Fount

Towards the source

BA6 Collaborative Project
Impact Games: Corona Pandemics
Cologne Game Lab, TH Köln,
Cologne, Germany

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Overview

Theme / Setting / Genre

The player will play as a nanobot in a stream to support the environment to revive and flourish. It will represent fighting against coronavirus metaphorically by supporting our immune system.

As this game focuses on relaxation purposes, it will be a casual game. The mechanics are simple and easy to play.

Targeted platforms

To have more impact in quarantine time, this game will be built for the most available devices at home i.e. - smartphones, tablets etc. So the targeted platform is android for now. In future, it may also have an iOS built.

Impact approach

According to the given topic “The Corona Situation”, the project focuses on mental health during this pandemic. The game focuses on generating flow state to make people relax. Additionally, it shows that casual gaming can help people to relax in anxiety from different studies. To get an impact this game is focusing on combining both approaches that a casual game that generates flow state to help people relax during this Corona Pandemic while staying at home.

Summary

In summary, the gamer will play as a nanobot in a fluid stream to support the environment and induce positive emotions. The player can explore and interact with the elements in the stream and support them to finish tasks. Adaptive sound and visualization will help to induce positivity, while generating the flow state through gameplay.

Impact Approach

Creating an impact game should be focused on an intended impact. It is also important to ask ourselves “what is the problem? And how to solve it?” So upon deciding on developing a game to reduce anxiety, it is obvious the question comes first about the problems.

What is the problem?

The problem has to be defined in the very beginning of the conceptualization phase. As our goal is to create an impact in anxiety it’s important to look at the source of it.In a pandemic situation what could make people anxious:

1. Overwhelmed by thoughts
2. Lack of information on relaxation technique
3. Future thought about safety and security in social, financial or physical states.
4. Uncertainty about the situation
5. Increasing stress and anxiety
6. Aggressive behavior

How to solve it through games?

After the problem is defined properly, similar academic research has been studied and also looked upon the similar games. To sort out the study and research material a Google Sheet has been created to keep track of the studies and their methods. (click here to check)

Primarily, a study has been found that playing Casual Video Games(CVGs) can help to reduce stress and improve mood [1]. Another similar study has also mentioned that prescribing CVGs to patients with anxiety disorder or depression poses a potential as an alternative for depression or anxiety based medicine[2]. However, it should be more researched how to develop the game or how to prescribe them. It should also be in mind that the ethical choice or risk of alternating medication with CVGs as in a CVG or Video Game player is always affected by its’ player agent and how they perceive. So one of the suspecting answers, to the question about how to develop this feature in games, can be discovered in another study about Flow and Games by Davin Palvas. As it states that[3], Flow state[5] has numerous positive effects on learning outcomes. Additionally, another study from University of California supports the same concept that flow states can reduce anxiety and stress, especially uncertain waiting periods[4]. It is no wonder that this study also used CVG as their tools to measure flow state and its impact on anxiety and stress.

In summary, to create impact on anxiety and stress, it has been decided to create a simple and casual video game to generate flow. In the figure below it has been shown how we have proceeded to our ideation phase to Design phase.

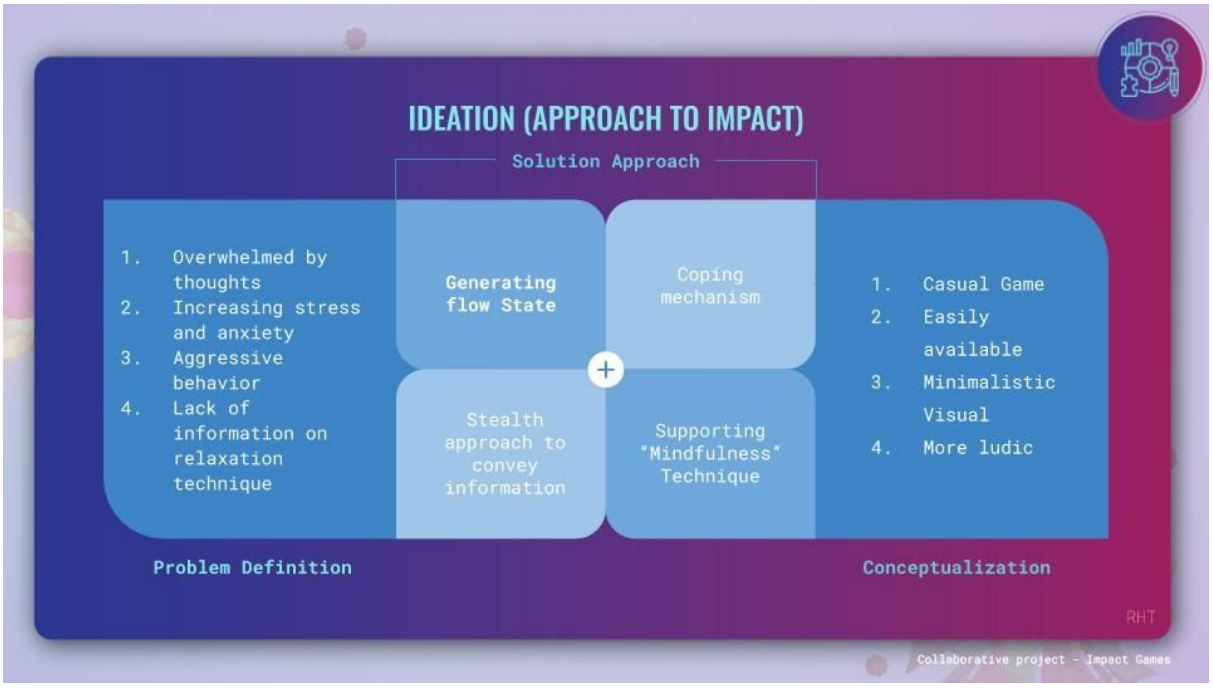

Fig 1: Ideation phase - approach to creating an impact

Designing for Impact

So having a concept and its theoretical proof of concept from different studies, it's important to understand "Flow state"[5], which is a term defined by Mihaly Csikszentmihalyi. However, one of the important work on flow state and video games has been done by Jenova Chen, the creator and co-founder of thatgamecompany, and developer of games like Flow, Flower, Journey, Sky: children of light etc. According to his thesis, flow state has eight major components:

1. Clear Goal
2. The sense of control
3. The merging of action and awareness
4. A challenge activity that requires skills
5. Direct feedback
6. Concentration on the task at hand
7. The loss of self-consciousness
8. The transformation of time

As a designer it may not be possible to generate all the components because some of them are instantly generated by the player while playing the game. However, there are four components that can be used for designing the game, which are:

1. **Clear Goal:** A narrative is associated to give a global goal for the player - clean all the scroungers. Then local goals are defined by task signals and guide the player to the direction of tasks in each region or level.
2. **Sense of Control:** To create a better sense of control, game mechanics are kept simple and precise. And they don't require complex control or pushing multiple buttons or gestures at the same moment.

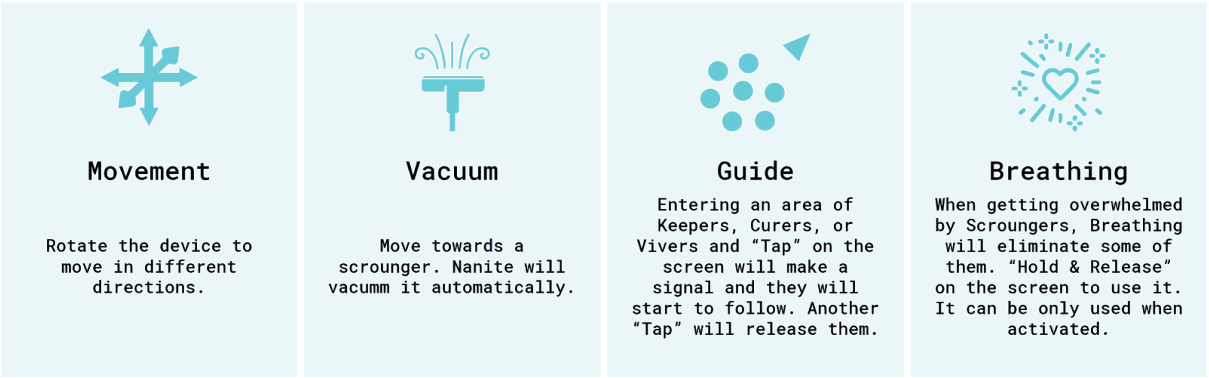

Fig 2: Game Mechanics

On top of that, technological choice was made so that it doesn't require any additional device or expensive device to play it. Accelerometer is chosen for movement as it is available in most of the android phones.

3. **Challenge vs Skills:** It's the most challenging part as it is not possible to get information about the challenges that the player may face during gameplay. Although, it is possible to create a system which supports both player-based and automated Dynamic Difficulty Adjustment(DDA) systems. The idea behind our DDA is to increase difficulty over the time using the parameter "time required to kill for each" and increasing the difficulty by increasing multiplication delay by based on the player performance. Rather making the difficulty based on level, it is based on time spent in game. Additionally, another mechanic, called "breathing", is added to imply player-based DDA. Whereas, it gives freedom to the player to decrease difficulty when they will feel overwhelmed, thus doesn't trigger the anxiety by the game itself. A DDA Document has been prepared to design the system which can be checked here.
4. **Direct feedback:** To give proper and direct feedback - animations, visual effects, sound effects, color code etc. are added. The game aesthetic is designed in such a way so that it can provide maximum feedback and doesn't mix with each other.

Considering these aspects, it can be assumed that the game may be able to generate flow state to a certain point.Further investigation and design practices can be done with more development time and playtest.

Story, Narrative & Gameplay

In “**Fount: Towards the Source**”, the gamer will play as a nanobot in a fluid stream to support the environment and induce positive emotions. The player can explore and interact with the elements in the stream and support them to finish tasks. Adaptive sound and visualization will help to induce positivity, while generating the flow state through gameplay to reduce anxiety and improve their mood.

Fig 3: Nanite after reviving a Structure.

Story

In a world of continuous streams, a wanderer “Nanite”is looking for the source. However, it finds out that the stream is blocked and corrupted by parasites/scroungers. Nanite cleans them and tries to bring back the balance. It revives the Structures and removes the blockage to go forward towards the Source.

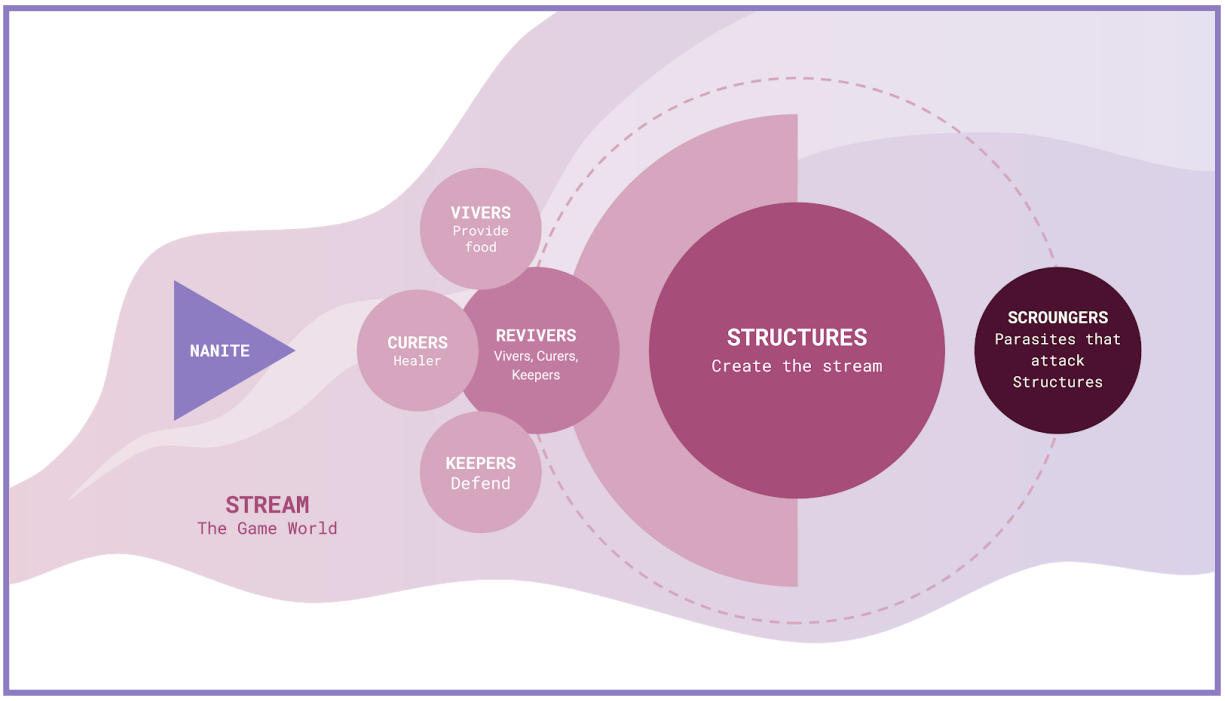

Fig 4: Narrative and Game World at a glance.

Characters

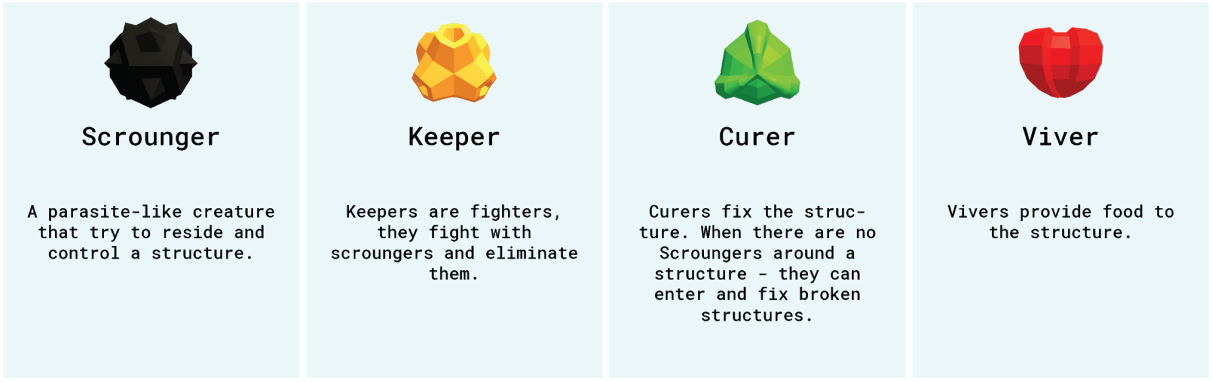

Fig 5: Game Characters that the player can Interact with.

How to Play

1. Tilt your device to move the character. (In windows build, use arrow keys or “a,w,s,d” keys)

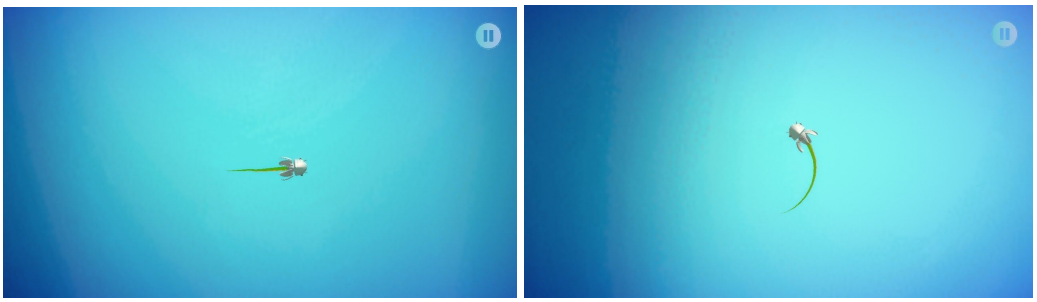

Fig 6: Movement of Nanite.

2. Vacuum the Scroungers. A “snake” like mechanic that allows the player to vacuum the Scroungers. When a player touches a scrounger from the front it will be eliminated and vacuum.

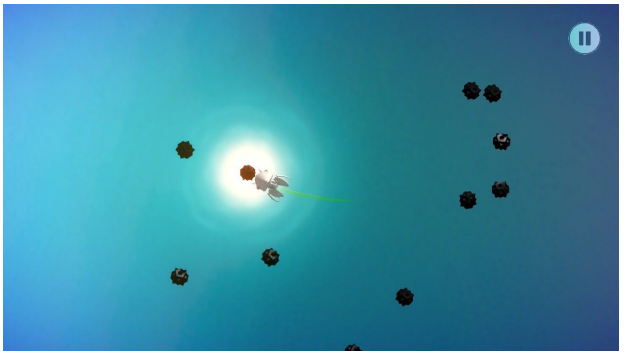

Fig 7: Vacuuming the Scroungers.

3. If there are too many Scroungers - find the Keepers(Orange). Bring them to the structure using “Guidance” mechanics. When “Tap”-ing into the screen will create a signal which has a range. (In windows build, use left click) Any Keepers, Curers or Vivers can hear it and follow the player after that. Taping the screen second time they will be released in front of the player, or enter the Structure region. If there are Scroungers then Vivers and Curer will not enter the Structure region.

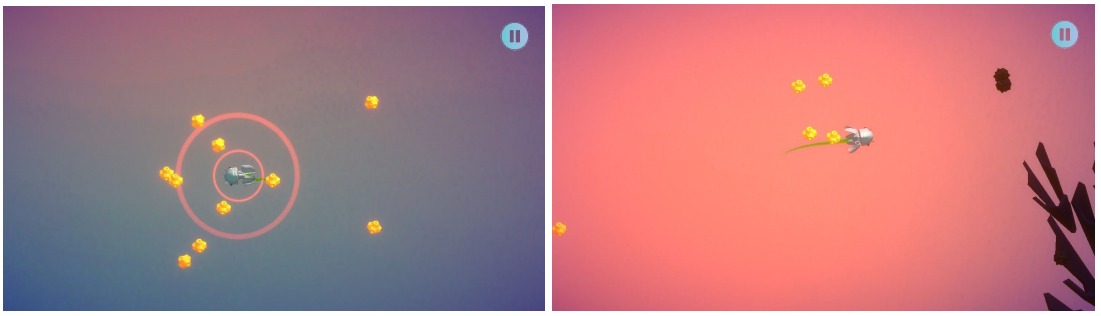

Fig 8: Signaling the Revivers will make them follow the player.

4. Keep two or three keepers after cleaning up a structure. Otherwise, it may get attacked again.

5. If there are no scroungers, then bring the Curers (Green) first to fix the broken structure.

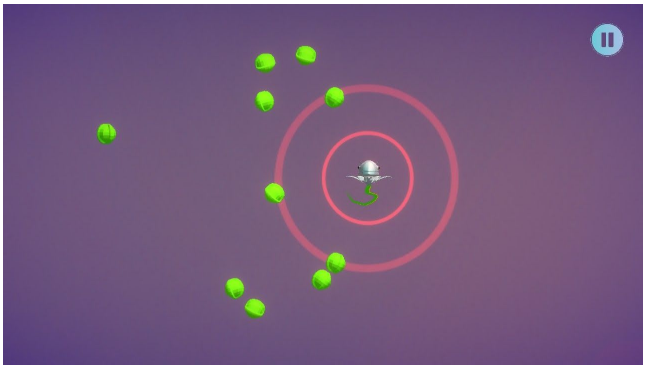

Fig 9: Guide Curers to fix the Structures.

6. Bring the vivers to make it colorful and fully functional.

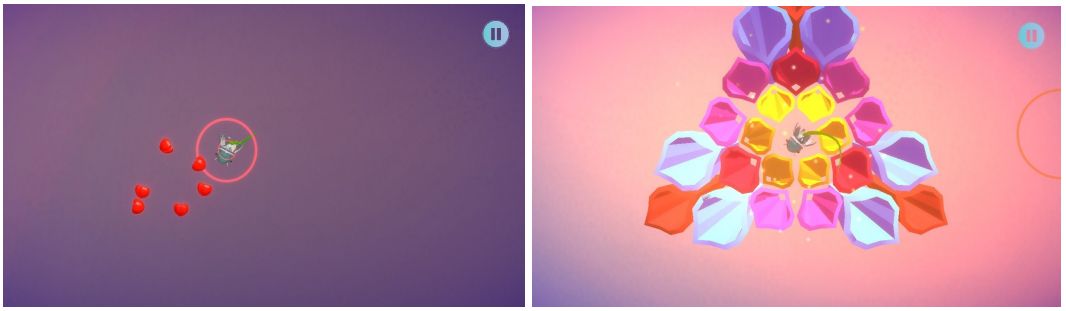

Fig 10: Guide Vivers to flourish the Structure.

7. If there are not enough Keepers in the level, and the number of Scroungers is high(they get doubled in a given time) - the players “breath” mechanics will be activated. By “hold and release” the screen the player will release (for windows, left click and hold) sparkles(medicine or magical particles) which will eliminate a number of Scroungers based on the player's skill. It also represents the real “breathing” in real life when someone is attacked by overwhelming thought and increases their anxiety.

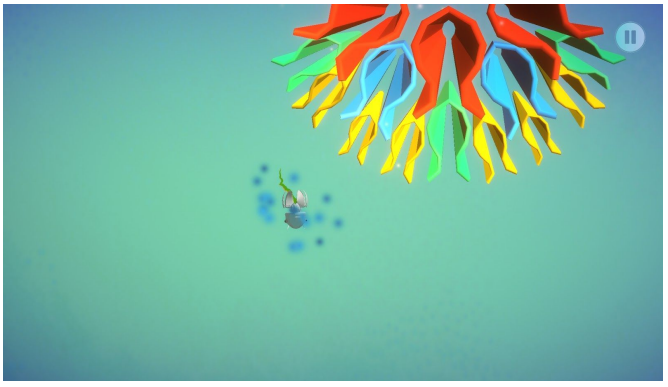

Fig 11: Breathing mechanic.

8. Task and location based signals will help you towards the next task or location. They are also color assigned so that it’s easy to understand what is in that location.

Fig 12: Location based signal.

Settings

1. **Calibration**: This option is used to calibrate the position of the device. As this game uses an accelerometer for calculating the tilt, calibrating will let you play it with different angles or position when you are sitting.
2. **Speed:** The speed of the character can be changed. This option is only available in this first prototype. Your valuable feedback will be appreciated about which speed makes you feel calm.
3. **Responsiveness:** It increases or decreases the responsiveness of the accelerometer. Increasing responsiveness will require less tilting to move the character and reach to its max speed and vice versa.
4. **Help:** There you can find information about how to play.
5. **Exit:** take you back to the main menu.

Evaluation Protocol

To measure the impact, we have adapted the method that has been used in the study for "prescribed CVG in reducing symptoms of anxiety" by Fish, Russoniello & O'Brien (2014)[7]. The questionnaire and methods are primarily chosen for our evaluation protocol. However, more details are under progress such as detailed questionnaires, ethical point of view, complete requirement etc (check the document here). In the following here's a short summary of our evaluation protocol.

Participant

Number of participants: 50

Test groups: 2 (each have 25 members). The group will be assigned randomly among the selected participants.

Method: Online forms (Google Form, Type form or any other software compliant with GDPR)

Recruitment requirements:

1. Complete a recruitment form/questionnaire which will include GAD-7 self-test anxiety questionnaire.
2. GAD-7 score is min 9 and above.
3. Provide a consent form to comply with GDPR regulations

Announcement: through newsletter, emails or notice boards.

Platform: a website or platform may be needed for recruitment and evaluation process.

Process

1. Provide the games to two groups: Alto's adventure(Group 1), Fount(Group 2)
2. The player will be prescribed to play the game at least 3 sessions in a week.
3. Each session will be 20-30 minutes long.
4. Length: the length of the evaluation will be one month
5. A weekly report will be available online in the form of questionnaire which will include HADS (Hospital Anxiety and Depression Scale) or STAI (State and Trait Anxiety Inventory) based on the effect or resources available.

Analysis

Tools: g*power

Analysis: The collected data will be compared between two games - Alto's adventure vs Fount. Which may include different categories:

1. Overall impacts in two games
2. Weekly impacts in two games
3. Impact on anxiety and depression (weekly and overall)
4. Comparing the result to find out which is more effective and for which state

Contacts

This game is made as a collaborative project for the 6th Semester Bachelor project in Cologne Game Lab, Cologne University of Applied Sciences, Cologne, Germany. Here is the team behind this project:

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This game is made as a 6th Semester Bachelor project on "Impact Games" in Cologne Game Lab, TH Köln,Cologne

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