

# Team Reflection

## Team Mobody

Sicheng Yang, Paula Lin, Menghao Huang, Kaho Cheung

## 1. Team domain & Problem space

We are **Team Mobody**. This paper will focus on a team level reflection on our work during the whole semester. We will provide individuals solutions relatable to our domain, and the insights and potential opportunities we learnt from our users. Our team domain is **Body as Controller** and our problem space is improving one's wellness through breathing. Our team decided to use mouth breath as the body controller to control the responses in our installation. The responses are an important indication to the users if they are doing the breathing exercise correctly. We aim to improve user's wellness by providing visual and audio effects to guide the users during interactions. Through research of our problem space, we have learnt that there are many different types of breathing techniques and each technique has its own benefits. In general, breathing exercise is beneficial for the human's physical and mental well being. It increases lung capacity, releases trapped air and promotes relaxation. Therefore, according to the benefits of different breathing methods, each of our members ideated different concepts to suit our own target users. Our common goal is to let users be able to interact with our designs when doing different breathing techniques. While developing our concepts, human values such as calmness, patience and concentration are unfolded. In general, breathing exercises often promote relaxation and calmness. During the breathing exercise process, concentration and minimal distractions are essential to make sure the user achieves calmness at the end of the session. It also requires consistency and patience to carry out the breathing exercise on a regular basis to maintain good breathing patterns and improve overall wellness. In a nutshell, we hope to improve our target users' health by creating an interactive platform that can educate and motivate them to practise their breathing exercise.

## 2. Relation Between Team Solutions

Our group chose a different direction during the semester to explore the possibility of breathing training to bring people well-being. At the same time, we are also close to the domain of using the body to interact.

The direction chosen by Paula is an art installation to promote breath training for the public to relieve anxiety. The device uses the breath as the controller to interact and provide artistic visual feedback. Sicheng chose to provide breathing training guidance for jogging users. He designed a wearable helmet that uses breathing and body movement to interact, and provides visual feedback to guide users in breathing training during jogging and

improve exercise results. Nick chose to design the abdominal breathing training device for singers. Nick made a tree-shaped device, and used a microphone and a belt to identify the user's abdominal breathing state, and lit the tree according to the length of exhalation. Through breathing training, users can learn to use abdominal breathing and train their lung capacity, so that they can play better when singing. John took a different approach, using a user's heartbeat as a controller and breathing training as a medium to create a meditation device. When the user's heart rate rises because of anxiety, the device will guide the user to perform breathing training to reduce their heart rate and reduce anxiety level.

The designs of Paula, Sicheng, and Nick all use breathing as the controller to explore the possibility that breathing interaction brings positive effects to users' wellbeing in different areas. Team work allows us to share some of common solutions, such as how to effectively obtain the user's breathing input. But in addition, we also tried to combine breathing and other body control elements. For Nick, it is abdominal movement, and for Sicheng, it is the pace of jogging. Although John does not directly use breathing as input, John also uses breathing training to allow users to self-regulate and achieve wellbeing.

For the broader *body as controller* theme, we have all tried to use a part of the body for interaction, either breathing or heart rate. Therefore, users no longer need to learn how to use controllers, but use existing intuitive interaction methods to interact with the devices, which reduces the user's learning cost and enhances the level of fun. And we all try to make the device tangible or wearable, and also bring users a more physical interactive experience by using a tree, helmet, artwork and heart rate box.

### 3. Insights & Opportunities and considerations

By focusing on different research directions of the same problem space, some design insights have been identified by our team to provide other researchers with inspirations and considerations for exploring playful interactions in both Body as Controller and Breathing domains.

First, we have got a deeper understanding of the broader domain, Body as Controller. Since users no longer need to use additional physical controllers to interact with the system, and their bodies become part of the interface, the intuitiveness of the interaction is greatly enhanced. Instead of spending extra time and effort on learning how to use controllers to process the interaction, users can directly manipulate digital data using their whole body or a part of their body. This not only contributes to simplifying the interaction process, but also improving users' interaction experience in terms of directness, efficiency and novelty.

For design opportunities, many of the existing interaction systems in this field are gesture-based or limb-related, in which users control the interaction using their hands, arms or legs. Through our team's exploration, we found that other parts of users' bodies, such as mouth and abdomen used for breathing, can also be interesting controllers of playful interactive systems. Therefore, we believe that exploring more possibilities of different parts of the body as controllers has great potential in this field.

Moreover, for the specific design topic of our team, Breathing for Wellness, we have also identified some design insights. Practicing breathing is indeed an abstract thing, so providing users with concrete feedback is crucial to improve their training efficiency. Since the training effects of traditional breathing exercises cannot be directly mapped to some concrete objects, users often face the dilemmas that they are not able to clearly know whether they practice correctly and have no idea about how to improve their practicing method when they are not on the right track. Therefore, in each of our concepts, we provide intuitive feedback for users by visualising the breathing data in meaningful ways. For example, we use graphical patterns to indicate the user's breathing frequency and use the number of LED lights to show the user's breathing out time.

Another design opportunity worth exploring is providing users with multi-dimensional feedback. In iterations of our team's projects, we found that multiple interaction feedback was helpful in offering users playful practice guidance. When practicing, users' engagement can be greatly enhanced by combining different types of feedback, such as auditory and visual feedback. Users reported that the combination of feedback can not only give them a more comprehensive interaction experience but also help them improve their training effects from multiple aspects. At this stage, our team's concepts enhanced the novelty and user experience of breathing practice by mainly providing users with auditory and visual feedback, but in the future exploration, we hold the opinion that more diverse combinations would be valuable. Therefore, when exploring playful interactions for breathing, in addition to auditory and visual feedback, it would be meaningful to consider different types of feedback combinations, such as tactile and vibration feedback.

## 4. Nature of work on pandemic

Due to the outbreak of coronavirus, the course has transformed to an online class. The course learning activities, including studio and workshop were delivered through Zoom, Slack and Miro. Surprisingly, the teaching quality and team organization were not affected. We are able to follow the teaching instructions and fulfill the project criteria in this online environment. Other than the course structure, our team project has changed to individual projects focusing on the same problem space and team domain. The breakdown of the project allows each group member to research a specific area and dig deeper into the needs of a specific group of target audience.

Speaking of teamwork and project organization. The communication among group members switched from face to face meetup to online communication, such as Wechat and Zoom (Video Streaming and online conferencing). In a certain extent, the quality of communication was lowered due to the unstable internet connection, this limitation was improved by a more frequent text-based communication and the use of project organisation tool, such as Google drive, these tools helped our group members work efficiently and effectively. Moreover, the restriction of Makerspace participation in a group of 4 limited the development phase. It was hard to practice or build the idea immediately, but encouraged our group members to make a good use of the materials we have, which enhanced our creativity and dexterity.