

HIGHTO



Jinyoung's Letter

What is graduation work for you?

It's the first time as an undergraduate that you're free to design what you want to do. I think that's the meaning of graduation work. It took a lot of patience to hold onto a project for a year to me. At first, I had made up my mind that I would do a memorable graduation work, but I often wanted to run away from it. (Of course, it's just imagination, so I'm writing this chronicle part.) From that one, I learned the only thing I could do without running away from my graduation work is the affection of my work. Haha, in the end, there's only one thing I want to say to all of you who are preparing for the graduation work. 'Do what you want to do.'

For those of you who are looking for what you want to do, I hope it'll be a clue to UNIST Chronicle 2020.

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HIGHTO

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**HIGHTO helps start
communication within small
groups.
The subtle height of the rod
allows user to reach the other
more easily and simply by
supporting ‘pre-communication’.**

Jinyoung Moon

Prologue

My time as a design student was a journey to get to know myself.

I remember thinking about it for a few days when I was asked to proceed with the project in my design lecture. No matter how much I think about it, I didn't have a clear taste. It was a great stress to me that I couldn't even answer simple questions like my favorite color with confidence. I thought the biggest strength of being a designer is his or her own taste, and the designers who have that personality have been people who have a firm understanding of their tastes. Starting with own taste, getting more and more involved design personality in own way. And I was worried by the thought that I hadn't been able to get started just like people who have their own taste.

From then on, 'What do I like?' I couldn't get out of this question for years. No matter how hard I think about it, I certainly didn't like anything. So I was envious and sometimes jealous of my peers, who clearly told me what they liked. Also, They have beautifully incorporated their tastes into their design works.

I got used to asking unanswered questions and I decided to change the way I asked myself. What do I think the most? What do you spend the most time on?... I started again by pointing out each and every move I did. The answer to that was communication. In my memory, I was constantly talking to other people. And I thought that if I could make something that could connect people to communicate, I would be able to do a good job. That's how the project 'HIGHTO' started.

(Ah, also I can answer about my favorite color now. 'yellow with a slight mixture of orange'.)

Background

This project started with my personal experience. After entering high school, I started living in a dormitory apart from my family. And naturally, I got to communicate with my family through my cell phone. However, since each of us has a different communication possibility time, it is difficult to contact each other even if we try to find the right time to contact each other. In face-to-face situations, you wouldn't have had this difficulty communicating.

With the development of transportation and communication, there is a growing trend of families like me, and based on this experience, I can expect a lot of these inconvenient time differences in communication. So, I started this project because I thought it would be necessary to reduce this time gap to increase the frequency of communication, not just with my family, but with close friends living far away.



Example of time difference of communication

Concept

A goal of 'HIGHTO' is to support pre-communication. So, what is pre-communication? Imagine the face to face situation. Before starting communication, there is nonverbal communication to starting exact verbal communication, like gesture, pose, or facial expression. From these, we can catch whether he or she can communicate or not. Like this non-verbal communication exists before a definite verbal-communication and I've named these subtle step "pre-communication." When we think of separated people who want to communicate each other, there is no pre communication step before starting communication. They just call or text to the other. in other words, they immediately start their communication in one direction. in such cases, communication begins in only one direction and it may take time to communicate in both directions. I thought it would be easier to start communication even when people are away from each other if these pre-communication parts are supplemented by products.

I considered about how to physically show pre-communication. Nonverbal communication had to be considered so that this subtlety could be delivered well even by physical products because there were subtle differences between people. In addition, I wanted to see if this expression was meaningful in group communication, not just 1:1 communication. In addition, I decided to make a product that can be used by 3-4 people to reduce other limitations as much as possible as we want to see the possibility of group communication.

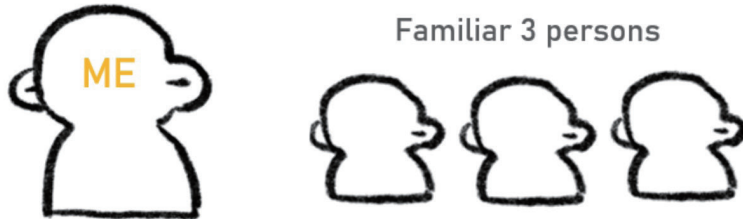
As a result, I came up with the concept of a product that conveys own intention through the subtle height difference of the rod.

Design Development

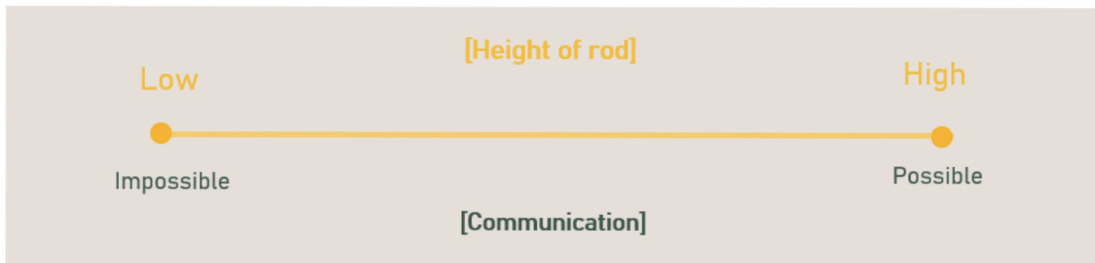
Function Function of HIGHTO is simple. HIGHTO has a total of four rods. When the rod is the highest height, it is fully possible to communicate, and when the bar is the lowest height, it is impossible to communicate. Each rod means approach person, and left one is me and others is my friends or family members. People can identify their level of communication through the height of their rods.

HIGHTO

Design Direction As the four rods move, a design is needed to distinguish the height of the rods efficiently. In addition, considering the user scenario, HIGHTO is best suited for use at the desk, so a design is needed that would fit well at the desk. So I try to design an intuitive product as simple as possible.

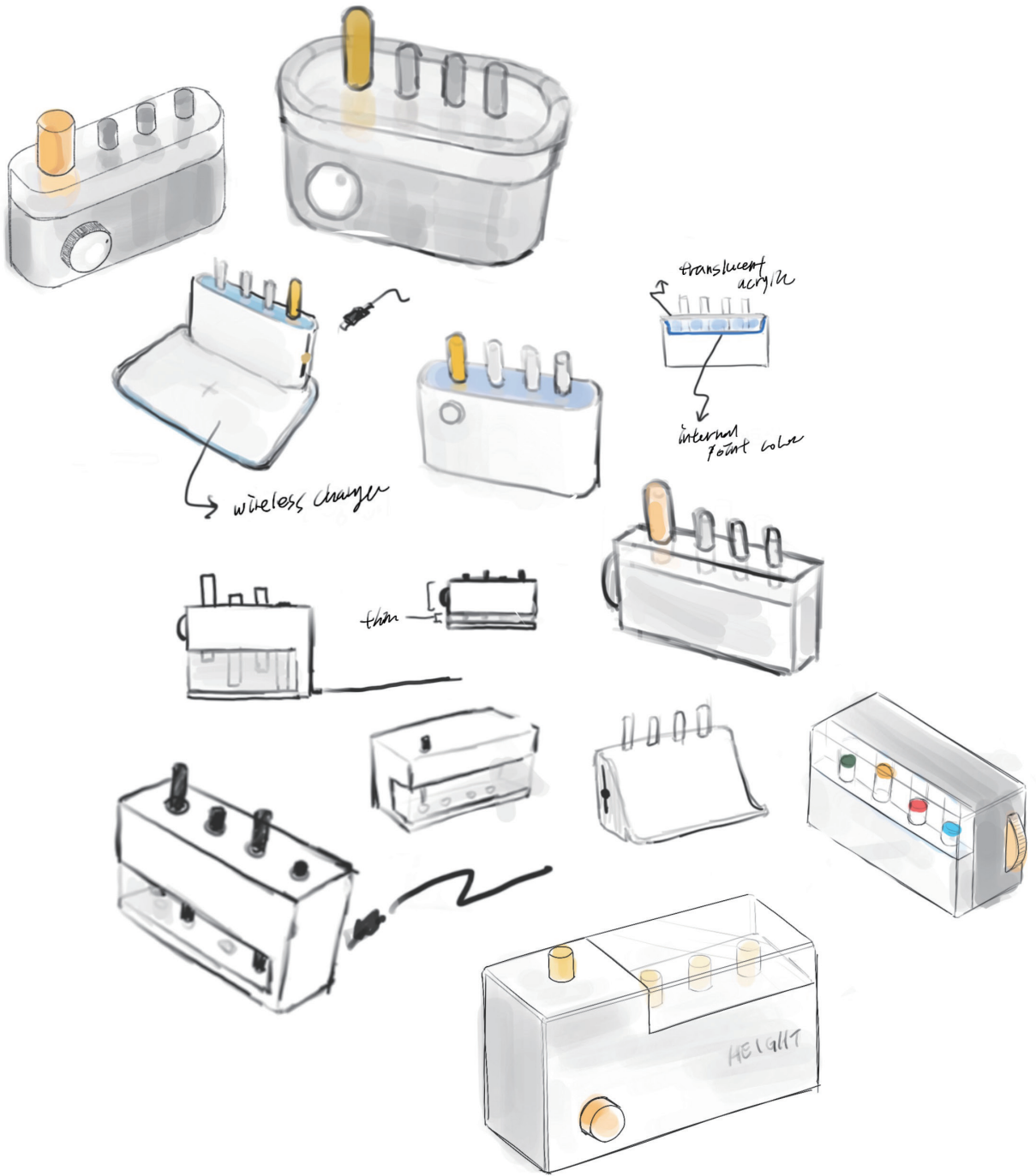


ME Familiar 3 persons





Moodboard

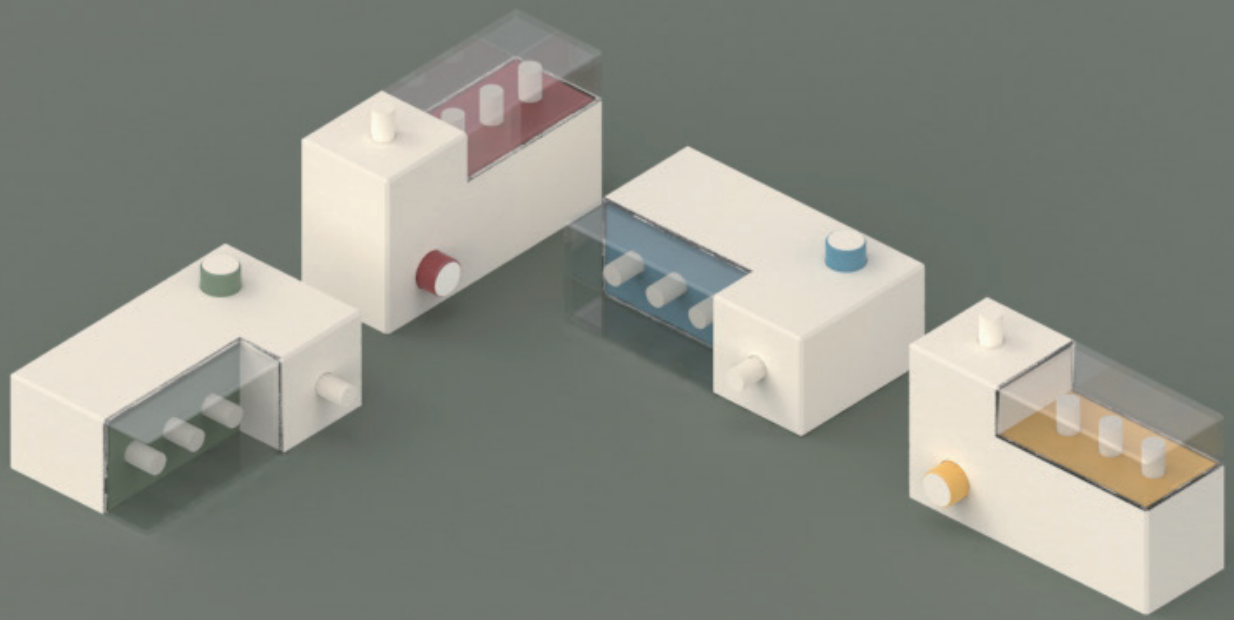


Sketch

Form Developing the design, I tried to increase the intuition of the product and arranged rods whenever they are used. So, the transparent part containing rods inside was designed to fix the shape of the HIGHTO regardless of the height of the rod. In addition, the user's rod is outside to recognize user immediately and user can adjust the height of the rod via a dial.

I tried to find a design-balanced size starting from the minimum size by calculating the minimum space for internal components.

Color HIGHTO was necessary to use as little color as possible to match other products. White is the main color, and point colors are added to the dial and the entrance to rods(bottom of transparent part) to make them noticeable.



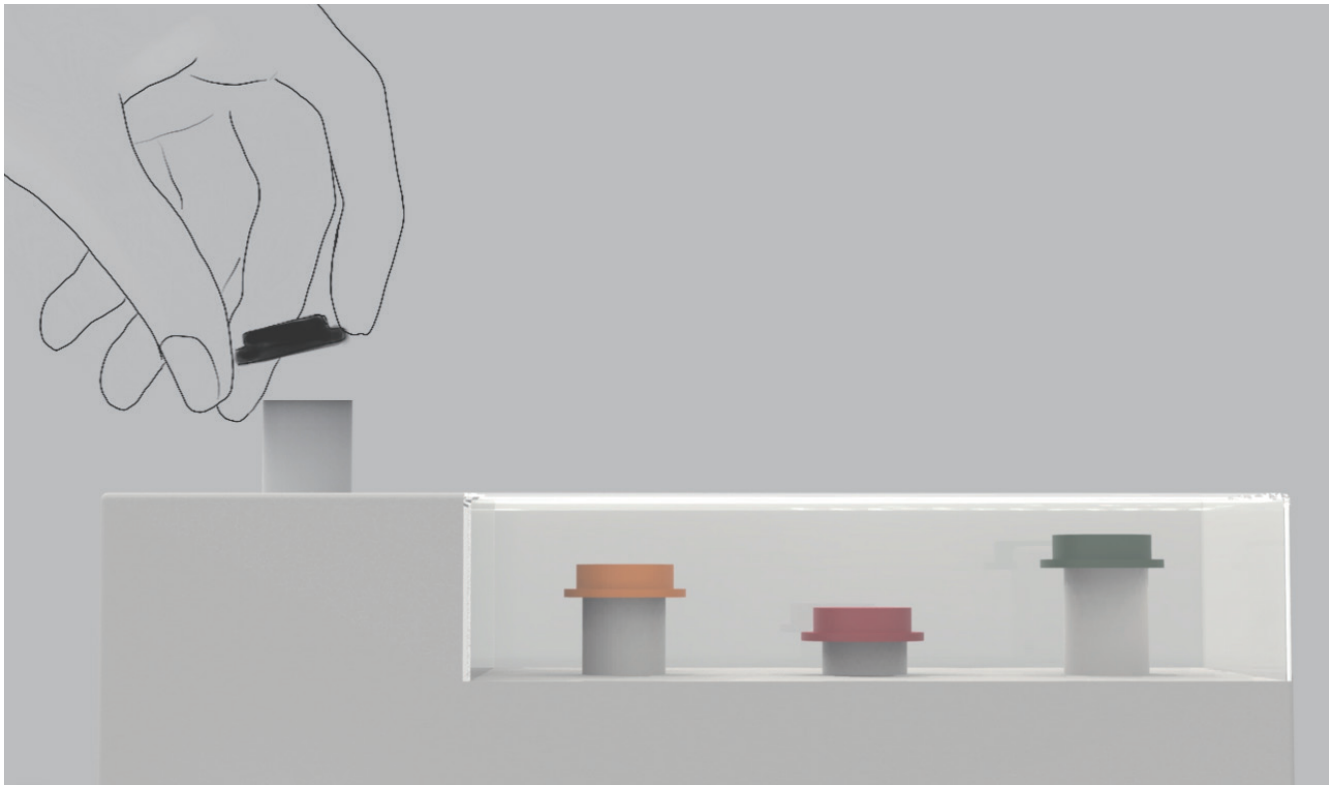
Material The main part was made of plastic to harmonize with desk object and finalized with a matte gloss. And user can open and close the transparent part, lightweight material 'acrylic' was selected.

Hat of rod When designing, I was told that it would be difficult to distinguish between the rods that represent the group members. So instead of changing the design, I decided to give users an option to distinguish between rods.

In order to make it easier for users to distinguish between other people's rods, the hat of the rod allowed users to customize the rods themselves.



← ↓ *Hat of rod*



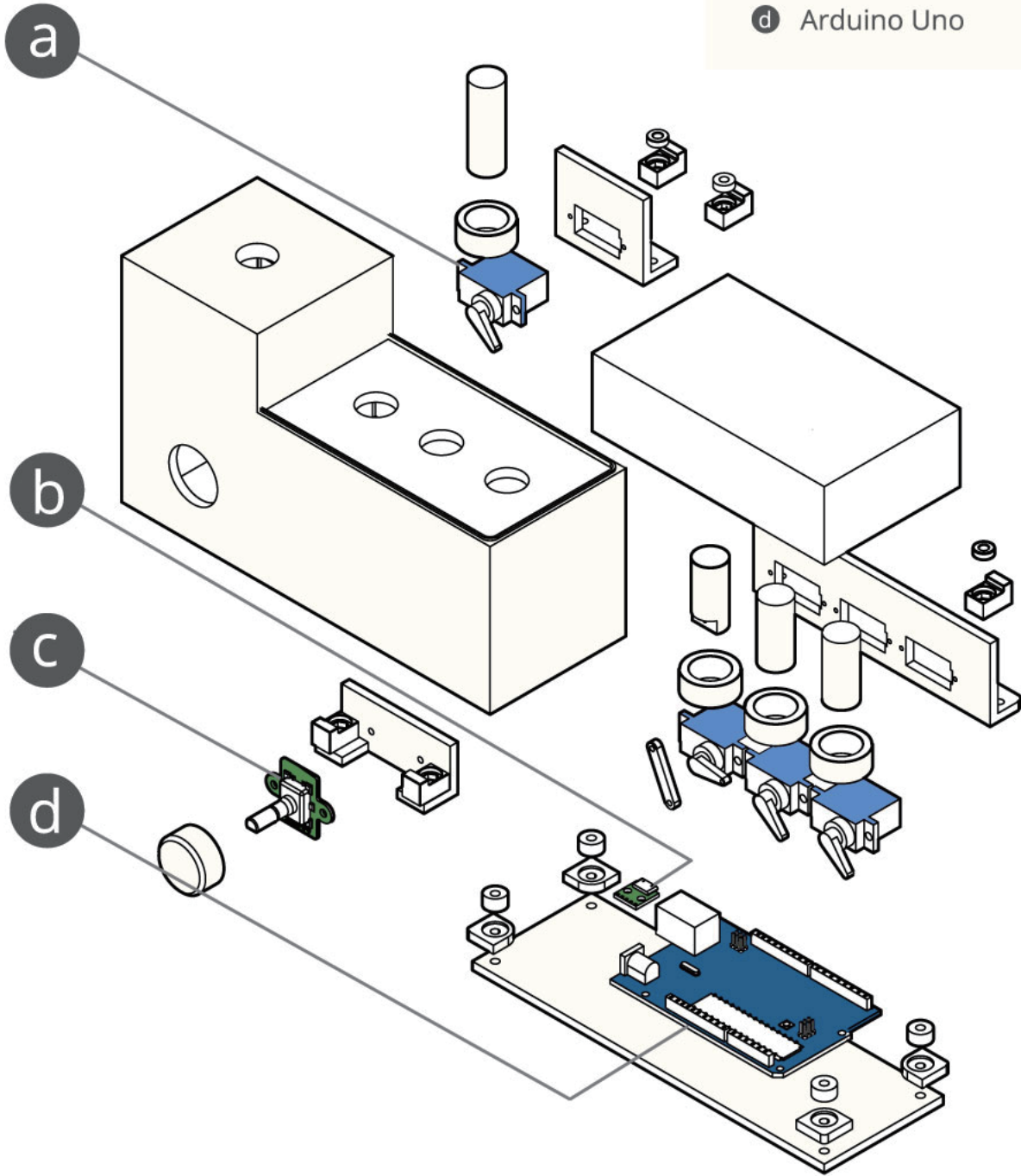
Prototype

To understand the concept of HIGHTO easily, I needed to make at least two HIGHTOs because each product is a product that interacts through the rod height.

The hardware of HIGHTO, the ABS plate and acrylic were made respectively by CNC machines and the letters of the product were treated with silk screens to enhance its completeness.

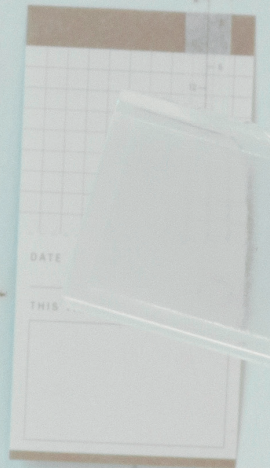
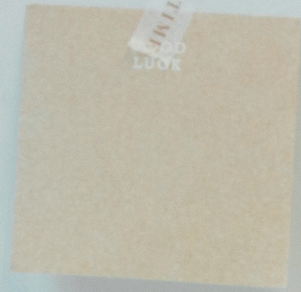
The software was controlled by the Arduino Uno and the height adjustment was controlled using servomotor(rod) and rotary sensor(dial). By communicating two Arduinos, each rotary value is received, and user can actually see the two products interacting.

- a Servomotor
- b mini 5pin module
- c Rotary sensor
- d Arduino Uno





HEIGHT





Exhibition

In order to show the interaction between the two products in a limited exhibition table space, I made boxes to match the exhibition table and the placed height difference. In addition, captions were attached to the height of the product so that users could quickly learn how to use the product and placed goods suitable for the whole display.

Feedback

No one noticed the link between height of rod and the communication possibility until it was explained. Some people were attracted to expressing their subtle opinions through height differences, but others said it would be more convenient to express them in stages. Also, some said the noise from the servo motor, while others said they wished their rods were in the same position. It also suggested increasing the usability of the product through other interactions as well as adjusting the height of the rod.

HIGHTO

물리적 막대의 미묘한 높이차로 그룹 내 의사소통의 시차를 줄인다
Supporting pre-communication for a small group through subtle height differences of physical rods



Desing Show UNIST 2020

Design Show UNIST 2020 was held from November 12 to 18, 2020. Each student organized the exhibition in line with the concept of the exhibition and it was a good opportunity to consider the display of own design project. Also, It was also an opportunity to hear the actual responses and feedback of many people.

Epilogue

HIGHTO



“The attitude of accepting feedback is important, but the attitude of giving feedback is also important.”

Why did you choose product design when you could design communication?

I felt a great attraction not only for communication between people but also for communication between products and people. It seems attractive that my products interact with people and communicate with others like my alter ego. So I chose the design of the product, and it was especially attractive to actually touch and deploy the physically implemented product. Oh, this is also communication with my product.

How did you make the final mock-up?

Actually, I really wanted to try acrylic CNC and silk screen. I had been talking with Mr. Yook for two weeks to modify the modeling so that I can actually make it. And then I spent one week doing CNC, and two weeks doing sandpaper and spray. Of course, I did Arduino coding in my spare time, but it was harder than I thought to put various functions in one coding. I completed my coding by searching the Internet and two books of Arduino on my desk. I'm confident that I can make it more stable next time.

What did you learn after the graduation exhibition?

I learned that a year is longer than I thought. I got tired of my project more than I thought. Thanks to you, it was a project that helped me develop my patience. Also, as I keep fixing the product through feedback, there are times when unexpected results come out. I think the feedback from my colleagues and professors was really good. Because of COVID-19, I couldn't meet my colleagues in person and talk to them, which is a bit disappointing. The feedback on the text was so good, but wouldn't it have been better if we actually had a face-to-face conversation? That's what I think. But I think I've learned to accept feedback. Of course, it was also an opportunity to learn how to say when I give feedback to others.

“I can't define just one thing I like,
so I'll think about it after I put everything in”

Do you have any special episodes about the graduation exhibition?

As I said above, COVID-19 doesn't have many episodes related to my colleagues. Well, if there's one thing, I built a wall inside the showroom and planned an exhibition space, but there were more changes in the plan than I thought, so I kept in touch with the wall company and changed the layout. I fixed the layout of the wall about a week before the exhibition, and I'm very grateful to the companies. Oh, and we urgently changed the layout, so I was really down on Thursday because there was no lighting on one side of the exhibition hall, but the professor brought the lighting...Thank you very much, actually. Of course, I'd like to thank Geon-ho for buying a light bulb. Well, the other thing is that I met two kittens at the end of the exhibition!

What is your future plan?

I actually looked at people's reactions during the product exhibition, and then I started to see what I missed. First of all, I will do to know how to use the product more intuitively and to deal with the noise problem. Also, I am planning to study actual user study, so I want to study Wi-Fi wireless communication.

Any last words you want to say?

Oh, I know reason that why people tell me 'if I can avoid the exhibition, avoid that.' I'm just kidding. Oh, but there were so many things that I was sad about because of COVID-19. I thought, 'I should've done it last year'. But...If I did it last year, I wouldn't have thought of HIGHTO. And I think (Why do I keep thinking? This is proof that a year has been long.) this is the result because I can concentrate on my graduation work with ease. And the planning of the exhibition was a fun experience, although

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Concept page

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Moodboard page

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Exhibition page

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* All other visual contents were created by Jinyoung Moon, the author of this issue.

