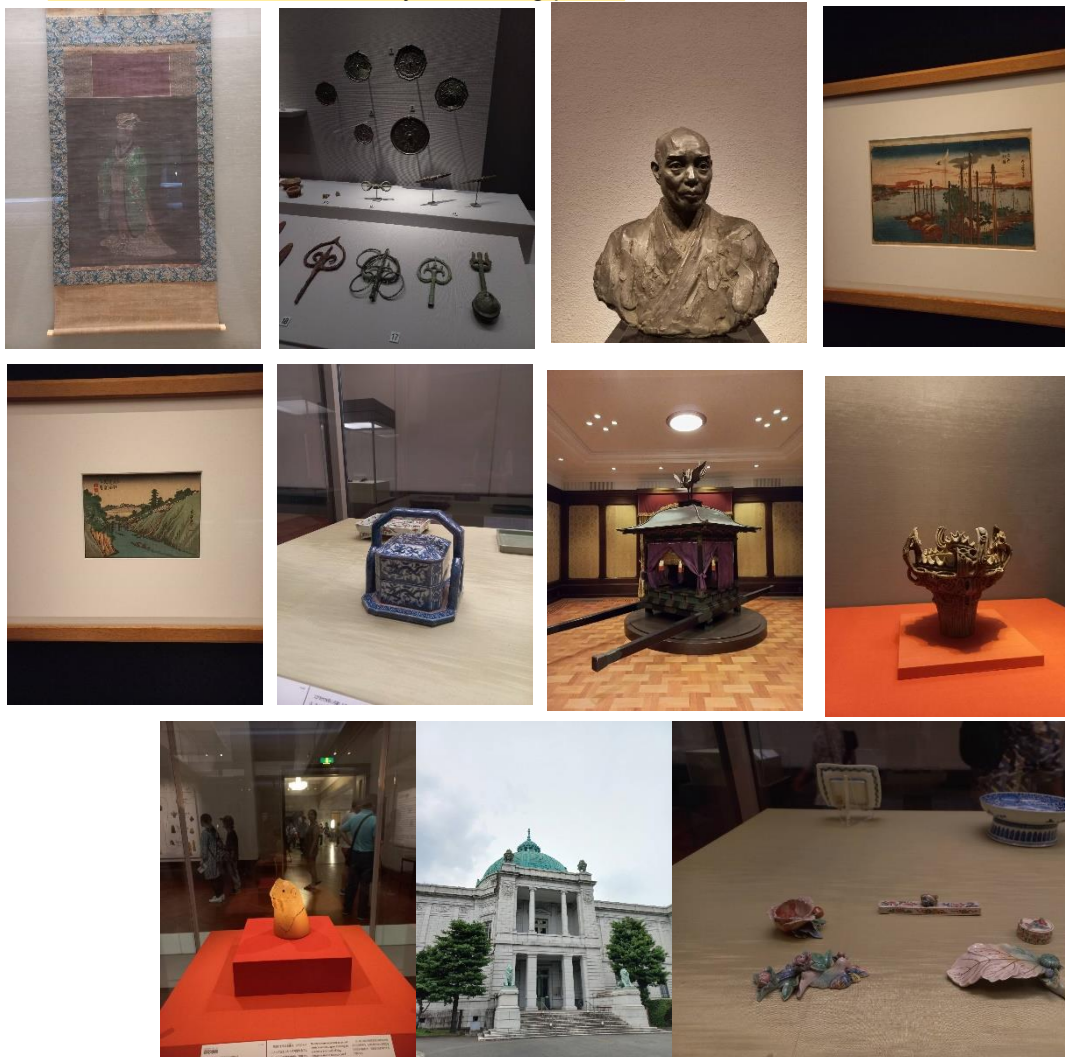
The main difficulties I and my team I faced the most is the communication with instctors. There are times that we are unable to meet the instructor standard because we couldn't catch what the task was. Also, the communication between instructors is also a problem we faced. We were asked not to do something and we had our TA ask the instructor again to confirm, however, another instructors give us the comment that we didn't do well because we need to do the part we were ask not to do. So, I think it would be great if we have a clearer guideline.

⑥ Outcomes of your participation in the program

I learned a lot through this program. I get the idea of how to design thinking process to solve problem work. I also learned about other cultures and languages. I get to meet people from different backgrounds and have fun with them. I will keep this experience in mind and will try to use them in the future. It was a very fun experience with everyone in the program.

⑦ Any comments regarding “Museum Tour”

During the Museum tour, I was very impressed by how many art pieces and artifacts there were in national museum Tokyo. I'm impressed by arts and how they are engraved in every objects in human life. It was also fun wandering around the museum with people from other countries. We had a very good discussion about the art pieces. I will surely give the museum another visit as it very interesting place.



Pictures of art pieces in the museum. Even the building itself is an art piece!

⑧ Any advice for students who wish to participate in a similar type of program

I highly recommended this program to those who wanted to gain new experiences and meet new friends from abroad. For people who are still hesitant because of English skill. I would recommend to try it and give it your best as people are always willing to help you. It will be a great experience, so please give it a try!

ASPIRE Undergraduate Engineering Design Challenge 2023

Student Workshop

Completion Report

Report Date 2023 07 07

| | | | |
|---------------------------|---|-------------------------------|----|
| Your Name | Heejoo Yoon | | |
| Affiliation at Tokyo Tech | Department of Chemical Science and Engineering | | |
| Student ID# | - | Current academic program year | B4 |
| Presentation theme | Design a product, system and/or service purchased only by Japanese people while understanding the fundamental five steps of "Design Thinking" approach | | |
| Program period | 2023/06/26 to 2023/06/30 | | |
| Posting to the web | This report may be posted on Tokyo Tech website. Would you prefer to have your name included or excluded from the report if it is uploaded? Include / Exclude | | |

Report contents

① The reason you joined the program

My keen interest in the cultures, mindsets, and distinctive traits of several Asian countries is what prompted me to sign up for the ASPIRE Undergraduate Engineering Design Challenge 2023. As an international student from Korea, I have always sought opportunities to immerse myself in diverse cultural experiences not limited by Korea and Japan. The ASPIRE program presented a unique chance for me to observe and experience intensively by bringing together five prestigious universities with distinct backgrounds: Nanyang Technological University, Hong Kong University of Science and Technology, Tsinghua University, Korea Advanced Institute of Science and Technology, and Tokyo Institute of Technology.

Additionally, as part of my quest to explore the cultures of various Asian countries, I have applied to the Tokyo Institute of Technology - Tsinghua University joint graduate program and am eagerly awaiting the acceptance letter. If I am fortunate enough to be accepted, I believe it would be immensely beneficial to establish relationships and forge friendships with individuals already residing in the region, as they can act as my guides and aid in my acclimatization to the new environment. Hence, my participation in the ASPIRE program holds particular significance at this point, as it allows me to connect with students from Tsinghua University.

Moreover, considering potential future opportunities, such as working in Hong Kong or Singapore, expanding my network and fostering international connections through the ASPIRE

program can be highly advantageous. Building relationships and gaining insights from individuals from diverse backgrounds can broaden my horizons and provide valuable perspectives. Therefore, I recognize that getting to know more people through this ASPIRE program will facilitate my personal and professional growth.

② Pre-program preparations

Regarding pre-program preparations, two key areas that required attention were language proficiency and time management.

In terms of language, I have been predominantly using Japanese as my primary medium of communication. To ensure effective and meaningful interaction during the ASPIRE program, I recognized the need to refresh my English proficiency, which has taken a backseat due to my focus on other languages. Additionally, I aimed to reactivate my Chinese language skills to facilitate communication with Chinese-speaking participants. To achieve these goals, I dedicated time to watching videos on YouTube, reading news articles in English and Chinese.

However, the most significant challenge I encountered was managing my time effectively. As a senior student actively involved in a laboratory, preparing for an early graduation this semester, and applying for graduate school entrance exams, finding five consecutive days of personal time required substantial effort. To address this challenge, I proactively communicated with my academic advisor and sought permission to rearrange my schedule, ensuring that I could allocate the necessary time and focus to fully participate in the ASPIRE program.

③ Program contents, activities

The program aims to introduce the entire process of Design Thinking, which can be described as follows: Empathize, Define, Ideate, Prototype, Test.

In my group, Sketch Squad, we presented a project titled 'Can Recycling System in Hanami Season' using the Design Thinking process. Here are the details of our project:

Empathize: We conducted semi-structured interviews with two participants— two young adult male students from Tokyo Institute of Technology. Through these interviews, we gained information what typically happens during Hanami events.

Define: During the Define stage, we created a journey map of a Hanami experience and identified a Point of View (POV) based on a Zawa-Zawa moment.

Journey map:

| | Before | During | After |
|------|--|---|---|
| What | <ul style="list-style-type: none"> •Prepare food & drinks •Find a picnic spot | <ul style="list-style-type: none"> •Having conversations •Viewing the cherry blossoms •Repel insects | <ul style="list-style-type: none"> •Clean up •Go home |
| How | <ul style="list-style-type: none"> •Buying food & drinks •Bring along a picnic mat and walking around the park | <ul style="list-style-type: none"> •Sitting on the lawn •Swatting them away or using an insect-repellent | <ul style="list-style-type: none"> •Pick up, sort and bring all trash •By bus/metro |
| Why | <ul style="list-style-type: none"> •Food & drinks to occupy participants •Crowded venues | <ul style="list-style-type: none"> •Once-a-year picnic •Appreciate the beauty of nature | <ul style="list-style-type: none"> •No public rubbish/recycling bins •Social responsibility to keep environment clean •Drunk (unable to drive) |

Point of View:

Who: Young adult Hanami participants

What: Cleaning up after eating and drinking during Hanami

How: Collecting and gathering all trash and taking it home

Why: Lack of public rubbish bins to prevent illegal dumping

Insight: Tired and/or intoxicated individuals must make an effort to clean up their trash after enjoying themselves, as it is a societal responsibility, even though it may be inconvenient and boring.

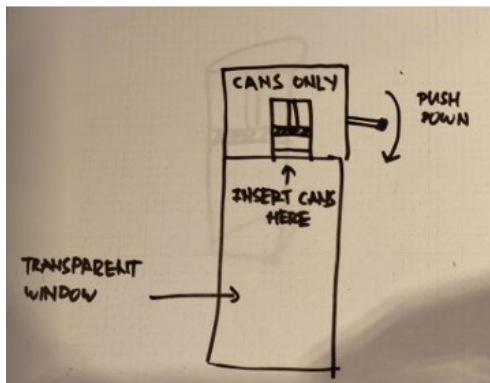
Ideate: During the Ideate stage, we formulated three "How might we?" questions based on our Point of View:

How might we allow people to not feel pressured or embarrassed to bring their trash home?

How might we make it easier for people to fulfill their social responsibilities?

How might we reduce the volume of trash generated?

Prototype: Moving on to the Prototype stage, we proposed our initial prototype, which is a specially designed attachment that only allows for the disposal of beverage cans. The prototype is designed so that cans are inserted one at a time and crushed by pressing down, with the crushed cans dropping into the bins through a small slot.



Test: For the Test stage, we received feedback from Professor Inaba and other instructors. We also conducted another interview specifically focusing on our first prototype. The feedback we received was as follows:

- Inserting cans one at a time is time-consuming.
- Crushing cans by pressing requires considerable effort.
- Making physical contact with the lever is unhygienic.
- The stakeholder who owns and manages the bin is not clearly stated.

Finalization: In the finalization stage, we developed our second prototype based on the feedback received from the previous iteration. The improvements we made to the prototype are as follows:



- Improved economic viability: We added advertisement spaces and incorporated a solar panel to enhance the sustainability and financial viability of the system.
- Gamification: To encourage proper use of the recycling machine, we introduced gamification elements to make the recycling process more engaging and enjoyable for users.
- Foot-operated lever: We incorporated a foot-operated lever for improved usability, eliminating the need for physical contact with the lever and enhancing hygiene.
- Multiple slots: We added more slots to the machine to allow for the disposal of multiple cans at one time, reducing the time required for the recycling process.

After these improvements, we evaluated favorite part of our product and service design as focusing on enhanced usability for users and convincing feasibility.

④ Program participants

Students from ASPIRE League universities.

(9 from Tokyo Tech, 5 from NTU, 4 from KAIST, 5 from HKUST, 5 from Tsinghua)

In our group, Sketch Squad, there were Danish from NTU, Kelly from HKUST, Kelvin from Tsinghua, Ayu from KAIST, Hinako and me from Tokyo Tech.



⑤ Any difficulties you faced during the program

As mentioned above, two key areas required attention, language and time management, plus stamina were major challenge during the program. During the interview, I recognized the need of translating between Japanese and English, both foreign language for me, almost reached my brain capacity limit. However, it is uncommon and let me be motivated, so it is a valuable experience Time management and stamina issue were real challenge, but due to it is not directly originated from the program, I would like to abbreviate it. Nevertheless, there were some challenges but the outcomes from this program exceed far away besides difficulties.

⑥ Outcomes of your participation in the program

I was able to acquire intensive lecture about Design Thinking, and introduction.

And...

The biggest outcome is making new friends. I was organizing large meal, nomikai, karaoke night for tens of us. It was great pleasure for me to promoting participants to have nice memory and watching them getting close to each other



⑦ Any comments regarding "Museum Tour"

I first arrived Tokyo Tech 2017, but have never been to museum in Japan. It was nice experience but I would like to make a few comments regarding museum tour.

- I believe it would be better to have guide who explains meaning of relic
- The time was relatively short
- I believe every participants are grown up and they can navigate themselves. Bus to museum is grateful, but I am not sure for the necessity of coming back to campus whole together.

⑧ Any advice for students who wish to participate in a similar type of program

It was a great opportunity getting to know many people with distinguishing backgrounds. I wholeheartedly encourage you to participate this or similar types of program. Additionally, I am not sure whether it is appropriate to mention it but it would be nice to know large restaurants can accept group of tens