Method of Contextualising

[Statement]

During the design process of the Fruit Salad tactile memory game, our exploration was not only about the optimization of game mechanics, but also a deep reflection on barrier-free design and perceived fairness. Inspired by Wendy Hui Kyong Chun's theory of proxies, I realized that touch is not only a substitute for vision, but also an independent and constructive way of cognition. Our game becomes a proxy for the visual representation of fruit, allowing blind players to "see" invisible things, which prompted me to rethink how information is transferred between different senses and how to break the visual-dominated information transmission mode.

At the same time, Jesse Schell emphasized that game design should be centered on player experience, which pushed us to continuously conduct playtesting to ensure that the tactile differences of the inside & outside of the fruit are intuitive enough, while optimizing the user experience to make it more inclusive and easy to understand. This process made me deeply realize that barrier-free design is not only "providing convenience for the disabled group", but creating a truly fair perceptual experience.

As a designer, I realized that past works and ideas often ignored the needs of the disabled group, and this project made me reflect deeply on this. In the process of designing and experiencing the game, I gradually understood that design is not limited to visual presentation. Senses such as touch, hearing, and smell can also be fully utilized and become an important medium for information transmission. In this project, I mainly used Blender and 3D printing technology. In the future, I hope to further explore how to use these technologies to create more inclusive designs and expand the possibilities of multi-sensory interaction.

[2 Design practices:]

(1) Hong Kong Museum of Art, 2024. Beyond Seeing: A Multisensory Art Project.

In particular, the project's tactile guidebook. It demonstrates an innovative approach to tactile information delivery, transforming traditional visual information (e.g., characters, colors) into a tactile, three-dimensional perceptual system. For example, color information is transformed into touchable textures. Each color area carries a different three-dimensional texture that can be used to distinguish the color by touch. The names of the colors are labeled in Braille so that the visually impaired can understand the color concepts by reading the Braille + touching the texture.

The same approach is used for the transmission of information about the image, where the image surface is covered with regularly arranged bumps that form a tactilely recognizable texture. Braille text appears in the upper left and lower left, which may be a name or description of the image. The edges of the haptic images are outlined using bumpy lines to help blind users recognize the contours of the character images by finger touch.

This helped us in our subsequent iterations, and we referenced the same messaging approach in the design of the fruit graphics in the Fruit Salad project. This helped us to better understand the meaning of accessible design.

(2) Horvat, Z., 2016. Tactile Picture Book for Blind Children.

Zrinka Horvat's Tactile Picture Book for Blind Children is a tactile book for visually impaired children designed to enhance non-visual cognition through a variety of materials and textures. It helps children develop understanding and memory of objects without relying on sight. The book uses different tactile materials such as soft fur to simulate animals or other soft objects to provide a more immersive sensory experience.

In addition to being a book, Horvat's work served as an interactive learning tool that inspired us to experiment with textures early in the project. This exploration inspired us to improve the tactile differentiation of fruit textures, making them more easily recognizable by touch.

We chose fruit as a central theme primarily because it is a familiar part of everyday life, making its shape easier to understand. In addition, for visually impaired players, this game provides a way to explore and recognize different fruit shapes through touch. Through this game, we aim to help players understand the inside and outside of fruits, expanding the way information is conveyed beyond the visual.

[2 Reading List:]

(1): On Patterns and Proxies / Wendy Hui Kyong Chung (2018)

Wendy Hui Kyong Chun's concepts of proxies and indeterminacy in On Patterns and Agency have reshaped our view of representation and perception in the tactile memory game Fruit Salad. Proxies are how we make sense of things we cannot directly perceive through “substitutes”. For example, in the study of climate change, global warming is not experienced directly, but is understood through proxies such as temperature data, glacier images, and weather models.

Proxies can both help us perceive reality and introduce uncertainty because it is a simplification and translation of reality.Our memory game could be seen as a “ proxy ” of fruits visual representation because it is an alternative way of conceiving fruits. It helps blind people to see the invisible. This inspired me because through the concept of Chun we shifted the perspective of how we see this game, not only as a tactile matching game, but also as a game on the topic of It's not just a tactile matching game, it's an experiment on “how we perceive the world”.

(2): Conditional Design Workbook (2013) / by Andrew Blauvelt, Luna Maurer, Edo Paulus, Jonathan Puckey, and Roel Wouters

The Conditional Design Workbook emphasizes that design should be based on predefined rules and conditions rather than fixed outcomes. It advocates for a process-oriented approach, encouraging exploration and experimentation over predetermined results.

Inspired by this philosophy, our project Fruit Salad took a similar approach when designing its rules and structure. For example, the size of the game cards was not fixed from the beginning, but was constantly adjusted based on user testing and feedback. Similarly, the game rules went through multiple iterations, evolving through continuous testing and improvement.

So when designing Fruit Salad, we made sure that both the tactile experience and the game mechanics were shaped by real interactions rather than rigid preconceptions. The process itself became an important part of the final experience. Hopefully, the game can be more inclusive through testing.

[2 texts outside the reading list]

(1) The Senses: Design Beyond Vision / by Ellen Lupton and Andrea Lipps

The book mentioned that Inclusive Design is not just to meet the needs of people with disabilities, but to allow everyone to use and experience it better. This gave us a lot of inspiration, so we added a rule in the design of the game rules that everyone should close their eyes to play the game. Because we hope to experience the perception of blind people only by using tactile matching. Similarly, this method can also be more inclusive and allow a wider range of players to participate in the game.

At the same time, as the book says, "touch is the most primitive and instinctive sense of human beings", emphasizing the use of materials, shapes, textures and other elements to strengthen information transmission. We design different textures for different fruits, and combine them with memory in the hope of enriching the game experience.

Instead of relying on vision, players use 3D printed tactile performance to match the inside and outside of the fruit, thereby strengthening the position of touch as the main identification method. We believe that "Fruit Salad" is not just a memory game, but also an experiment on how sensory levels shape knowledge, allowing players to "see" through touch.

(2)The Art of Game Design: A Book of Lenses / by Jesse Schell (2008)

Jesse Schell's The Art of Game Design deeply influenced the way we improved Fruit Salad. This is a tactile memory game that challenges traditional visual cognition. Schell emphasized that game design should be centered on player experience, prompting us to continuously optimize based on real user testing and feedback rather than relying on subjective assumptions.

Therefore, we deeply thought about the following key points during the design process:

1. Meaningful Game Mechanics - Let tactile matching not only be "finding the right answer", but create a challenging and interesting process to enhance the player's immersion and interactive experience.
2. The importance of playtesting - Through continuous iteration and user testing, adjust the rules of the game, optimize the interaction method, and make the experience smoother and more intuitive.
3. Accessibility - Ensure that the game is suitable for a wider range of players, especially visually impaired players and users with different perception abilities, so that they can participate and enjoy the game fairly.

During the process of formulating the gameplay, our team conducted multiple rounds of experiments and adjustments to improve the playability and barrier-free design of Fruit Salad. For example, we tried to identify the inside & outside of fruits by touch in a short time, but this task was too difficult for players in the early stage.

With continuous user testing, we iteratively optimized elements such as rules, card size, touch duration, etc. to ensure that the game difficulty is moderate while maintaining interactivity and challenge. This process made me deeply realize that excellent game design must be repeatedly tested and adjusted, and evolve in the process of continuously optimizing user experience.

Reference List

2 Reading List References:

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- Blauvelt, A., Maurer, L., Paulus, E., Puckey, J. and Wouters, R., 2013. Conditional Design Workbook. Valiz.

2 Design Practices References:

- Hong Kong Museum of Art, 2024. Beyond Seeing: A Multisensory Art Project. [online] Available at: https://hk.art.museum/en/web/ma/exhibitions-and-events/beyond-seeing-a-multisensory-art-project.html [Accessed 10 Feb. 2024].
- Horvat, Z., 2016. Tactile Picture Book for Blind Children. [online] Behance. Available at: https://www.behance.net/gallery/30101433/Tactile-Picture-Book-for-Blind-Children [Accessed 10 Feb. 2024].

2 Texts Outside the Reading List:

- Lupton, E. and Lipps, A., 2018. The Senses: Design Beyond Vision. [online] Cooper Hewitt, Smithsonian Design Museum. Available at: https://www.cooperhewitt.org/publications/the-senses-design-beyond-vision/ [Accessed 10 Feb. 2024].
- Schell, J., 2008. The Art of Game Design: A Book of Lenses. [online] Available at: https://www.inventoridigiochi.it/wp-content/uploads/2020/07/art-of-game-design.pdf [Accessed 10 Feb. 2024].