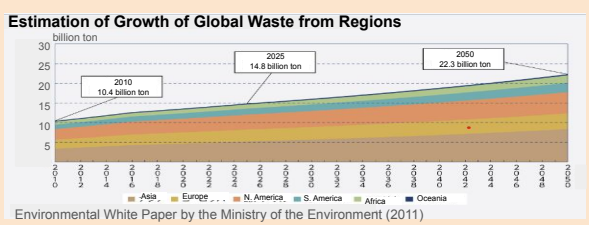


The sắp xếp Game: Raising Awareness for Waste Sorting and Reduction

*sắp xếp : "sorting" in Vietnamese language

052 Shizuoka Prefectural Mishimakita Senior High School

Waste as Global Issue



Dirty on the street in Vietnam?

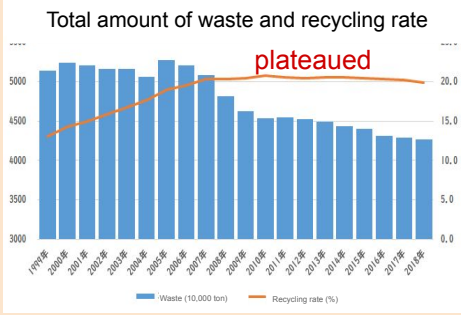


Our findings

- Jobs to separate waste
- More bins than expected



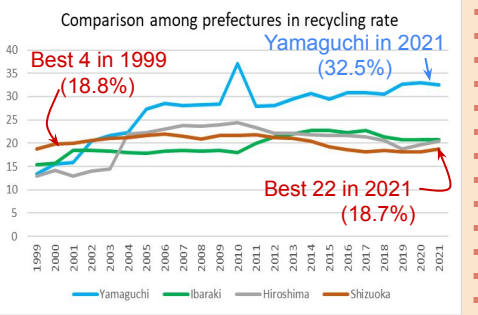
Recycling in Japan



The strengthened legal framework since 2000: the Food Recycling Law (2000) the Small Home Appliance Recycling Law (2013), etc.

However, the recycling rate has plateaued.

Recycling in Shizuoka



Though Shizuoka Prefecture used to be ranked at the best 4, its recycling rate has not improved very much in the past 20 years and its ranking has dropped.

Successful Gamification as Social Action

- Players collect waste on the streets.
- Special missions are given while playing.
- Players collect waste in teams.
- Points = the type of waste + its amount

Successful Towns in Managing Waste

Ohsaki Town

- Population: 11,899 (as of Nov 1, 2024)
- 27 items
- Recycle rate: 83.1% (2020)

Kamikatsu Town

- Population: 1,352 (as of Nov.1, 2024)
- 43 items (since Aug 28, 2024)
- Recycle rate: 81% (2023)

Research Question What game is effective in promoting waste separation? sắp xếp!

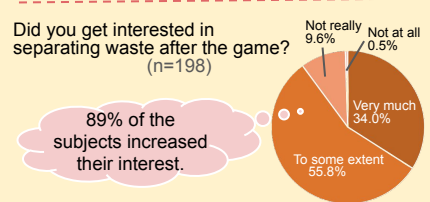
1 sắp xếp Mania

- Players guess separating categories of waste in different cities.
- Points are given to correct guess.



Fun! But the rules are not easy : (

Is this ...
Burnable?
Plastic?
Metal?
Large-size refuse?



2 sắp xếp Card Game

Picture Card (Original) | Picture Card (After recycle) | Information Card

[Learning Mode] Karuta

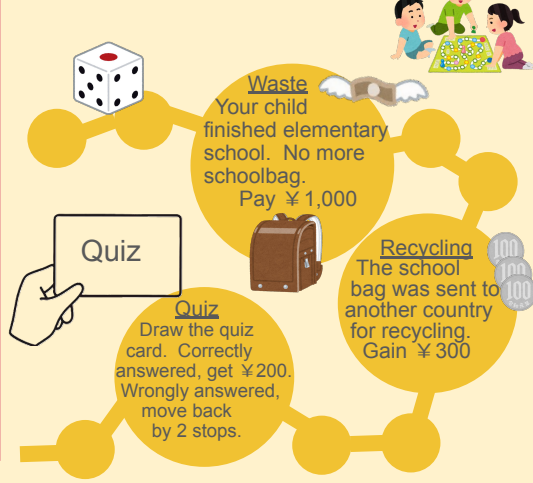
- Picture cards are put **facing up**.
- The game leader reads out the info card.
- Players try to pick up the pair cards.
- Getting one picture card = 1 point
- Getting the pair cards both = 3 points

[Trial Mode] Memory / Shinkaisujaku

- Picture cards are put **facing down**.
- Players take turns and try to match the pair cards.
- Information cards are used for checking.
- If correctly guessed, the player can get the pair cards.
- If failed, the cards should be returned facing down.

3 sắp xếp Game of Life

- Players move their pieces by rolling a dice.
- The track has stops regarding possible waste at different life stages.
- Quiz stop: Players are required to answer quizzes.
- Waste stop: Players pay disposing money.
- Recycling stop: Players get money.



Consideration Through our research, we realized that addressing societal issues like waste management, which are strongly influenced by individual awareness and habits, has both strengths and weaknesses when approached through gamification. The strength of gamification lies in engaging players through hands-on interaction, visual elements, and thought-provoking gameplay, making the experience memorable and sparking curiosity or deeper reflection. However, the weakness is the risk of players merely enjoying the game without translating that experience into actionable behavior, such as sorting waste properly, which is our ultimate goal. To bridge this gap, it is crucial to create opportunities for players to discuss their experiences and insights from the game with one another. Additionally, for sustainable implementation, it is vital to keep the game rules simple. This principle became clear through the creation of three different games.

Reflection As we investigated deeper into the issue of waste, we were struck by how dangerous it is and how it threatens our future lives. If we don't change the "awareness" and "assumptions" people have about waste and translate that into "action," nothing will improve. Things should be done **before** we generate "wasteful" waste. We hope that the games we designed can serve as a catalyst to change the awareness and actions of as many people as possible. We intend to continue our research to achieve this goal.

Reference Environmental White Paper Cap.2 Building a Global Circular Economy through the Venous Industry <https://www.env.go.jp/policy/hakusyo/h23/html/hj11010402.html> (viewed on Nov. 23, 2024), Ohsaki town SDGs Promotion Committee <https://www.osakini.org/> (viewed on Nov. 23, 2024), Jichitai Works WEB: "A Sustainable Future Chosen by the Residents of the Town with Japan's Highest Recycling Rate" <https://jichitai.works/action/details/798> (viewed on Nov. 23, 2024), the Ministry of Environment Ecojin : "Have fun, stay clean, and be healthy. Would you like to join Sport GOMI?" <https://www.env.go.jp/guide/info/ecojin/action/20240619.html> (viewed on Nov. 23, 2024), Social Sports Initiative <https://www.spogomi.or.jp/> (viewed Nov. 23, 2024), GAB Seisochu <https://www.seisochu.com/> (viewed on Nov. 23, 2024), Shiraberun "Waste Issues in Japan" <https://shiraberun.com/gomimondai.html> (viewed on Nov. 23, 2024)