

# Positive Play:

## Designing Ludic Tools for Health

Book Idea Camp 2024 | Tromsø

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Typography: IBM Plex Sans | IBM Plex Serif

ISSN: 2387-4597

Septentrio Reports, nr 1 2024

DOI: [10.7557/7.7582](https://doi.org/10.7557/7.7582)



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**Uit** The Arctic  
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# What is this?

This book results from an initiative by the European university consortium EUGLOH - European University Alliance for Global Health - between the University of Porto, Portugal (U.P.), and the University of the Arctic, Norway (UiT).

To support the activity consisting of a three-day masterclass and workshop at UiT, designated as “Tromsø Idea Camp 2024 - Developing ideas through co-creation using human-centred design,” which had as its motto:

*. “Identify the needs and expectations of Vardesenteret’s patients*

*before, during, and after treatment, considering their and volunteers’ points of view and creating projectual answers that foster empathy and communication”*, a handbook was created, which later formed the basis of this book.

It has three sections dedicated to Person-Centred Design in the Context of Health and Well-being.

**The first section— “Reported Experience”** — Relates to the doctoral project “*Ludic Activities in Health Context: An Anorexia Nervosa Case in the hospital environment,*” which systematizes Ludic methods and tools created in and

for a clinical context to support the treatment and monitoring of Anorexia Nervosa.

Part of the project stems from collaborative work with São João Central Hospital, Portugal, within a group specially dedicated to treating eating disorders.

**The second section - “Documented Experience”** —

Explores the concept of Positive Play, coined by Giesteira, B., Cardoso, P., and Peçaiibes, V. in various papers and book chapters from 2021 onwards.

It presents a group of methods and tools created by the authors in recent years, such as

the SEED Toolkit - “SomaEsthetics for Enabling Designers” (Giesteira, B. 2023) and the ANgame Collab (Cardoso, P., Peçaiibes, V., Giesteira, B. 2022).

The first tool aims to work on the concept of Somaesthetics, promoting empathy and contributing to the identification of feelings and sensations interdependent on body activities and movements.

The second tool aims to mediate playful sessions of Participatory Design, especially in the ‘user-research’ phase.

Other tools and methods were selected because, based on

the aforementioned authors’ experience, they are most suitable for applied research in Health Technology Design.

### **The third section - “Lived Experience”**

— Records the three days of the workshop dedicated to the themes: “Emotional Design and Somaesthetics”; “Human-Centered and Participatory Design”; “Ideation, Lateral Thinking, and Prototype.”

In addition to the aforementioned themes, the different phases of development of the projects of the participants from the various universities of

the EUGLOH university consortium are recorded, which, in a Participatory Design approach, involved the collaboration of volunteers and oncology patients from Vardesenteret.

This section shares the tools used to support each phase of product or service design, as well as the final results of the low-fidelity prototypes.



# Reported Experience





## **Ludic activities in Health context:**

### *An Anorexia Nervosa case in the hospital environment*

Anorexia nervosa is a mental disorder characterised by an excessive fear of gaining weight based on a distorted perception of body shape and self-evaluation based on weight and physical form. This disease begins in childhood and adolescence, with a peak in severity in adolescents aged between 15 and 18.

The target population is young people, who are considered digital natives. Games and technology are recognised and attractive tools for this audience serving as ways of accessing information and learning.

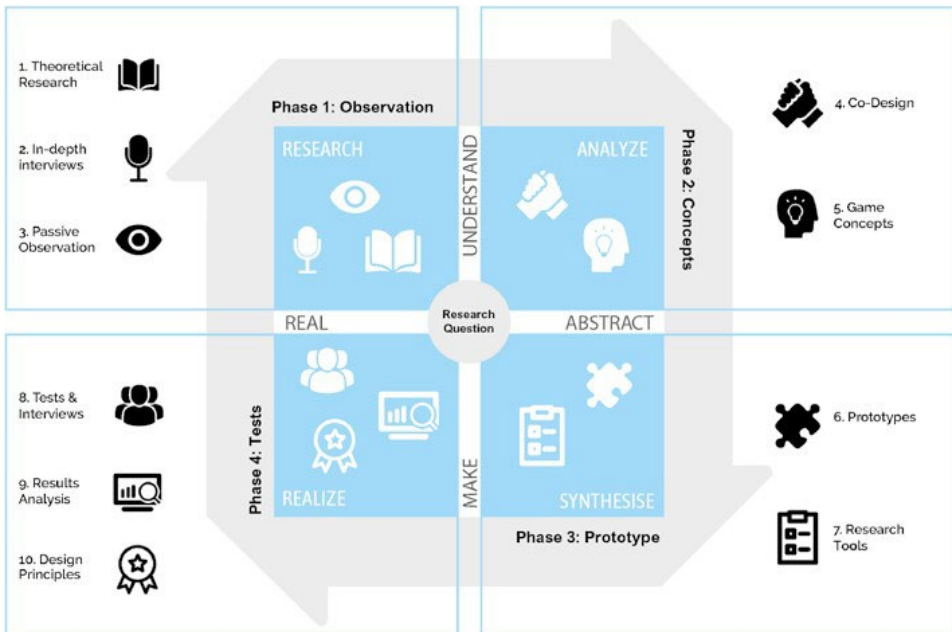
This was the context of Viviane Peçaibes PhD thesis in Design at the University of Porto (Supervisor: Prof. Pedro Cardoso) which aimed to answer the following research questions:

*How can games act as tools to promote insight into anorexia nervosa, emotional management and communication between patients, family members and health professionals?*

*And what principles should we take into account so that these games are properly designed?*

# Our Design Research Method

Our methodology is based on the Design Driven Innovation Framework (see below). In our adaptation, we placed the research questions at the centre and kept the same structure of axes as the original framework. The research began in Phase 1 and continued through to Phase 4. Each phase unfolds items 1 to 10, as can be seen in the following pages.



*Our four-phase methodology guided the entire research.*

## Design Driven Innovation Framework

Vijay Kumar's framework (2013) which presents a flexible iterative method for generating new knowledge and innovation.

This framework is organised as a map of axes, the vertical axis REAL x ABSTRACT and the horizontal axis UNDERSTAND x MAKE. These axes form quadrants: RESEARCH, ANALYSIS, SYNTHESIS and REALISATION. Each quadrant has stages numbered from 1 to 7.



*Design Driven Innovation Framework  
Vijay Kumar (2013)*

# Immersion in the methods

**Phase 1**  
**Observation:**  
*research to better understand the real*

**Before** acceptance by the Hospital's Ethics Committee

**Speculative Approach**

*In-Depth Interviews with Recovered Patients  
Speculative Design: Proto-Games*

**After** acceptance by the Hospital's Ethics Committee  
**Exploratory Approach**

*In-Depth Interviews with Medical Team  
Shadowing - Consultation with Patients and relatives  
Passive Observation - Medical Teams Meetings*

**Goals**

- Direct contact with the phenomenon.
- Understand people and their contexts.
- Identify needs, challenges and opportunities for games development.

**Phase 2**  
**Concepts:**  
*understanding real to propose alternatives*

**Full collaboration** to generate alternatives  
**Co-Design Approach**

**Co-Creation** for exploration and development  
**Game Concepts**

**Goals**

- Organising and analysing the information gathered.
- Co-creation and exploration of game concepts.

**Phase 3**  
**Prototype:**  
*making tangible alternatives*

**Development** to bring ideas "to life"  
**Games Prototypes**

*8 Test Prototypes  
3 Domains of Activity*

**Creation** of information-gathering instruments  
**Research Tools**

*Diary Studies  
Observation Grid  
Unstructured Interview Script  
PANAS (Positive and Negative Affect Scale)*

**Goals**

- Game prototypes production.
- Preparation for testing sessions.
- Creating and organising information-gathering tools.

**Phase 4 Tests:**  
*transforming reality into something different*

**Contact** with our target groups

**Playtest Sessions**

*Basic Schools - PT/BR  
São João Hospital and Elysio de Moura Residence*

**Compilation** of information  
**Results Analysis**

*Content Analysis*

**Creating** a new knowledge  
**Design Principles**

*SG4AN Game Tool*

**Goals**

- Playtests with the target audiences.
- Analysing the results.
- Creation of Design Principles for Serious Games for Anorexia Nervosa.

On the following pages, we will use the **5Ws1H method** (Who, What, When, Where, Why and How) to explain each technique applied in our Research Method. 5Ws1 is a simple technique that allows you to understand a situation, to discern a problem by analysing all aspects. You can apply the 5Ws1H method on many occasions during the design process when you need to question a problem more deeply or simply when you need to organise your thinking.

# Phase 1 | Speculative Approach

## *Before acceptance Ethics Committee*

Design research projects in the health sector require acceptance from the Ethics Committee. Without this thorough assessment of your project, you won't be able to move forward with your research in healthcare environments or have access to medical teams, patients, and others.

Normally, this evaluation process involves a certain amount of bureaucracy and a lot of paperwork, which takes time and organisation. That's why it should be the first thing you prepare before starting your research.

In our case, we organised everything beforehand and took advantage of the time waiting for the results of the assessment to gather information from people outside the health environment.

## **In-Depth Interviews** | Recovered Patients

### WHAT

A direct conversation with the target audience. This conversation can be structured (or not) using a previously prepared script. The interview is a flexible technique with strong information-gathering potential, as it allows questions to be reformulated in order to delve deeper into a particular aspect of the conversation, as well as allowing the interviewee's attitudes to be observed.

### WHY

These patients have been through the whole course of the disease, unlike the patients who are still being treated in hospital. Having an insight into the entire recovery process from anorexia nervosa helped us understand the context and identify opportunities for creating the games.

### WHEN

Before Hospital field work.

### WHERE

The interviews took place in public places, chosen by the interviewees themselves. The average duration of each interview was one hour. The interviews were audio-recorded for later transcription and analysis. Each interview was divided into three parts:

- Presentation of the researcher, objectives of the thesis and the interview. Request for permission to record (10 minutes);
- Conversation - questions and answers from the interview script (40 min);
- Closing and acknowledgement (10 min).

## HOW

Interview script is essential to guarantee a uniform collection of information that covers the main points of your research objective. When creating the script, in addition to addressing your research objectives, try to ask the interviewee about their motivations, goals, habits, fears, restrictions, desires and other biases that may influence their well-being in their daily life or in a particular health case that the interviewee has experience with.

In our case, we created an interview script that aimed to:

- Collect behavioural aspects from those who have experienced the disease;
- Understand the types of challenges or difficulties they faced;
- Understand what motivated them to change their behaviour (from sick to healthy);
- Understand the relevance of using ludic instruments within the context of treatment.

To do this, we created a structure that contains five thematic blocks that are divided into questions and objectives.

The thematic blocks help the interviewer lead the conversation, with a warm-up, with broader questions that serve to bring the interviewee closer to the interviewer and mitigate any initial discomfort. Then you move on to more in-depth questions and end with a closing.

Objectives are essential to help the interviewer avoid straying from the basic theme of the interview, as it's very easy to get lost in the "story" the interviewee is telling.

THEMATIC BLOCK	QUESTIONS	GOALS
Warm-Up	Presentation of the interviewer, the interviewee, and the objectives of the interview.	Promote the approximation between the parties, clarify the objectives of the interview and identify the interviewee for later transcription.
Information about the length of time with the disease	What was the age period when you had anorexia nervosa? How long is it in maintenance/healthy?	Situate the interview in time and understand the period that will be discussed.
Perceptions about the disease and its progression	How did the disease process begin? When did you realize that this behaviour was a disease and that you had lost control?	Lead the interviewee to discuss the main behaviours that led him to have the disease. Understand the interviewee's perception of their own type of behaviour.
Insights into recovery	When did the change happen? What made you eat? What challenges and/or difficulties did you have during your recovery? Did you have any kind of support material (something physical) in the treatment?	Lead the interviewee to talk about the behaviours and the turning point. Understand the needs (team, and family, behaviours) within this period. Focus on the types of materials used within the context of recovery.
Final Contributions	What do you think about using something playful to help in the treatment of anorexia nervosa? Suggestions, recommendations, or comments. Thanks.	To understand the relevance of this type of initiative within the context of anorexia nervosa. End of the interview.

*Interview Script: 5 thematic blocks structure*

WHO

Recovered Patients

3 female (PT):

*26 yo / Master Student*

*34 yo / PhD Student*

*40 yo / High School*

### **Some results**

Behaviours:

- *Start of the disease between the ages of 11 and 15;*
- *Rigidity in self-demanding patterns that make it difficult to adhere to clinical strategies;*
- *Quiet, reserved and unspontaneous profile;*
- *High commitment and enthusiasm for creating their own diaries.*

Comments & Suggestions:

- *They didn't have access to any materials during their treatment, and all their consultations were based on conversation;*
- *They see an opportunity in prevention in schools to help people express themselves and to teach them how to ask for help;*
- *They see games as therapeutic means that can be fun, as their memories of this phase are full of suffering.*



## Speculative Game Design | Proto-Games

Based on the results obtained in the interviews, we created the first two speculative game prototypes for anorexia nervosa.

### ANgame Collab



015

Reported  
Experience

#### SERIOUS GOAL

A ludic tool to help the researcher that acts as a formative tool designed to help with the mapping, management, and dialogue flow of a collaborative process (focus group or interviews).



[Watch gameplay](#)

#### GAME CONTEXT

This game supports research and development, acting as a facilitator by providing visual evidence of the interviewees' knowledge of topics and decision-making. The results of this game enable researchers to build insights that can contribute to increasing knowledge and delving deeper into a particular subject.

## ANgame Competitive



### SERIOUS GOAL

A competitive card game focussing on psychoeducation for young people to be played in the classroom. Psychoeducation is a type of intervention that emphasises the education of the individual using communication and health literacy as fundamental principles.



[Watch gameplay](#)

### GAME CONTEXT

Players need to give the correct answer to each Question Card (black) which has a question about aspects of the disease and the correct answer on the back. To do this, they have 1 minute to find the Answer Card (white) on the table. Whoever answers correctly gets the black card. The person with the blackest cards wins.



# Phase 1 | Exploratory Fieldwork Approach

*After acceptance Ethics Committee*

In this moment we began our fieldwork at São João Hospital and Elysio de Moura Residence.

## São João Hospital University Centre

*Porto | Portugal*



Behavioural and Youth Psychiatry Service: Services for the treatment of Eating Disorders such as anorexia or bulimia nervosa.

017

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Reported  
Experience

## Elysio de Moura Therapeutic Residence

*Valongo | Portugal*



It is considered a pioneering and unique project in Portugal because despite being an in-patient unit within a hospital where patients cannot receive visitors, they live and socialise with other patients in a unit that feels more like a family environment than a hospital.

## In-Depth Interviews | Medical Team

### WHAT

We used interviews with health professionals as the main source of information. This strategy was important in bringing us closer to the interviewees at this early stage of the research.

### WHEN

During field work.

### WHY

These will be the users of the games. Through the interview, we aimed to understand the position of the health professional regarding their own activities, but also their point of view on the behaviour of the patients and family members who are treated by the service for anorexia nervosa.

### WHERE

The interviews with health professionals took place at the São João Hospital (Porto and Valongo), in private rooms. The average duration of each interview was 1 hour. The interviews were audio-recorded for later transcription and analysis. Each interview was divided into the same 3 moments that were used in the interviews with the recovered patients.



## HOW

We used the same structure as the interview script created for recovered patients, but with a focus on understanding the behaviours and profiles of the patients and families treated by the service:

- Understand how patients' and families' engagement in treatment works;
- Understand the dynamics of the medical team in the treatment and the challenges or needs;
- Gather suggestions and possibilities for the development of games.

## WHO

Medical Team | 6 professionals (PT):

*1 Individual and Group Psychologist*

*1 Psychologist Family Therapy*

*1 Psychiatrist*

*1 Inpatient Nurse*

*1 Occupational Therapist*

*1 Inpatient Operational Assistant*

## Some results

Patients Behaviour:

- *Resistant to change;*
- *Perfectionists;*
- *Obsessive;*
- *Intelligent;*
- *They feel fear and distrust in the team;*
- *Are manipulative;*
- *Feel a sense of guilt;*
- *They take a long time to realise their illness (they often say it's a lifestyle).*

Family Behaviour:

- *Very controlling and don't give the patient any freedom;*
- *They feel lost, but think they can be the therapists;*
- *There is no differentiation between family members (all decisions are made together);*
- *Some families infantilize the patient;*
- *Some families are against treatment.*

## Passive Observation | Medical Team Meetings

### WHAT

Systematic process of viewing and recording human behaviour and cultural phenomena without questioning, communicating or interacting with the group being studied.

### WHEN

We attended medical team meetings for a period of 16 months. Due to the COVID-19 pandemic crisis, there was an interruption in fieldwork which had a direct impact on our access to hospital services.

### WHY

Observing people and phenomena can provide a great deal of useful information. The researcher is able to record and analyse what the subjects are actually doing, rather than what they say and they are doing.

### WHERE

- São João Hospital.
- Elysio de Moura Residence.



## WHO

20 health professionals:

*2 psychologists*

*6 psychiatrists*

*2 Occupational Therapists*

*1 Clinical Nutritionist*

*2 Nurses*

*1 Social Worker*

*6 Trainees*

## HOW

We take part in the weekly medical team meetings and observe case discussions and decisions on treatment strategies. In order to register each meeting, we created a protocol containing organised information:

- General identification: date, local, time and type of meet;
- Conditions: summary of the event observed, script used, main topics;
- Recording behaviours and circumstances: appointments about what they said and behaviours.
- Researcher's insights that arose during the observed event.

021

Reported  
Experience

**SUMMARY:** Observation of the weekly team meeting (Valongo). Discussion of cases regarding patients in the service. Multidisciplinary team: psychiatrist in charge, psychologists, nurses, and occupational therapist (9 professionals). Presentation of my thesis project. Visit to the residence.

**SCRIPT:** Unstructured observation. Written notes.

**THEMES:** Anorexia, behaviour change, treatment, behaviour profiles.

**REPORT:** I presented my thesis project to the team and then visited the residence. I received a paper flower from a patient. ☺

The team meeting followed:

- . A.I. - resistant and had to be medicated to make her more flexible. Demanding and very dichotomous.
- . A.C - mentioned that she wants to eat alone.
- . V - controlling profile. Mentions that she doesn't want to treat herself.
- . C - has regained weight and is eating meals with her family at home.

**OBSERVATIONS:** The residence has a very cosy and healthy atmosphere. There were patients playing puzzles and making origami. Some were watching TV. A very positive and rich context for creating games in the context of recovery. In crisis situations, they ask for anxiety medication.

**INSIGHTS:** Cognitively functional and intelligent patients. How can this be used to the treatment's advantage?

Field  
Observation  
Protocol

**DATE:**  
10/04/2019

**LOCAL:**  
Residence

**HOUR:**  
10h to 12h

**TYPE:**  
Weekly  
medical  
team  
meeting

## Shadowing | Consultations with patients and families

### WHAT

A direct conversation with the target Shadowing is an observation technique that consists of following someone in the course of their work to experience the situations of their daily life or work in parallel with that person, gathering information through the detailed nuances of a first-hand exposure in real time.

### WHY

Researchers are in direct contact with the field and the participants in the observed group. Researchers monitor the behaviour and activities of individuals in order to gain an in-depth understanding of them. This technique also creates an opportunity for the researcher to identify characteristics of the phenomenon that often go unnoticed by the individuals who are part of the system.

### WHERE

We observed 12 types of consultations:

- 4 individual psychiatric consultations;
- 1 individual psychotherapy consultation;
- 2 family therapy consultations;
- 2 parent and family support meetings;
- 2 group therapies for inpatients;
- 1 psychiatric inpatient service.

### WHEN

Hospital field work.

### WHO

45 people (PT):

*4 professionals*

*14 patients*

*27 family members*





## Phase 2 | Concepts

### Co-Design

#### WHAT

Co-Design is the evolution of the user-centred approach, as it changes the roles of the researcher and the user. It refers to the creativity of designers and people not educated in design working together in the process of developing the design of a product or artefact.

#### WHY

We created a 5-step co-design process with the aim of organising and ensuring the involvement of co-designers in design decisions throughout the project.

#### WHEN

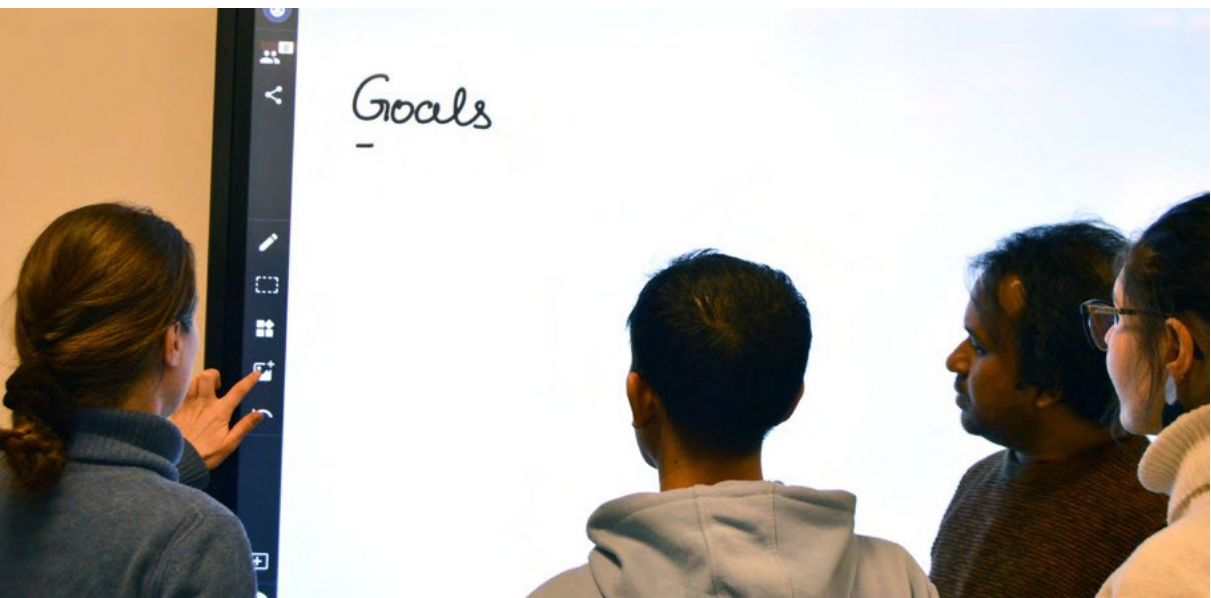
Over 3 years (2019-2021).

#### WHO

We involve 100 people with different backgrounds in the development of the game concepts. We co-create with students, teachers, patients, health professionals and other stakeholders.

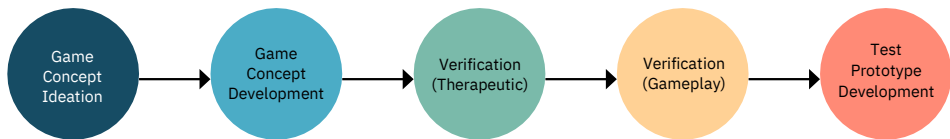
#### WHERE

- São João Hospital.
- Elysio de Moura Residence.
- University of Porto.





## 5 Steps | Co-Design Process



### Game Concept Ideation

Refers to the generation of ideas and sketches of the game concept. The aim of this stage is to generate different ideas that respond to the needs observed in the research context.

### Game Concept Development

Creation of the game's general concept, definition of the main objectives and elements and creation of the content.

### Verification (Therapeutic)

Game concepts, as well as the content created, are reviewed and pre-validated by specialists. The aim of this stage is to verify the relevance, alignment and adequacy of the game concepts with the clinical practice of preventing and treating anorexia nervosa.

### Verification (Gameplay)

Testing the gameplay of the game concept. The aim of this stage is to observe the players' experience with the game. To collect players' perceptions and suggestions on how the game aligns with the premises set out in the concept development stage.

### Test Prototype Development

Reviewing the game according to the therapeutic verification and gameplay verification to create the test prototype. In this stage, the contributions from the verification stages are reviewed in order to make adjustments and refine the game concept to turn it into a test prototype.

## Phase 3 | Prototype

### *Domains of Activity*

We co-created 12 games, categorising them into 3 different domains according to the contexts in which they were performed.

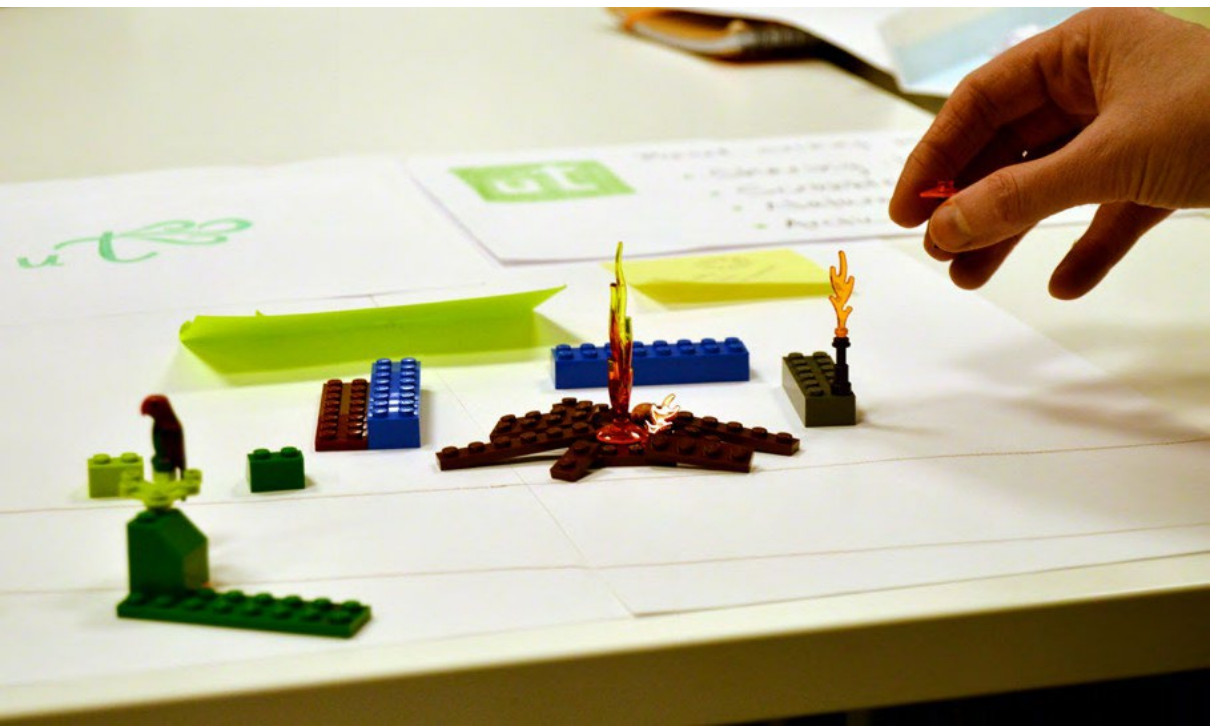
#### **Domain 1**

#### Prevention of Anorexia Nervosa and Promotion of Physical and Mental Health

Games that act in the school context for children and adolescents (6 to 15 years old). This is the context in which the disease begins, and the person does not yet recognise themselves as being ill.

These games provide information on healthy eating and habits, positive communication, emotional management and bringing teachers and students closer together.

These games are intended to raise awareness and sensitise teachers and students about the disease so that they are able to identify cases and know how to help.



# Test Prototypes

## Ballance



027

Reported  
Experienc

### SERIOUS GOAL

To help children aged 5 to 10 recognise healthy foods in order to promote a healthy lifestyle. Use at home (computer, tablet, laptop or mobile with internet) with the help of parents or at school with the support of a teacher.



[Play online](#)

### GAME CONTEXT

The character Ball needs the player to help him reach the end of the park. To do this, the player needs to help Ball eat healthy food and drink water. If Ball eats unhealthy food, he slows down, which makes it difficult for the player to control him to avoid the walls that divide the 3 parts of the park. To regain speed, Ball must eat healthy food and/or drink water.

## Coolméia



*Game elements*

### SERIOUS GOAL

To promote learning, recognition and discussion about healthy behaviours and habits and to bring teachers and students closer together. For teenagers (10 to 13 years old) in the classroom with teacher supervision.



*Game packaging*

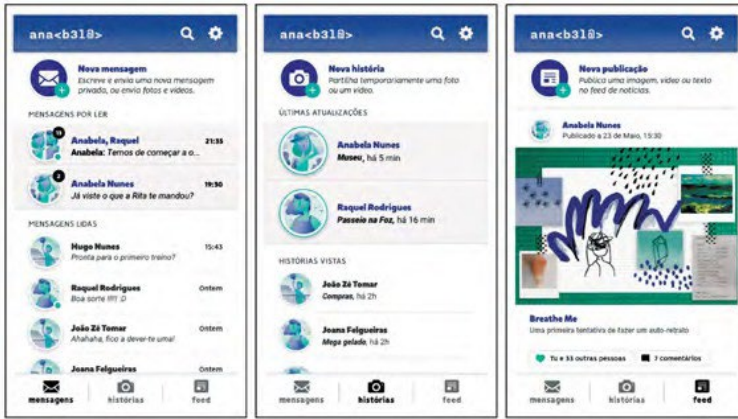
### GAME CONTEXT

In this competitive analogue game, players have to build their own board with hexagonal theme tiles of different colours. The minimum number of players is 3 and the maximum is 6.

*This game was co-created with students Diana Teixeira, Diogo Sousa, Francisca Rebelo, Inês Galiza, and Inês Leal as part of the Communication Design degree programme at the University of Porto.*

## Discontinued Game Concepts

### Ana<b3l@> (Anabela)



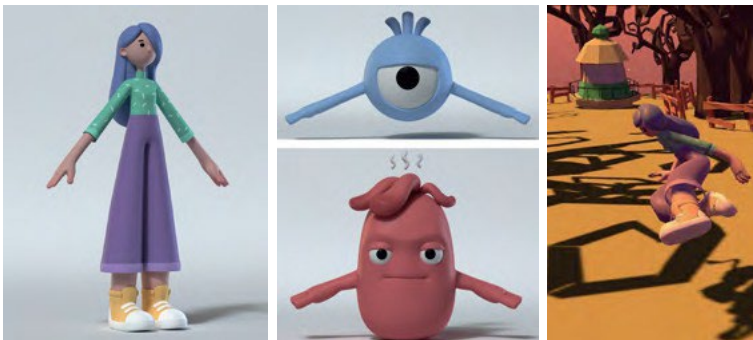
#### SERIOUS GOAL

The aim of this game is to help psychoeducation young people to promote learning about disease prevention. The game aims to foster empathy, positive communication, and the detection of signs of the disease, so that the players know how to help the patient in an affective way.

029

Reported  
Experience

### Monsters Who Dwell in Me



#### SERIOUS GOAL

This video game focuses on empowering and training emotional management skills for teenagers and young people at school or in the first years of university.

*Anabela was co-created with students Livia Lopes and Clara Junqueira from the Specialisation Course in Interaction Design, Web and Games, University of Porto. Monsters who Dwell in me was co-created with 8 students from the Computer Game Development course in the Integrated Master's Degree in Informatics and Computer Engineering, University of Porto.*

## Domain 2

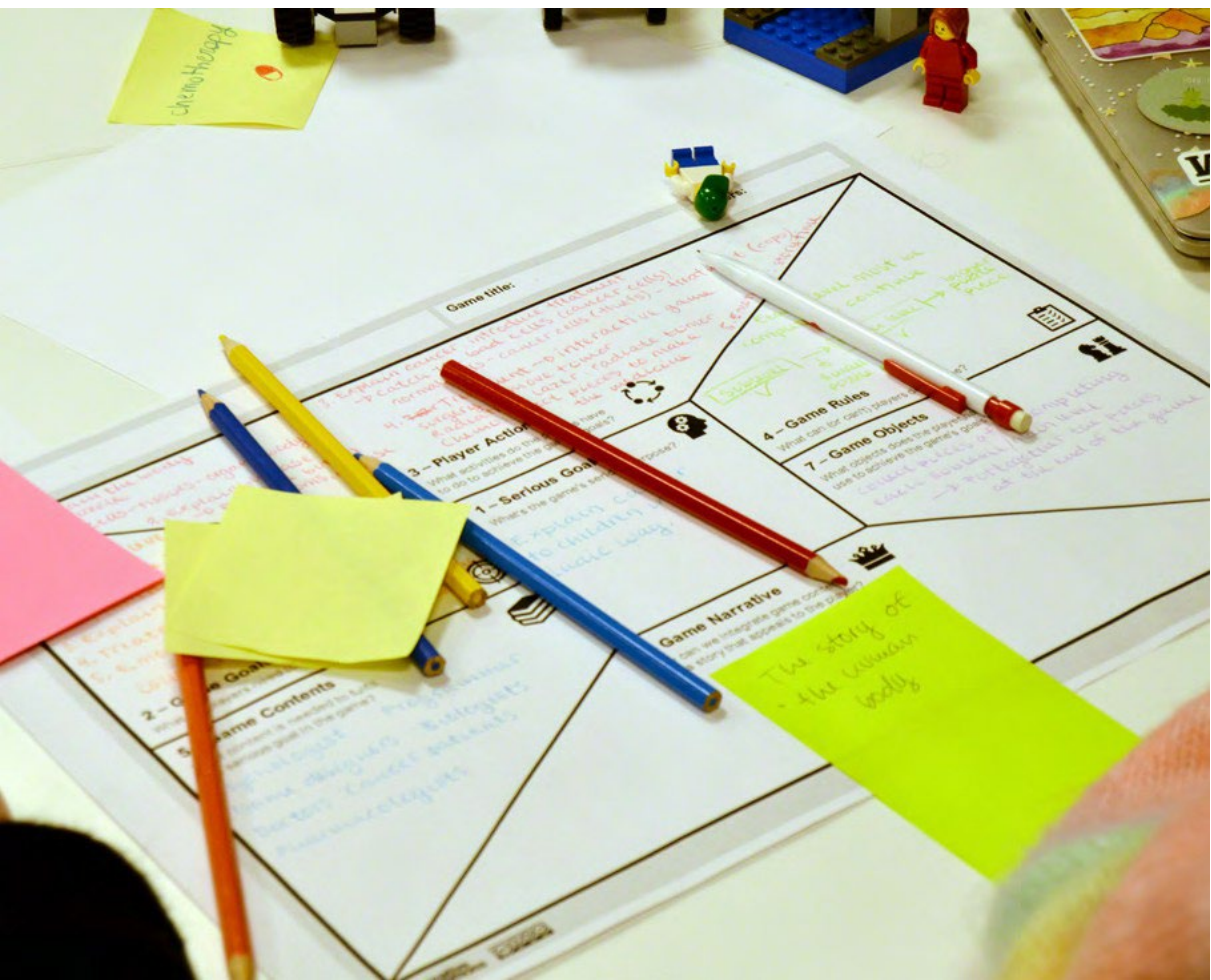
### Support in Gathering Information for Diagnosing Anorexia Nervosa

Games for use in treatment and care environments for people who do not yet have a recognised disease. The target audience is 16 and over.

Most patients are shy and withdrawn, with problems recognising their own emotions and difficulties expressing themselves.

They don't see themselves as ill, are resistant to realising they have the disease and distrust health professionals. The aim is to help medical teams gather information.

These games are tools for promoting self-knowledge and self-knowledge, externalising the patient's emotions and feelings, stimulating communication, and bringing the health professional and patient closer together during the first clinical consultations.



## Test Prototypes

### Crown Rescue



*Game-book and board*

031

Reported  
Experience

### SERIOUS GOAL

This analogue gamebook for use in the context of individual follow-up consultations aims to help the patient externalise their emotions and feelings, to promote the collection of information about emotional states in order to enhance communication and rapprochement between doctor and patient. The target audience is young people and adults (aged 16 and over) in treatment.

### GAME CONTEXT

The story of the book takes place at the bottom of a lake, where the player is summoned to rescue three parts of the Kingfish's crown that have been stolen by the evil Great Spirit. To rescue the parts of the crown, the player has to complete challenges.

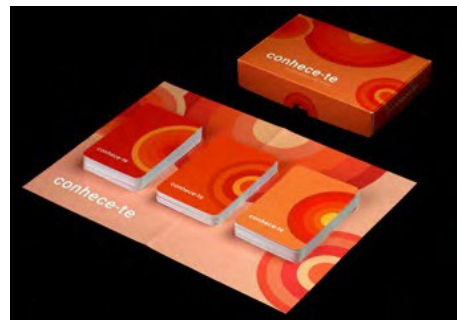
*This game was created by the researcher and illustrated by Isabel Quaresma (Communication Designer).*

## Know Yourself



### SERIOUS GOAL

This game for use in individual follow-up consultations aims to enhance dialogue and encourage the gathering of information in order to promote closer ties between doctor and patient. The target audience is teenagers and young people (aged 16 and over).



*Game packaging*

### GAME CONTEXT

This competitive game has cards with activities that aim to bring a more relaxed atmosphere to the consultation. Given that young people are usually shy, they tend to be resistant to talking about and realising their condition because they don't see themselves as sick.



## Yama's Liberation



### SERIOUS GOAL

This analogue board game has an RPG (role-play game) style. Its purpose is to help medical teams gather information about patients, and to promote patients' self-knowledge and hetero-knowledge in group therapy sessions.



*Game testing with patients from the Elysis de Moura Residence.*

### GAME CONTEXT

Throughout the adventure, which takes place in India (New Delhi), players in groups have to overcome challenges scattered around the game world in order to face the final challenge and free Yama (the Hindu God who was imprisoned by the Hindu God Shiva).

*This game was co-created by the researcher, patients and health professionals at the Elysis de Moura Residence and illustrated by Pablito Aguiar.*

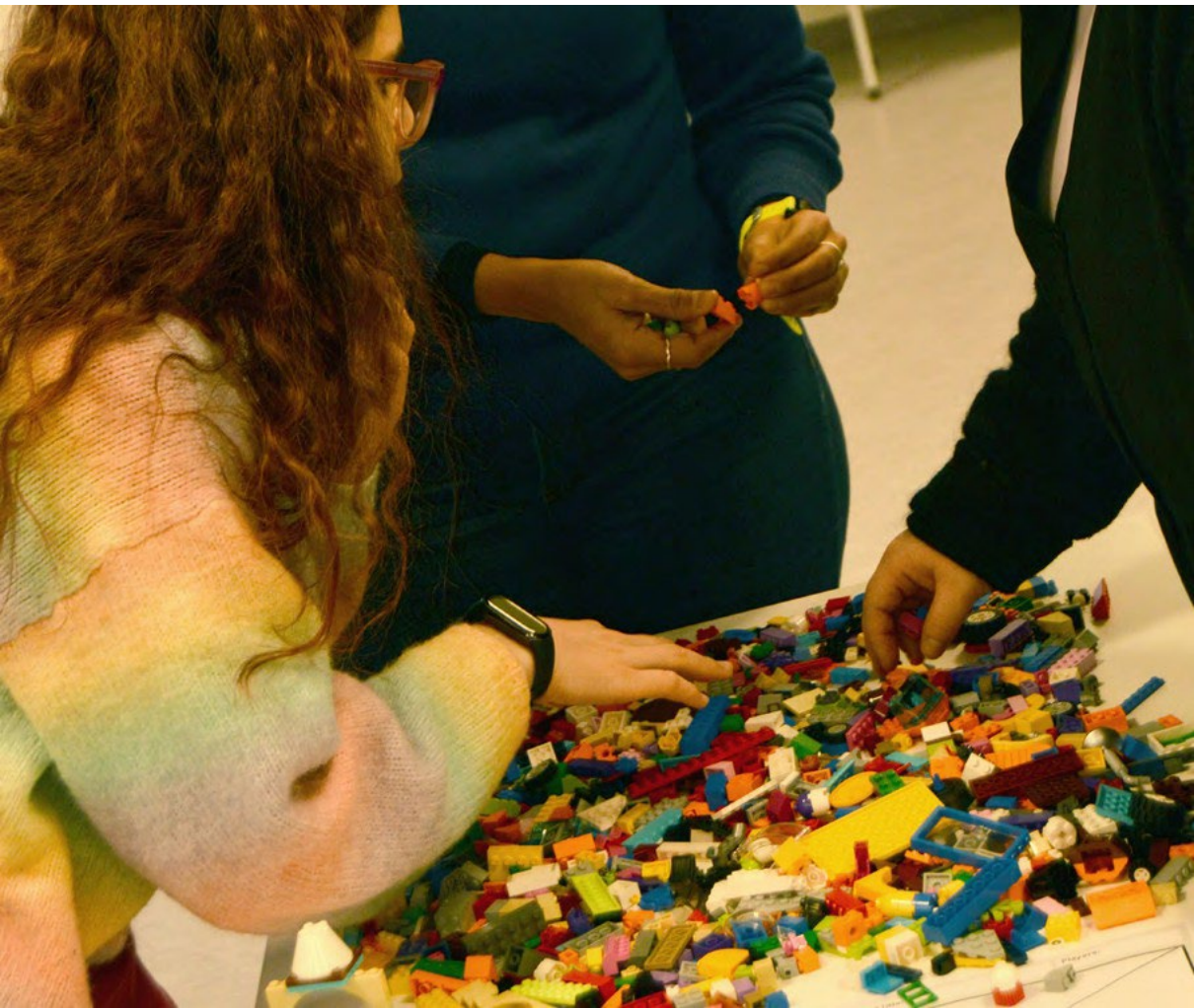
## Domain 3

### Intervention in the treatment of Anorexia Nervosa

Games that work within the context of the treatment of Anorexia Nervosa, where the illness is diagnosed. Patients and family members are already undergoing treatment in family therapy consultations, clinical consultations and/or hospitalisation.

To foster empathy through positive communication between family members during family therapy appointments. Promoting dialogue between doctor and patient on aspects of body image and emotional state during clinical treatment appointments.

Promoting the inpatient's involvement in a calming activity after eating in order to avoid anxious and compensatory behaviours.



## Test Prototypes

### How do I Feel When...



035

Reported  
Experience

### SERIOUS GOAL

This analogue card game aims to promote emotional communication and foster empathy between patients and their families in the context of family therapy consultations for the treatment of anorexia nervosa. The target audience is patients and their families (aged 18 and over).

### GAME CONTEXT

The game favours actions for players to express their feelings (affective communication). By playing, family members have the opportunity to share and express their feelings on a given subject. The game guarantees balanced opportunities in which everyone has to speak and listen, thus avoiding the monopolisation of time and speech, with the consequent aim of reducing stress among the participants.

*This game was co-created with students Livia Lopes and Clara Junqueira as part of the Postgraduate Programme in Interface, Web and Games Design at the University of Porto and the illustrations were created by Luisa Diebold.*

## Mind Full of Colour



### SERIOUS GOAL

Promoting the involvement of inpatients in a calm activity after eating in order to prevent calorie burn and weight loss. The target audience is young people (aged 18 and over) diagnosed with anorexia nervosa who are being treated in psychiatric inpatient treatment.



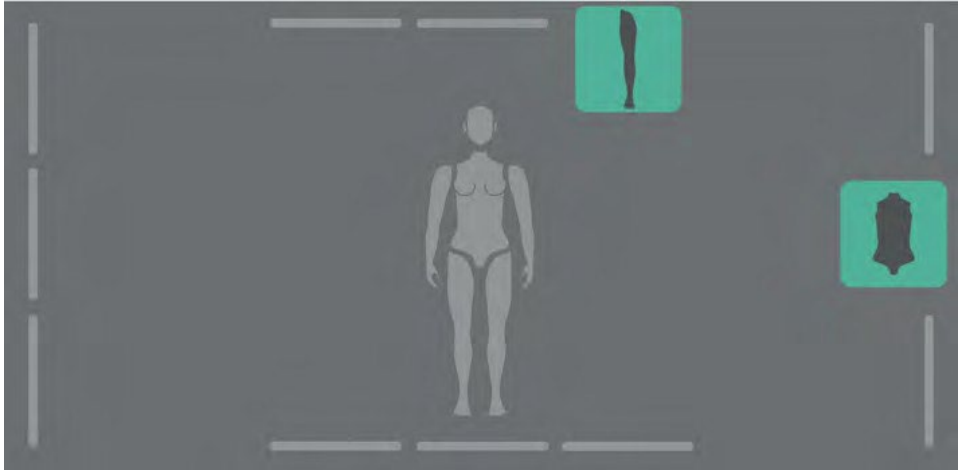
*Printed Colouring book*

### GAME CONTEXT

This game consists of a printed colouring book with illustrations and poems, and a digital application with AR. On each page, there is an illustration to be coloured in by the player and only the first sentence of a poem (created especially for the illustration) accompanied by a QR Code.

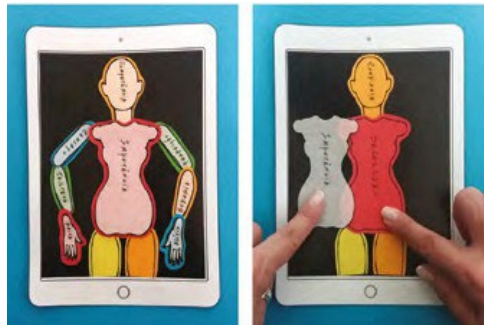
*This game was created by the researcher. The app was implemented by Rodrigo Assaf, the poems were created by Fátima São Simão and the illustrations were created by Carol W.*

## Armour Game



### SERIOUS GOAL

To obtain information about the emotional life of patients, as well as to help health professionals understand what kind of image patients have of their own bodies and of the disease. The target audience is young people (aged 18 and over) who have been diagnosed and are undergoing treatment.



*Game concept - paper prototype*

037

Reported  
Experience

### GAME CONTEXT

A digital puzzle game for tablet that focuses on patients' emotional aspects related to body image, identity and feelings associated with the experience of suffering from anorexia nervosa.

# Phase 3 | Prototype

## Research Tools for Playtests

We created a set of research tools to help us extract the maximum amount of information that would later help us analyse the results and develop the design principles. Although we were accepted by the Ethics Committee for our investigation, we were not allowed to take photos or record videos.

### Observation Grid

#### WHAT

This tool allowed us to record the players' behaviour during the playtest and understand which game elements triggered such behaviour and which game elements important (or not) for the ludic experience.

#### WHERE

- Schools.
- São João Hospital.
- Elyso de Moura Residence.

#### WHY

Observation Grid guides the researcher to observe and point out the performance of the game elements during the sessions and correlate it with the players' behaviours that were elicited during the test session.

#### WHEN

During all playtest sessions.

#### WHO

Researcher.

Observation Grid	Game Title:	Pg: 01
Location:	Date:	Participants:
Specialist in charge:		Game time:
<b>NON VERBAL (behaviours)</b> <i>Description of participants' behaviours during the game session, such as: actions of interest and disinterest, way of using/appropriating the game, agency, non-verbalised emotions of fun, immersion, satisfaction, stress or confusion. How do feelings affect the dynamics of the game? How does the game support players in achieving the serious goal? Is the game user-friendly in a way that enhances autonomy and fulfils the player's expectations? Do players have enough control over their actions in the game without compromising curiosity and fun? Does the game have a clear interface without unnecessary information so as not to distract players?</i>	<b>GAME ELEMENTS</b> <i>What elements provoked these non-verbal reactions from the players? How do they use the game? How does the game evoke feelings? What feelings lead to the use of which elements of the game and/or other objects?</i>	

## HOW

We created a grid with a group of questions in each section to guide the observer and to help analyse the results a posteriori:

- Non-verbal elements (behaviours): How do feelings affect the game's dynamics? How does the game support players in achieving the serious goal? Is the game user-friendly in a way that enhances autonomy and fulfils the player's expectations? Do players have enough control over their in-game actions without compromising curiosity and fun?
- Verbal elements (speech): How do they express that they are engaged (or not) in the game? What feelings are verbalised? How do they express that the dynamics involve their feelings? Do the players feel safe and believe in the content/narrative offered to them by the game? Does the game facilitate communication between players and other actors?
- Game elements: What elements provoked these reactions in the players? How do they use the game? How do the game elements evoke feelings? What feelings lead to the use of which game elements and/or other objects?

039

Reported  
Experience

Observation Grid	Pg: 02
<b>VERBAL (speaks)</b> <i>Speech manifestations that can support (or not) behaviour, such as: understanding (or not) the content of the game, verbalised emotions of safety, involvement, interest and disinterest: How do they express that they are involved (or not) in the game? What are their verbalised feelings? How do they express that the dynamics involve their feelings? Do the players feel safe and believe in the content/narrative offered to them by the game? Does the game facilitate communication between players and other actors?</i>	<b>GAME ELEMENTS</b> <i>What elements provoked these verbal reactions from the players?</i>

## Unstructured interview script

### WHAT

In this version we focused on understanding the perceptions about game playability, if the game's goals and content are aligned with the context, whether games have the potential to change players' behaviour and if this ludic experience was beneficial for the prevention or treatment of anorexia nervosa.

### WHY

We created two types of interview scripts (for teachers and health professionals). In the script for health professionals, a thematic block was added to assess the games' therapeutic potential.

### WHERE

- Schools.
- São João Hospital.
- Elysio de Moura Residence.

### WHO

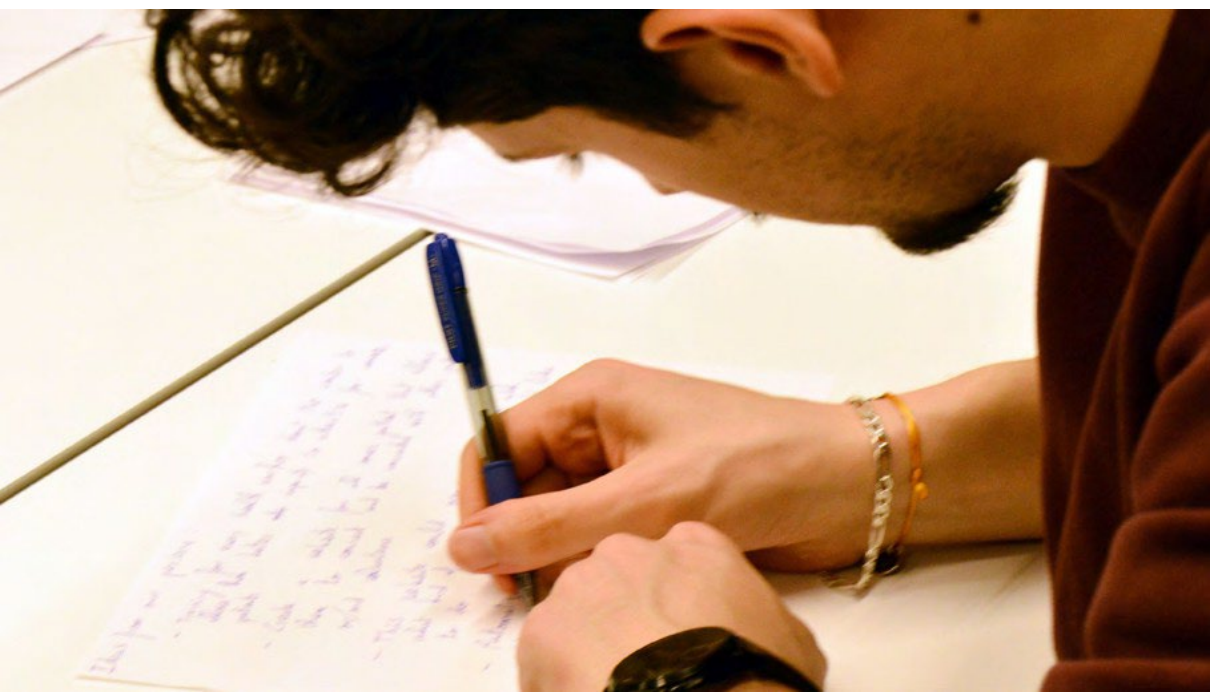
Professors and health professionals.

### WHEN

After playtest sessions.

### HOW

We applied the same script structure as in the previous pages.





## Diaries Studies

### WHAT

Written record of the researcher's activities, thoughts, and feelings throughout the research process.

### WHY

Diaries Studies was an important to support data gathering, because in each session there were many situations that occurred in addition to the reactions and behaviours noted on the observation grid.

### HOW

The notes in the study diary are characterised as memory records, which are made a posteriori, immediately after the observation period. The observer records in the diary what the person does and what happens during each day or session. Thus, after each test session, the events that took place were noted in the diary and reviewed by the researcher. In this way, we complemented the capture of the participants' reactions with a record of the researcher's thoughts.

- You can use a simple notebook. If it's a small notebook, it's easier to carry with you and doesn't attract attention from the players.
- Make different and complementary notes to the observation grid about situations in the session.
- Before starting the notes, write down the date, place, time of the session, who the participants were and where they were sitting.
- Write, but also be visual with drawings, emojis and other resources.

### WHERE

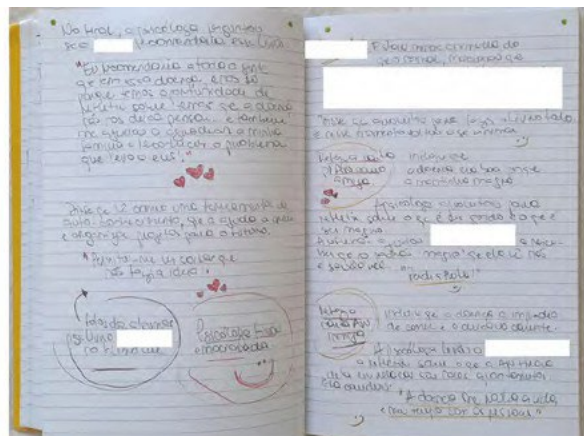
- São João Hospital.
- Elysio de Moura Residence.

### WHEN

During playtest sessions with patients and family members.

### WHO

Researcher.



Diaries Studies pages created during the research

## Positive and Negative Affect Scale (PANAS)

### WHAT

Health validated instrument and widely used to measure wellbeing. We applied validated Portuguese version.

### WHY

Through this method we were able to identify which emotions were aroused through the ludic experience with the games.

### WHO

All players.

### WHERE

- Schools.
- São João Hospital.
- Elysio de Moura Residence.

### WHEN

After playtest sessions.

### HOW

This instrument has 10 positive affections (e.g. interested, excited, inspired) and 10 negative affections (e.g. distressed, sad, nervous).

The player has the option of rating each of these affections on a 5-point scale (1 - Very little and 5 - Extremely).

	(1) Very Slightly or not at all	(2) A little	(3) Moderately	(4) Quite a bit	(5) Extremely
1. Interested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Distressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Excited	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Strong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Guilty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Hostile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Enthusiastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Proud	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Irritable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Alert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Ashamed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Inspired	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Nervous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Attentive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Jittery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Active	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Afraid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Phase 4 | Tests

## Playtests

### WHAT

A playtest is the process by which the designer tests a new game for gameplay bugs and design flaws before finalising it. These sessions need to be documented in detail in order to help the researcher analyse and discuss the results.

### WHO

69 people (PT/BR):  
*39 students (4-11 yo)*  
*16 patients (18-55 yo)*  
*7 family members (12-71 yo)*  
*3 professors*  
*4 health professionals*

### WHY

This moment is very important for the research because we collect the users' points of view about the games and how the games can be improved to offer an adequate and meaningful experience.

### WHERE

- Schools (PT/BR)
- Children's homes (PT/BR)
- São João Hospital.
- Elysio de Moura Residence.

### WHEN

The tests occurred after the COVID-19 pandemic when we get back in touch with the hospital and when classes returned to an in-person format.

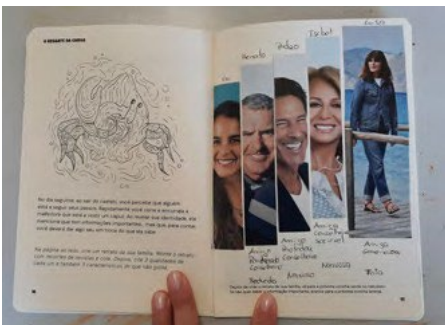
### HOW

Playtest enable the gathering of information that helps in the perception and evaluation of behaviours and the effects/manifestations of the ludic experience during people's interaction with the games:

- Before the session - researcher helps the health professional to introduce the game to the patients and their families.
- During the session - patients and family members play the game with the health professional and the researcher takes notes in the observation grid and diary.
- After the session - the health professional gives the patients and family members the PANAS to fill in and then the researcher conducts an interview with the health professional about the experience.

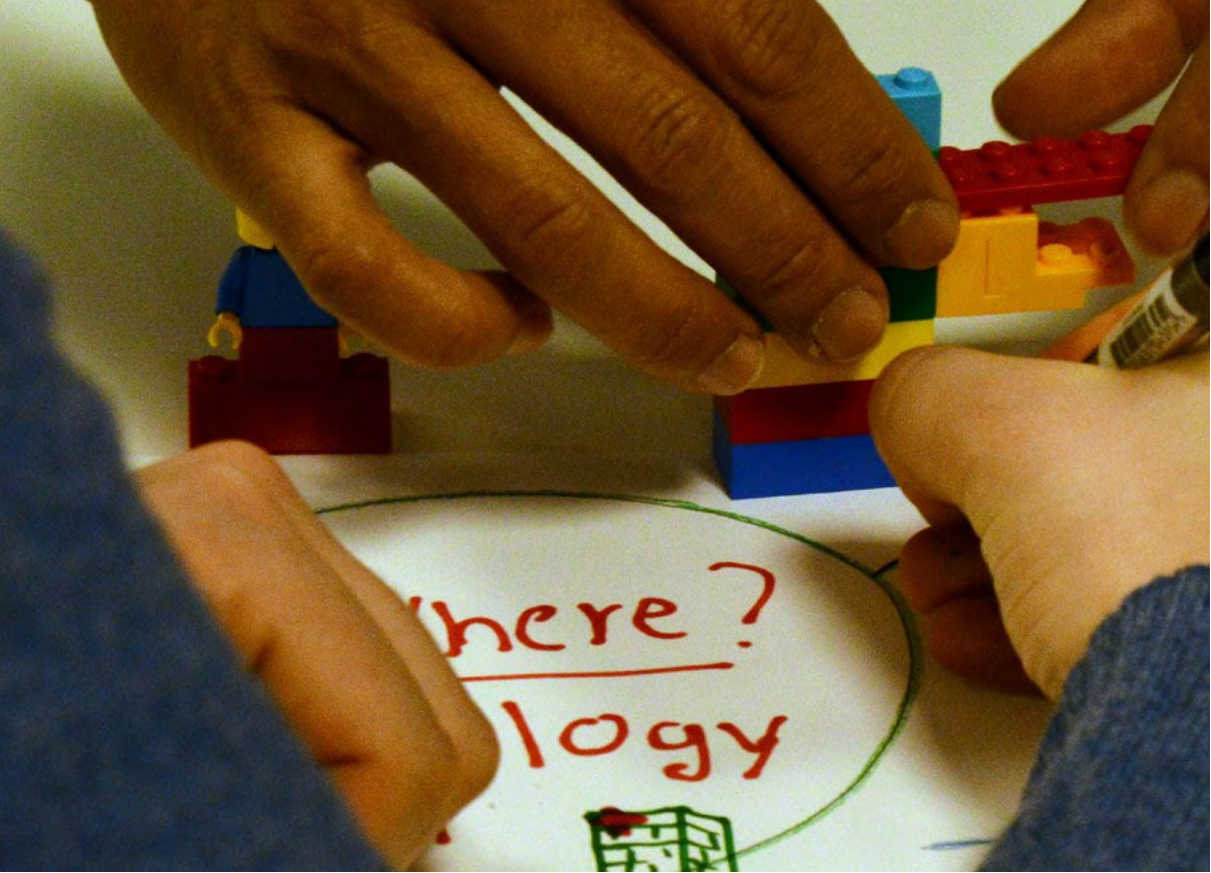
## Some highlights

- 7 of the 8 games evoked positive emotions in the players.
- Only 1 game (Armour Game) evoked negative emotions, but this was perceived by health professionals as something positive for treatment, as body image is a topic that is naturally very difficult to deal with.
- Domain 1 games applied in schools were important for realising that games provide learning about wellbeing concepts in a fun way that sticks in players' memories.
- Domain 2 games acted as a means of bringing people closer together, as well as being relevant tools for providing healthcare professionals with additional information about patients' emotional states.
- Domain 3 games provided greater well-being for patients in crisis situations and acted as tools to boost empathy in family groups.

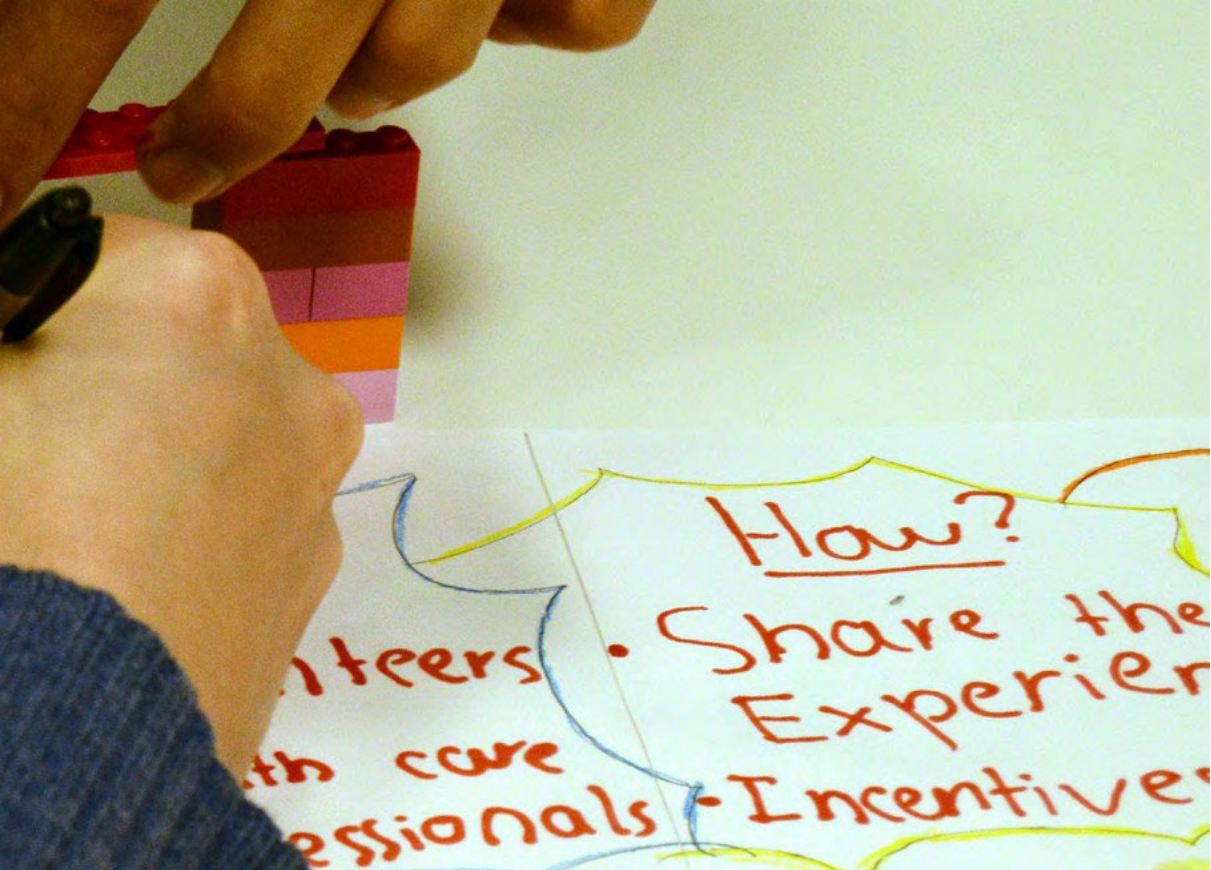


Playtests in schools, São João Hospital and Elysio de Moura Residence.





# Documented Experience



## Positive Play for Health

*Why these methods and not others?*

There are many design research methods; just look in specialised books or even on the internet and you'll see a profusion of results.

However, here in this section you will find a group of methods that we have created and selected especially because, in our experience, they are the most suitable for the health context. But mainly because, in terms of the research results these methods offer, they favour a ludic experience.

As we saw in the first section, ludic experiences have great potential to engage and bring people together, promote well-being and evoke positive emotions. These are relevant elements for promoting health and quality of life both inside and outside of research.

# Framing | Positive Play

*The desire to do 'good with technology' has emerged from a shared experience that technology has a major impact on how we live, that it has the capacity not only to increase stress and suffering, but also to improve lives individually and en masse. (Calvo & Peters, 2014)*

Following this line of thought, Rafael Calvo and Dorian Peters coined the term 'positive computing' as the design and development of technology to help its users achieve their potential and wellbeing.

Positive computing is a philosophy that considers that not only wellbeing in the design of technology is an achievable goal, but also that it is valuable to build digital environments able to promote resilient, happy and healthy people (Calvo & Peters, 2014).

Various successful initiatives have been witnessed in recent times , however, games still struggle to be recognized by many (including by scientific communities) as tools with the potential to aid clinical and other societal demandings. Playing is often misunderstood as a mere inconsequential distraction or a pleasurable infantile activity.

The epithet 'Positive Play' is grounded on this theoretical scope. It is focused on the act of playing games designed as instruments to foster empowerment, inclusiveness, autonomy, resilience, awareness, quality of life, and life satisfaction in their players. To promote human potential in its players' mental, physical, and social well-being is its purpose, its raison d'être.

## More information

*Positive Play: Games for Human Potential and the Yet Unexplored Case of Anorexia Nervosa. In: Handbook of Research on Solving Modern Healthcare Challenges with Gamification. Igi-Global 2021. DOI: 10.4018/978-1-7998-7472-0.ch010*

*Carnival Play: eHealth Solution to Evaluate, Rehabilitate, and Monitor Dexterity and Manual Strength. In: Handbook of Research on Solving Modern Healthcare Challenges with Gamification. Igi-Global 2021. DOI: 10.4018/978-1-7998-7472-0.ch012*

*Inclusivity Play: Web Platform and Games for Inclusion and Diversity in the University: The Skills for a Next-Generation Project. In: Exploring Educational Equity at the Intersection of Policy and Practice. Igi-Global 2024. DOI: 10.4018/979-8-3693-1614-6.ch007*

*Positive Computing: Technology for Wellbeing and Human Potential by Rafael A. Calvo and Dorian Peters. MIT Press. 2017.*



# Design Process

## Human Centred Design

Human Centred Design is a design approach that puts the users first, focusing on the user when creating artefacts, keeping them at the heart of the product, service, or experience development process.

There are many design process models that consider the human-centred approach, they may have different structures and/or names, but they all go through these phases: *Empathy, Ideation, Prototyping and Tests*.

Different tools can be used in each of these phases. On the following pages, we present a set of ludic tools for use in healthcare environments.

# 1

### EMPATHY

During the empathy phase, the researcher spends time getting to know the user and understanding their needs, desires, and objectives. This means observing and interacting with people in order to understand them on a psychological and emotional level.

# 2

### IDEATION

Ideation is a creative phase where researchers generate ideas in sessions. Participants gather with open minds to produce as many ideas as they can to address a problem statement in a facilitated, judgment-free environment.

# 3

### PROTOTYPING

Prototyping is an experimental phase where design teams implement ideas into tangible forms. Teams build prototypes of varying to capture design concepts and test on users.

# 4

### TESTS

This phase allows the design team to understand how users experience certain products or services. Usability of products and services can be validated at any stage of the design process.

# 1 EMPATHY

*Put yourself in someone else's shoes*

## Toolkit SEED: “SomaEsthetics for Enabling Designers”

### WHAT

This toolkit offers designers a greater connection with themselves and with others in order to promote empathy.

### WHY

To create products and services that are meaningful to users, empathy and connection are fundamental elements.

### WHERE

In a room with free space and tables to carry out the exercises and activities.

### WHEN

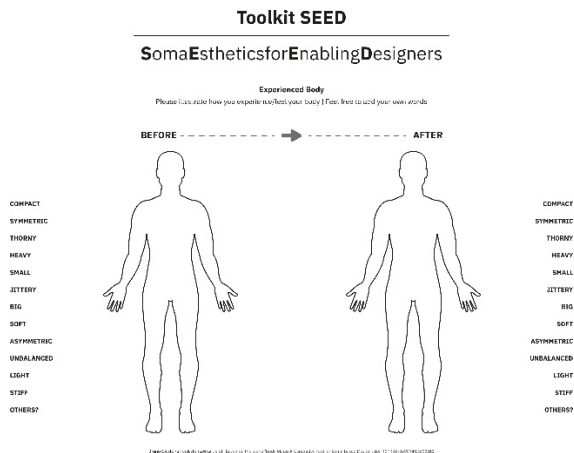
Before starting a design project.

### WHO

Design Team.



[Watch the video](#)



[Template Download](#)

## HOW

Toolkit SEED has 3 sections:

**Section 1** is the promoter of: “*Awareness of Lived Experiences*”. It refers more to individual or group somatic exercises that exclusively promote a good perception of the Self. Somatic relationship between mind and body.

In short, it is not articulated with external objects. It’s “You” and/or the “Group”. At the end of these exercises, the person (in this case, the designer) will feel more: \_1 ‘*Connected*’ \_2 ‘*Embraced*’ (with themselves and/or the group) \_3 ‘*Corresponded*’ (especially with the group);

**Section 2** is the promoter of: “*Extracting Aesthetically Evocative Qualities*”. You can work more with somatic exercises (also individual or in groups), but which above all promote good perception (sensory; kinaesthetic; emotional) with external objects.

From space to ‘tangible’ physical artefacts (from the chair; to the mattress; to fabrics; sponges; paper; walls; light; etc.). These exercises (unlike the previous ones, which can be carried out by the designer regardless of the project he or she is involved in. They refer to you and the group-team) will serve to be replicated in the projects (at different stages of them, from prototyping).

At the end of these exercises, the person (in this case, the designer) will have the somatic tools to explore and learn ‘levels’ of their projects: \_1 *Rhythm* \_2 *Rocking / Balancing* \_3 *Touching / Hapticity* \_4 *Movement / Playing* \_5 *Trust / Security*.

These two sections will support what is known as “Body Mapping”. The above approach, referring to the body, movement, space, will then underpin phases of person-centred interaction design with the aim of promoting:

**Section 3** - 01 Subtle Guidance in encouraging bodily inquiry through choice of interaction modalities \_02 Intimate Correspondence feedback and interactions that follow the rhythm of the body \_03 Making Space shutting out the outside world – metaphorically and literally – to turn attention inwards \_04 Articulation of Bodily experiences to encourage learning and increased somatic awareness.

# ANgame Collab

## WHAT

It's a ludic in-person method. This is a paper card game that acts as a formative tool designed to help with the mapping, management and dialogue flow in a collaborative process (Interviews and Focus-group).

## WHY

This game organises and distributes the participation time of the guests, brings people together, creates an inviting and informal environment, and creates a mapping of the conversation which is an additional result that supports the researcher for analysing the results.

## WHEN

Beginning of the Design Research.

## WHO

Researcher and interviewers.

## WHERE

Private room with a table and chairs.

## HOW

Preparation:

- After the Interview or Focus Group script has been created, place 1 question from your script on each black card of the template.
- Next, create a list of keywords linked to the question themes and place 1 keyword on each chip of the template (these keywords are important to help participants create the answers to their questions).
- Print out and cut out the Question Cards, Keyword Cards you created and the Action Cards from the template.
- Have enough small post-its in different colours (1 colour for each guest) and pens.
- Reserve a room with a table and chairs and have audio and video equipment in place for recording the session, as well as sheets of paper for your notes.



[Watch gameplay](#)



[Template Download](#)



*Question Card, Keywords Chips, Post-its and pens*

#### Game Rules:

- Participants must shuffle the Question Cards and place them in a pile in the centre of the table, dark side up, and spread out the Keyword Chips on the table.
- Participants have 2 minutes to answer the question shown on the Question Card at the top of the pile.
- To answer, they have to choose a Keyword Chip and write (on the post-it) something (a sentence, keywords, etc.) about the topic of the Question Card.
- Researcher takes the Question Card from the pile and places it on the table.
- Participants must place the answer as they wish, but next to the Question Card.
- Participants can also use an Action Card to go back to a previous question or choose a new Question Card.
- When the time is up, the researcher reads the question and answers aloud.
- At this point and in turns, the participants must explain the reasons that led them to those answers and why they placed the Keyword Chip there.
- There are no winners.
- At the end of the session, don't forget to take photos of the table with the results of the card positions.

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Documented  
Experience

## Analysing:

- Post-it colours: these help you understand the number of responses from each participant. This helps you see who contributed the most (or least) during the session.
- Answer placement: a) Cards closer to the Question Card show the participant has a lot of knowledge about the topic. As far as the answer is from the Question Card, it may indicate that the participant has less knowledge about the topic. b) Cards from different participants next to one another indicate that they agree or complement each other.
- Action cards: These may indicate that the participant needed more time to reformulate or deepen an answer or didn't want to "run away" from the subject.
- Complement your mapping analysis with the session recordings.



*Conversation Mapping after the session.*

## Cultural Probes | Digital & Gamified format

### WHAT

Cultural probes are not an in-person method, consisting of materials designed to inspire people to carefully consider their context and personal circumstances to respond to the design team in unique and creative ways. Could be used various artefacts and, like the method itself, are intentionally flexible and open. We suggest using a digital and gamified format.

### WHY

A digital cultural probe can track the user over the period of a day or even a week. This helps to better understand the challenges, barriers, needs and expectations that arise throughout the participant's day.

### WHERE

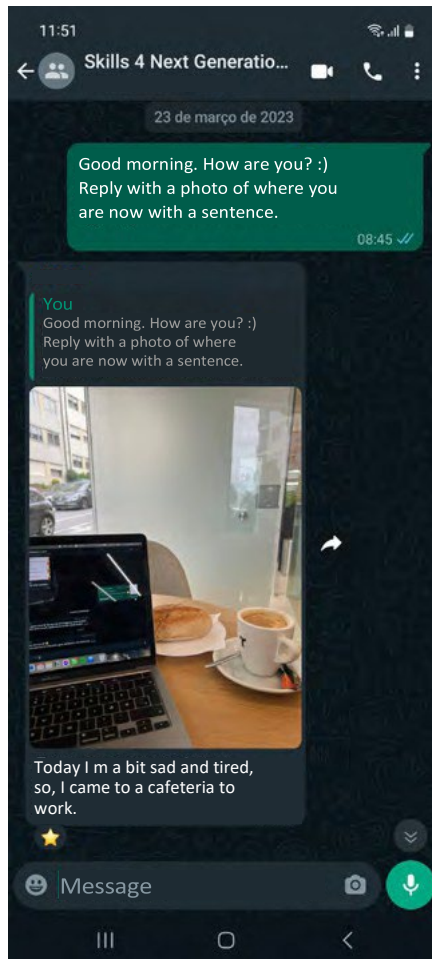
Use mobile phones (the participant's and the research team's) as a resource and use the private chat on WhatsApp social network as a means of contact.

### WHEN

Beginning of the research.

### WHO

Users (patients, family, etc.).



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Documented Experience

*Digital Culture Probes: chat example with participants*

## HOW

### Rules:

- Define the number of days the user will be followed and how many interventions (prompts) will be made during this time (e.g. 3 times a day - morning, afternoon, and evening).
- Create a script of prompts aligned with the research objectives that covers all the days of interaction. Use informal language to bring the participant closer.
- Also create an introduction (or welcome) prompt that will be sent one day before the cultural probe starts, just to inform the participants about the game rules that will take place.
- To create more interactive prompts, use different features that the Whatsapp social network normally uses (e.g. emojis, audio, image, gif, photo, music, link sharing, etc.) to promote engagement and give participants freedom of expression.
- To make the participants' experience engaging and motivating, implement a system of points (stars, numbers or a "like") awarded to players' answers to encourage them to give more answers.
- Create a list with the participants' contact and set up a private Whatsapp group with each participant, yourself and one other investigator from your team (this will only serve as a backup).
- Throughout the cultural probe, send the prompts to the participants and award points for each answer.
- At the end of the cultural probe, inform the participant of the game's final score and thank him/her for taking part.





# Affinity Mapping

## WHAT

Process for externalising and grouping research observations and knowledge in a meaningful way, to align design teams based on the data as they design.

## WHERE

In a reserved physical room with walls for sticking post-its or in a group virtual room that allows everyone to create digital post-it boards (e.g. Miro, FigJam or Google Jamboard).

## HOW

Preparation:

- Once you've finished collecting information from users, invite your entire design team to a session (minimum 1h, maximum 3h long).
- Have enough post-its (medium or large) and pens for all participants.

Rules:

- Distribute a post-it pads and a pen to each participant.
- Ask everyone to record an average of 50-100 observations about each user interviewed.
- Stick the post-its on the wall.
- Invite the team to organise and group the observations: notes that share a similar intention, problem, or question - or that share an affinity - are grouped together.
- Define a title or theme for each group of notes.
- From this work, a story emerges about people, their tasks, and the nature of their problems.

## WHY

As long as research data is stored as tacit knowledge in people's minds or buried in interview transcripts, teams will find it difficult to synthesise what has been observed and learned.

## WHEN

After User Research.

## WHO

Design teams.



## Personas

### WHAT

Personas are fictional people who represent the diversity of motivations, behaviours, attitudes, aptitudes, constraints, mental models, workflows or activities, environments and frustrations observed with current products or systems. Personas communicate about how users behave, how they think, what they want to achieve and why. They are based on patterns of behaviour that we observe during the user research phase.

### WHY

Because you need to understand people. However, trying to design for everyone results in unfocussed or incoherent solutions, so some level of consolidation is needed. Persona has a human description that facilitates empathy and communication and creates useful design objectives for responsible and meaningful design.

### WHERE

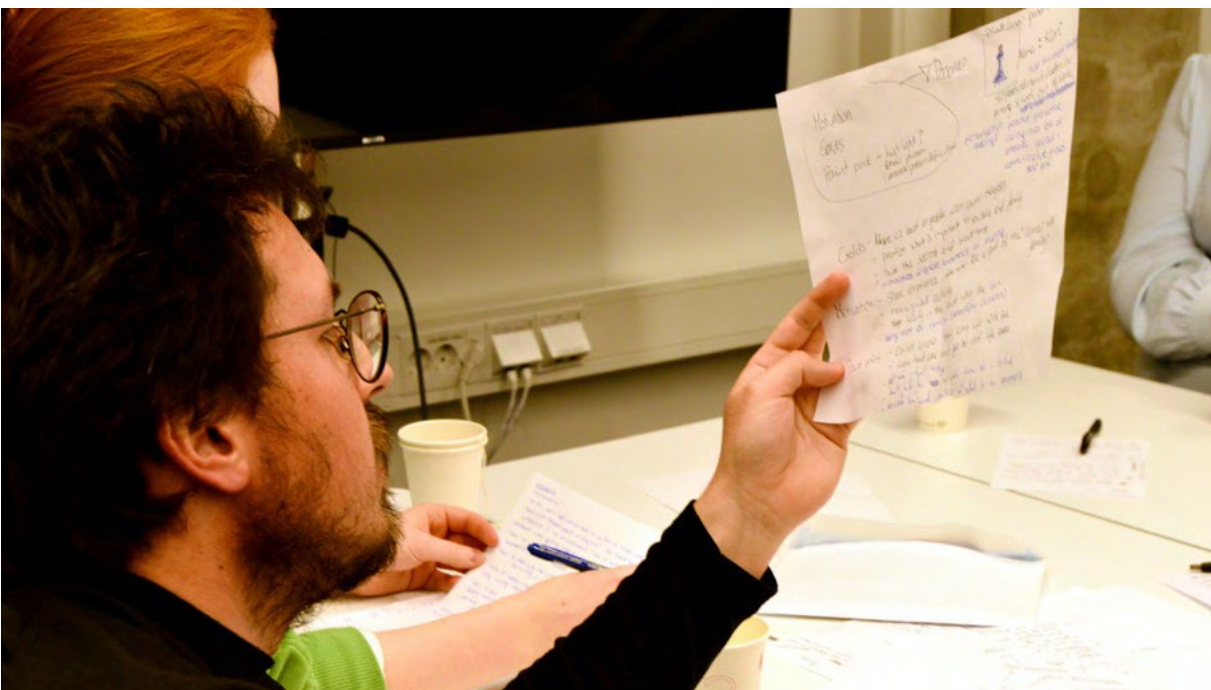
In a reserved physical room with papers and colour pens or in a group virtual room that allows everyone to create digital boards (e.g. Miro, FigJam or Google Jamboard).

### WHEN

After Affinity Mapping.

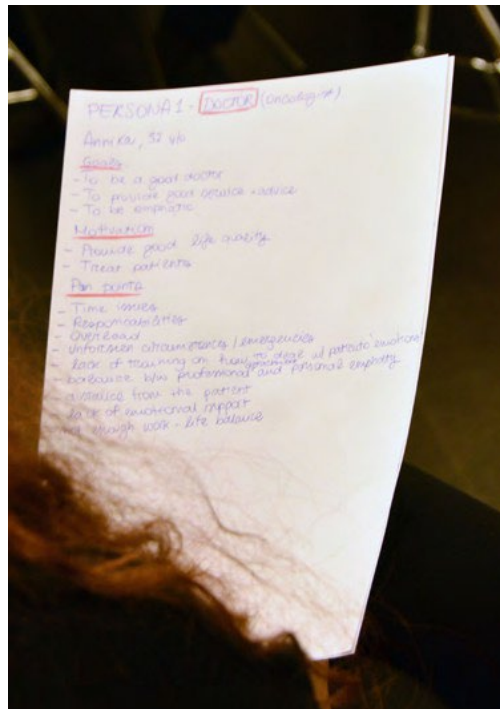
### WHO

Design team.



## HOW

- Personas are usually presented in one-page descriptions in poster format.
- Give the person a name and age and add a photograph (use free images from the internet or draw a picture).
- Create a story that describes in detail the main aspects such as skills, objectives and relevant behaviours taken from Affinity Mapping.
- Describe a scenario, through a short narrative in which the persona faces a health challenge (indicated in the affinity mapping), indicate what emotions he/she felt in this confrontation and what needs he/she had.
- Define a group of motivations that the persona wants to achieve (in their own treatment - or that of a family member, in the healthcare environment, etc).
- Create a list of limitations that the persona may have (physical, cognitive, communication, etc.).
- Use other supplementary images to give a convincing impression of the persona's lifestyle, including typical spaces, objects, and activities.
- Create as many personas as you need to represent the diversity of your research findings.



## 2 IDEATION

*Creating a lot of ideas*

### Gamified Brainwriting

#### WHAT

Brainwriting is a method of generating ideas in which participants write down their ideas for a few minutes without talking. We suggest a gamified version in which the ideas generated by a participant are seen as a deck of playing cards.

#### WHY

Generation of ideas with less social anxiety and incitement of competition during the session. Promotes the production of more diverse and creative ideas.

#### WHERE

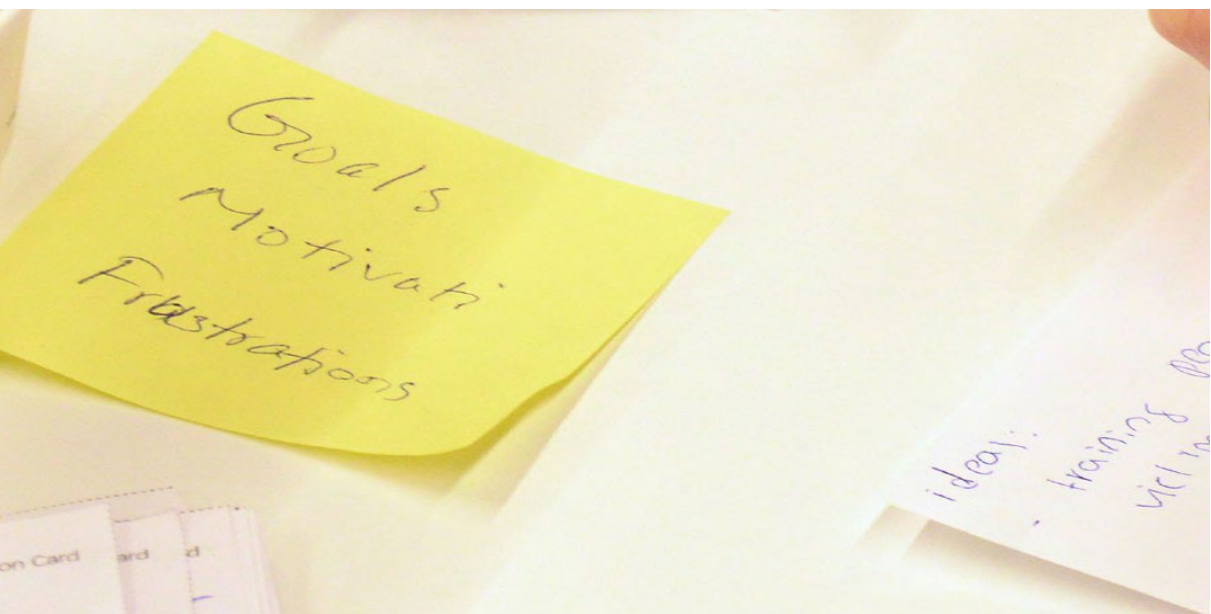
In a reserved physical room with a table and walls for sticking post-its or in a group virtual room that allows everyone to create digital post-it boards (e.g. Miro, FigJam or Google Jamboard).

#### WHEN

After Empathy phase.

#### WHO

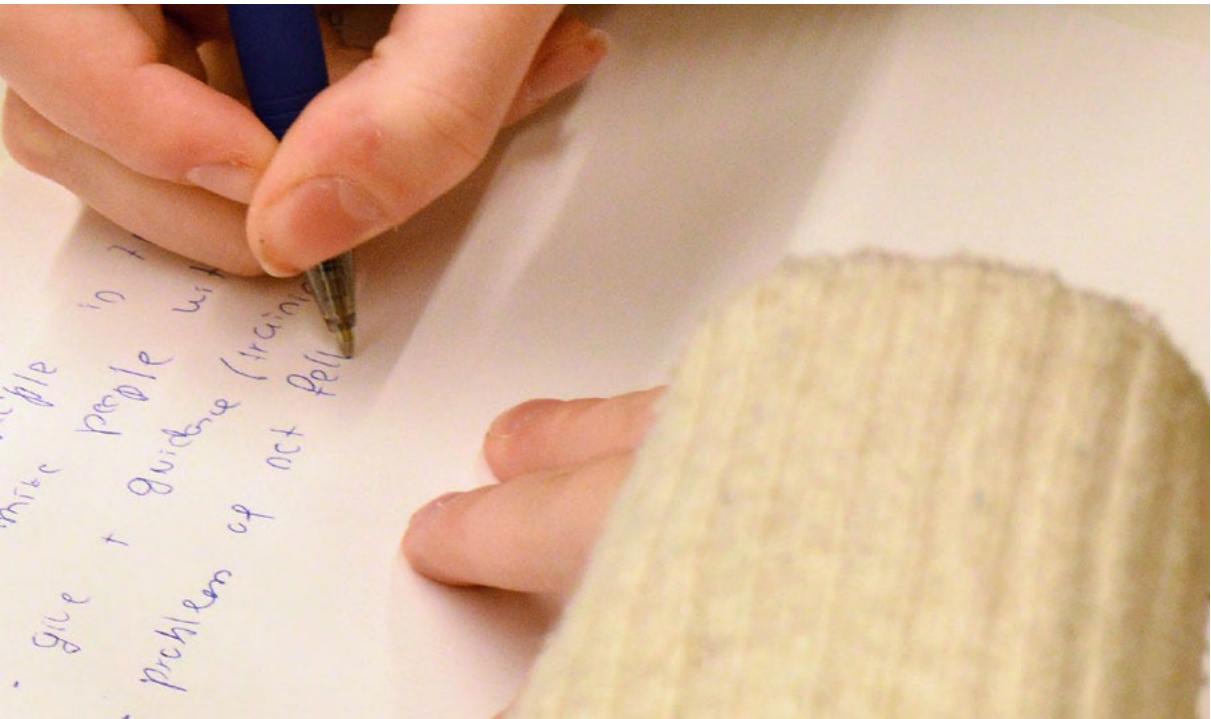
Design team.



## HOW

### Rules:

- Divide people into groups of up to 3 people and give each group a persona. If the team is just one group, hold a brainwriting session for each persona.
- Give each participant a Post-it pad and a pen.
- Inform them of the general session objective with a question (e.g. How can we help Persona X realise Y through a positive product, service, or experience?)
- Tell them that at this stage the important thing is the quantity of ideas, not the quality. All ideas are welcome.
- Set the time for the session on the clock (or a stopwatch with an alarm) - a minimum of 7 minutes and a maximum of 15 minutes.
- Then each participant writes an idea on a post-it and sticks it to the table next to him or her.
- When the time is up, the participants arrange their “deck of playing cards” (ideas written on the post-its) in their hands.
- Each person in his or her turn “discards” an idea in the centre of the table and briefly shares their thoughts with the others. Those with similar ideas can discard them together. This will help to create groups of ideas (clusters).
- The game ends when everyone has discarded and presented all ideas.



## Bold Idea

### WHAT

This is a collaborative method of hierarchizing ideas based on a group discussion about viability, adequacy and meaning.

### WHERE

In the same Ideation Session.

### WHO

Design team.

### WHEN

After Gamified Brainwriting.

### HOW

- The group decides who will be the mediator.
- The mediator should choose an idea (or cluster of ideas) and lead a discussion among everyone about the idea's:
  - Viability (Do we have the financial, technical or personnel resources to take this idea forward?)
  - Adequacy (Does this idea match the persona's profile? Does it really fulfil their needs?)
  - Meaning (Is this idea something that satisfies the persona's expectations? Is it something innovative that motivates the persona to use it?)
- Participants vote for the ideas that most fulfil the criteria.
- The 3 most voted ideas are considered Bold.
- Don't discard the least voted ideas, this may be useful later.

### WHY

The hierarchy of ideas helps the Design Team to define together which ideas are most meaningful to users and most effectively fulfil the needs indicated in the personas.



# 3 PROTOTYPING

*Bringing ideas to life*

## Building Blocks | For products or physical artefacts

### WHAT

Prototyping using building blocks quickly makes an idea tangible and can be tested for preliminary internal validation.

### WHERE

In the same Ideation Session.

### WHEN

After Ideation phase.

### HOW

- Place all the blocks in the centre of the table.
- Define with the Design Team the Bold Idea that will be prototyped.
- Tell them that the prototype doesn't need to be fully functional and full of details, the key is to offer the minimum product usability experience.
- Complement the construction with post-its, drawings and other resources that help communicate the idea.

### WHY

It serves as a playful moment that brings the team closer together and opens space for new discussions and the generation of insights. What's more, it's something simple that everyone can build.

### WHO

Design team.



*Example of product prototype*

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Documented  
Experience



## Gamified Journey Mapping | For services or experiences

### WHAT

A visual representation of a person's journey while interacting with a service or experience. Journey mapping allows the Design Team to describe in detail all the user's "steps", points out the emotions that are awakened during the process and highlights all the relevant touchpoints that are needed to make the idea tangible.

### WHY

It helps the Design Team to "materialise" a new service or experience that can be demonstrated and validated in preliminary internal tests. This method gives all participants an equal voice in the prototyping activity, and it can bridge different perspectives by providing a common reference for further discussion.

### WHERE

In the same Ideation Session.

### WHEN

After Ideation phase.

### WHO

Design team.





## HOW

- Have a large table available, sheets of paper in different colours and sizes, tape, glue, post-its and coloured markers.
- Once the new service or experience has been defined, invite your team to create a Journey Map in the shape of a board game.
- Set up a large board with sheets of paper on the table and draw a course like a game board, with winding paths and lots of squares to go through.
- Create the contact points for the new service or experience in the form of drawn (or pre-printed) paper tokens and identify them with a name (e.g. “Clinic Reception”). Tokens are used to model face-to-face interactions, or interactions mediated by technology or artefacts, in a specific environment and context.
- Make sure these tokens can stand up and distribute them along the course of the “board”.
- Write on post-its the actions that the user/player needs to carry out at each touchpoint (e.g. identify him/herself, request an appointment, pay for an exam, etc.) and distribute them along the board next to each token.
- Create a token for the user/player or persona.
- Complement the board game with drawings and other resources to make your service or experience as visual as possible.

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Experience



## Framework SG4AN | For games or ludic activities

### WHAT

SG4AN game tool (Serious Games for Anorexia Nervosa Game Tool) supports the design of serious game concepts. With this game tool, a multidisciplinary team will be able to create games.

### WHY

People often don't know how to create a game. This game tool makes it easy for the design team to create the basic elements for a serious health-focused game.

### WHERE

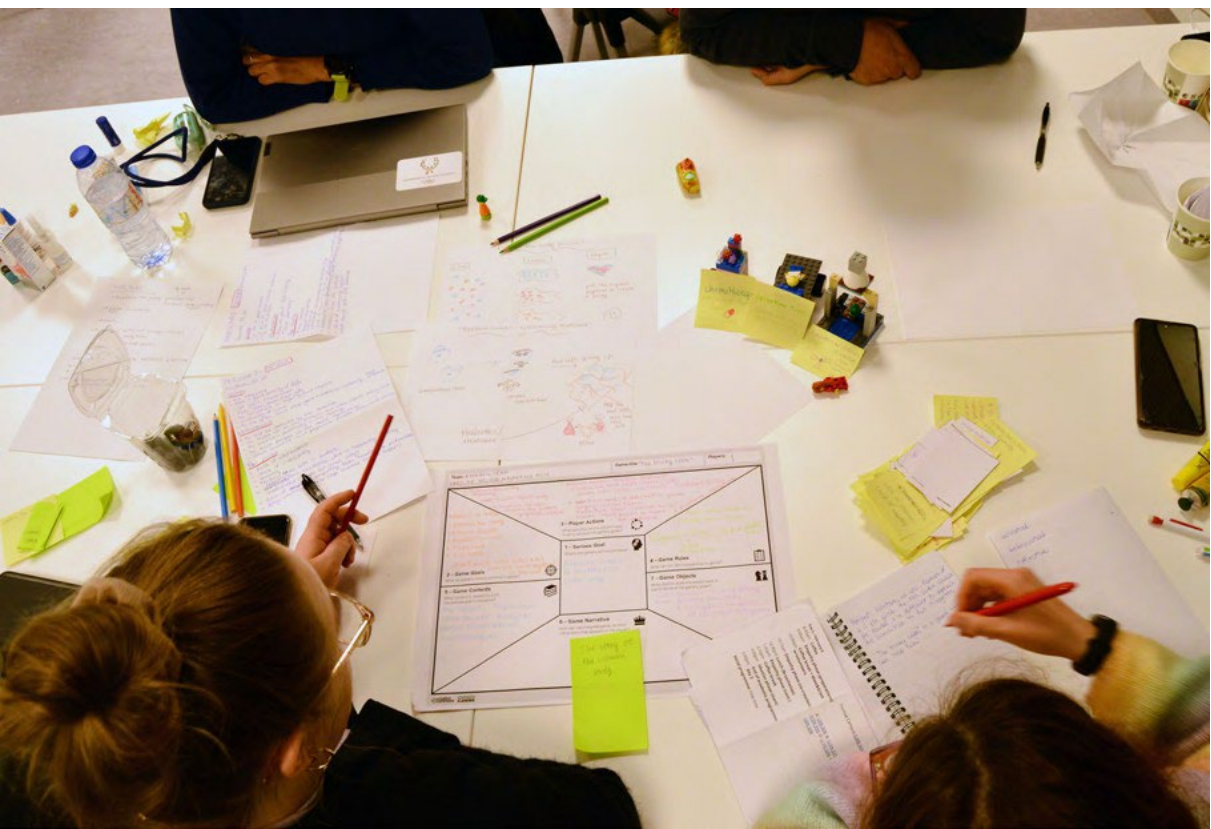
In the same Ideation Session.

### WHEN

After Ideation phase.








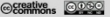
### WHO

Design team.



## HOW

- You can print the SG4AN game tool (board and cards) on paper or use the board's digital version to fill it in on your computer (Power Point, Miro, Figjam or Google Jamboard).
- The board has 7 blank spaces to fill in. Each space is made up of a basic element for designing a serious game, followed by a guiding question.
- Fill in the board starting with the Serious Goal, then use all cards and answer all questions. Serious Goal serves as a design brief that guides the entire game development.
- After defining the Serious Goal, fill in the top spaces (2, 3 and 4) of the board with your game idea.
- Then fill in the lower spaces (5, 6 and 7) of the board.
- Finally, fill in the top part of the board with the team's name, give the game a name and specify the number of players (minimum and maximum).

Team:		Game title:		Players:	
<b>3 – Player Actions</b> What activities do the players have to do to achieve the game's goals? 					
<b>2 – Game Goals</b> What do players need to achieve in-game? 		<b>1 – Serious Goal</b> What's the game's serious purpose? 		<b>4 – Game Rules</b> What can (or can't) players do in-game? 	
<b>5 – Game Contents</b> What content is needed to fulfill the serious goal in the game? 				<b>7 – Game Objects</b> What objects does the player have to use to achieve the game's goals? 	
<b>6 – Game Narrative</b> How can we integrate game content into a story that appeals to the player? 					
				SG4AN game tool	

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Documented  
Experience



[Template Download](#)

# 4 TESTS

## *Validating Ideas*

### Role-Playing

#### WHAT

Role-playing consists of exercises whereby the designer (or other stakeholders) takes on the role of the user, assuming the routines and behaviours that he or she might experience in actual scenarios of use. It is a relatively low-cost, low-investment method; however, a certain amount of work is necessary to make the roleplay credibly connected to the lives of users.

#### WHY

Acting the role of the user can forge a deep sense of empathy and highlight challenges, presenting opportunities that can be met by design.

#### WHERE

During a Design Team meeting, or stakeholders can be invited to a test session.

#### WHEN

After Prototyping phase.

#### WHO

Design team and other stakeholders.

#### HOW

- Create a script for the role-playing, which can be based on the persona you created earlier.
- Add to the script interaction situations between the persona and the prototype that are relevant for the team to observe.
- Test the script with your group (rehearsal), to check that all the design issues are covered.
- Prepare the role-playing setup with the prototype, audio and video recording equipment, script, and other materials you think are necessary.
- Define who in the team will be the “guide” who will help the others during the role-play.
- Avoid other people from the team intervening, as they could bias the role-play.



## Think Aloud Protocol

### WHAT

Think-aloud protocol is a method that requires participants to verbalize what they are doing and thinking as they complete a task with the prototype, revealing aspects that delight, confuse, and frustrate.

### WHY

The protocol is simple - it asks people to articulate what they are thinking, doing, or feeling while carrying out a set of tasks that align with their realistic day-to-day goals. It allows researchers to understand the user's interaction with the artefact, but also helps them identify aspects of the prototype that can be corrected or improved.

### WHERE

During a Design Team meeting, or stakeholders can be invited to a test session.

### WHEN

After Prototyping phase.

### WHO

Design team and other stakeholders.

### HOW

- When planning a think aloud session, instead of evaluating the usability of the entire prototype, concentrate your efforts on evaluating the specific aspects that the design team is most unsure about.
- Create a list of tasks for the user to carry out with the prototype.
- Users are invited to carry out the tasks pre-defined by the team while talking aloud about what they are doing, thinking, and feeling.
- Evaluators may have to repeatedly remind participants to verbalise what they are thinking while performing a task.
- The test should centre on what is happening, not why; people are reasonably capable of speaking and completing a task at the same time without affecting the outcome.
- Make video and audio recordings for the team to analyse later.



# User Experience Questionnaire

## WHAT

A fast and reliable questionnaire to measure the User Experience of interactive products.

## WHY

The scales of the questionnaire cover a comprehensive impression of user experience. Both classical usability aspects (efficiency, perspicuity, dependability) and user experience aspects (originality, stimulation) are measured.

## WHERE

Test session with users.

## WHEN

After Prototyping phase.

## WHO

Design team and other stakeholders.

## HOW

- This questionnaire provides quantitative data on the participants' impression of their experience with the artefact.
- Give the questionnaire to the participants immediately after they have finished the test tasks with the prototype.
- When handing it to the participant, mention that this is a scientifically evaluated questionnaire for measuring user experience.
- Try to get the answers before discussing or asking questions of the participants.

	1	2	3	4	5	6	7		
annoying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	enjoyable	1
not understandable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	understandable	2
creative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	dull	3
easy to learn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	difficult to learn	4
valuable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	inferior	5
boring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	exciting	6
not interesting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	interesting	7
unpredictable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	predictable	8
fast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	slow	9
inventive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	conventional	10
obstructive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	supportive	11
good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	bad	12
complicated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	easy	13
unlikable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	pleasing	14
usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	leading edge	15
unpleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	pleasant	16
secure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	not secure	17
motivating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	demotivating	18
meets expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	does not meet expectations	19
inefficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	efficient	20
clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	confusing	21
impractical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	practical	22
organized	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	cluttered	23
attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	unattractive	24
friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	unfriendly	25
conservative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	innovative	26

*UEQ - English version*







**Lived  
Experience**



# Idea Camp | Day 1

## *Prepare for Creativity*

In this first contact with the participants, we present the role of emotions in Design process, what emotions and feelings are and the different levels of Emotional Design: visceral, behavioural, and reflective. This was important to show the participants the theoretical bases that formed the structure of the workshop.



## Trust Exercises

Everyone was invited to take part in a series of trust-building exercises, such as: drawing a colleague, answering in-depth questions about themselves, presenting their personal goals within the workshop, among others. All these exercises were important for bringing the participants closer together and fostering hetero-knowledge.



## Toolkit SEED

After setting up the working groups, we gave the participants an introduction to the SEED Toolkit (which can be seen in detail in section 2) and then all the participants were invited to take part in the activity.

Two exercises from the SEED Toolkit were applied, which enable interaction with the other colleague to bring them closer together. The first exercise focussed on Connecting the participants. The second exercise evoked a greater perception of the self and of the other.

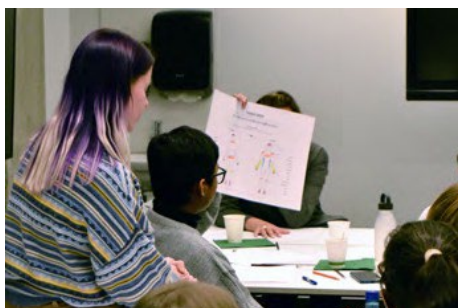


077

Lived  
Experience

## Body mapping

This activity encourages participants to draw their own body. They drew their feelings after the Somaesthetics activities. By sharing the body maps, the participants were able to reflect together about themselves.



**Toolkit SEED**  
SomaEstheticsforEnablingDesigners

Experienced Body  
Please illustrate how you experienced your body in the past and your work

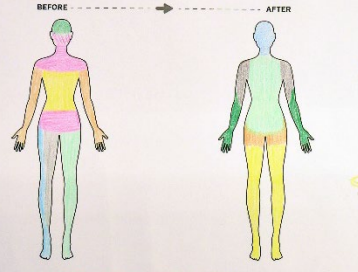


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- OTHERS?

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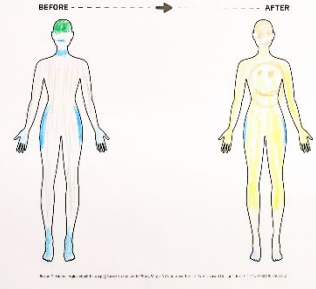


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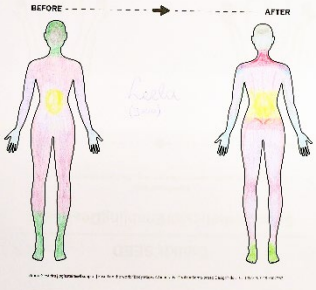


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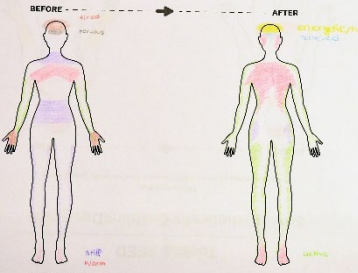


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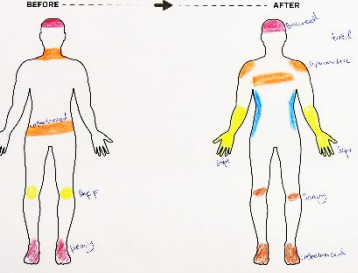


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SomaEstheticsforEnablingDesigners

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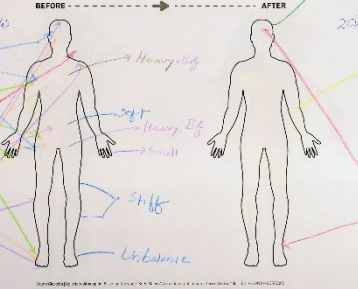


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SomaEstheticsforEnablingDesigners

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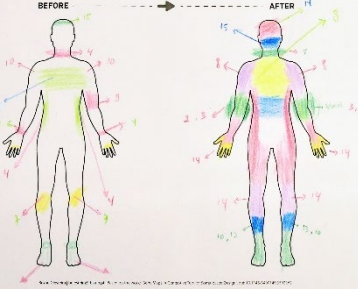


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SomaEstheticsforEnablingDesigners

Experienced Body  
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MEZIN

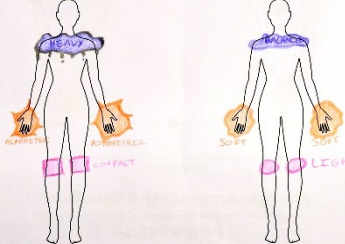
### Toolkit SEED

#### SomaEstheticsforEnablingDesigners

Experienced Body

Please describe how you experienced your body. Feel free to use your own words.

BEFORE → AFTER



- COMPACT
- SYMMETRIC
- THINNY
- HEAVY
- SMALL
- JITTERY
- BIG
- SOFT
- ASYMMETRIC
- UNBALANCED
- LIGHT
- STIFF
- OTHERST

- COMPACT
- SYMMETRIC
- THINNY
- HEAVY
- SMALL
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- BIG
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- UNBALANCED
- LIGHT
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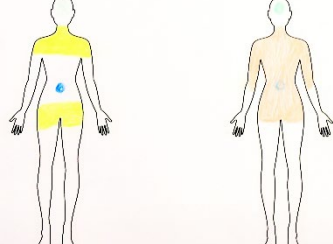
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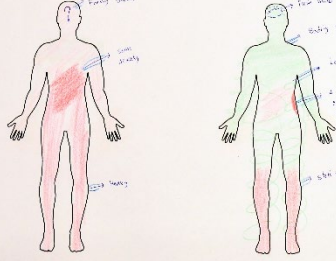
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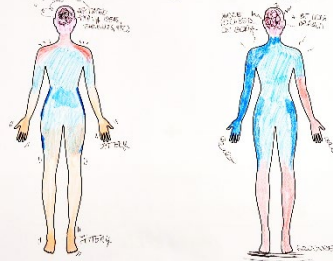
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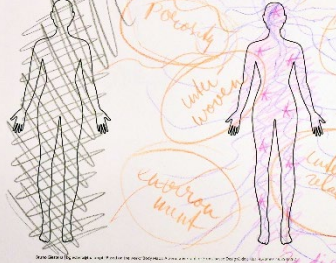
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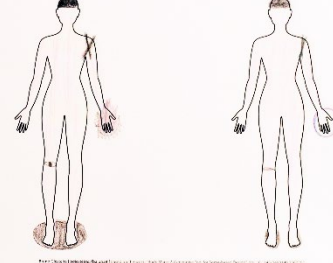
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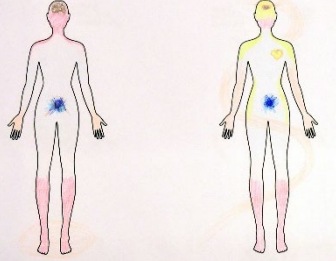
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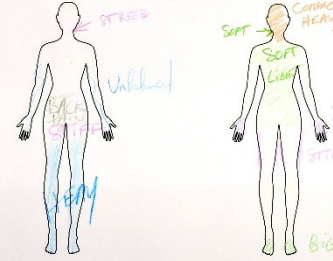
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## Swimming in the lake

The entire group of participants was invited to take a dive in the lake. Despite some people's resistance, the majority braved the cold and immersed themselves in the chilly waters to then enter the sauna. This experience was an opportunity for everyone to get to know each other better and brought the group closer together. What's more, this exchange of temperatures provided a boost to the participants' creativity.



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## Idea Camp | Day 2

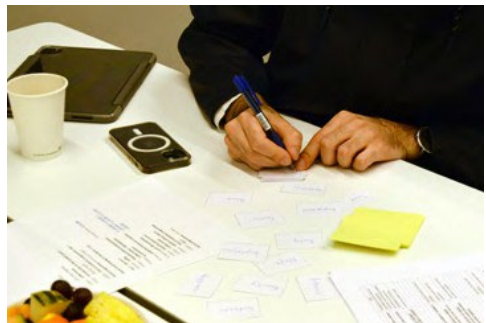
### *Immersive Empathise*

This phase of the design process involves the work teams getting closer to the possible target audiences. To this end, some of the theoretical concepts of Human-Centred Design were introduced, as well as the power of Ludic Experiences as a means of fostering empathy.



### **ANgame Collab**

The groups created an interview script for potential users and applied it to the ANgame Collab cards in order to gamify the interview process. The groups were keen to gather as much information as possible about the context and what the interviewees think and want.



## Affinity Mapping

This activity made it possible to organise the results of the interviews and to align the members of the working groups. The participants had the opportunity to reflect together with the interviewees on their needs and expectations. These were moments of great empathy and learning, which brought several insights for the next activity.



## Personas

The creation of personas is an activity that compiles the findings of interviews into a fictional person representative of the target audience. This exercise made it possible for the participants to converge on the needs and expectations of users, which will serve as a guide for the creation of products and/or services. The groups created 5 primary personas and 2 secondary persona.

### KARI | 42 yo | Married | Children in primary school | Just finished treatment

#### Motivations:

- *Share experience: be a part of the “cancer family”*
- *Meaningful activity*
- *Healthy in the best way she can*
- *Being there for family (especially children)*

#### Goals:

- *Live as best as possible with cancer diagnosis*
- *Prioritize what is important to yourself and family*
- *Trust the doctors and treatment*
- *Process diagnose / experience by sharing*

#### Pain Points:

- *Do not know how long life will be*
- *Know that she can get her old life back*
- *Feels bad without working*
- *Can't help her nor study because she is tortured*
- *Worried husband won't be attracted to her anymore*

### LISA | 50 yo | Teacher | Breast Cancer Patient | Married | 2 children

#### Motivations:

- *Survival / Quality of life*
- *No / Small border on family*
- *“Road back again”*

#### Goals:

- *Take part in recovery*
- *Physical health: sketching, wallening, etc.*
- *Mental health: social integration*
- *Spent a lot of time with family / friends*
- *Return to work*
- *Joy in small things*

#### Pain Points:

- *Lack of control*
- *Fatigue / Pain*
- *Unreliable doctor / Unemphatic health workers*
- *Lack of support / Understanding*
- *Fear of stopping the treatment / Breast cancer coming back*

### ANIKKA | 52 yo | Doctor Oncologist

#### Motivation:

- *Provide good life quality*
- *Treat patients*

#### Goals:

- *To be a good doctor*
- *To provide good serviced and advice*
- *To be empathic*

#### Pain Points:

- *Time issues*
- *Responsibilities*
- *Overload*
- *Unforeseen circumstances or emergencies*
- *Lack of training on how to deal with patients emotions*

- *Balance between professional detachment and personal empathy*
- *Distance from the patient*
- *Lack of emotional support*
- *Not enough work-life balance*

### JOHN DO | 63 yo | Married

*John is an engineer; a problem-solver; whatever he sees something broken he is the to fix it. Since to few months John was diagnosed with cancer of prostate.*

#### Feelings:

- *He is feeling incapable now*
- *Has a felling of not being whole*
- *Feels lonely*
- *Does not feel capable anymore*
- *Feels ashamed*

#### Behaviours:

- *stands alone almost of time*
- *sits in the corner*

#### Goals:

- *Wants to be cured*
- *Wants to be fixed*

#### Pain Points:

- *Has no felling of sense / feels frustrated about his situation*
- *Has nobody who understand him*
- *Has nobody he trusts to talk to*

### KATIA | 67 yo | Cancer patient under treatment

#### Motivations:

- *Comfort seeking*
- *Being surrounded with strong and kind people that would not have sorrow after hearing her story*
- *Allows vulnerability*
- *Have a sense of belonging*

#### Goals:

- *Getting out of the sofa*
- *Do new activities and be socially active*
- *Create a second strong family*

#### Pain Points:

- *Family awareness on the condition*
- *Need of emotional coping*
- *Lack of awareness concerning the center (volunteers and users)*

FLORENCE NIGHTGATE | 68 yo | Single | Has cancer

*Florence not a nurse, has always engaged with a lot of people in difficult situations. Has a very good understanding of people.*

Personality:

- *open minded*
- *talkative*
- *nice person*
- *positive energy*

Motivations:

- *Peers*
- *Positive feedback*

Behaviours:

- *good listener*
- *approaches people*
- *helps other people*
- *sociable*

Goals:

- *Swimming*
- *Feel good*
- *Happy life*

Pain Points:

- *Feel pain*
- *Feel misunderstood*
- *Guilty*
- *Sadness of the family gives here the felling that the needs to die*

MORTEN | 40 yo | Patient

Motivations:

- *To not be defined by de disease*
- *To hold on to the person you were before sick*
- *To maintain positivity in the family*
- *To meet people with the same experience*
- *Good mental and physical health after and during*


Goals:

- *Be informed*
- *Have a good quality of life*
- *Get good treatment*
- *Feel seen, protect and safe*
- *Be treat with dignity and respect*
- *Continuity of care*
- *To be open and keep good relations with family, have patience*

Pain Points:

- *Lack of information*
- *Sense of insecurity*
- *Anxiety*
- *Feeling that life is unfair*
- *Explain his children what is happening so they understand (simple but clear way)*
- *Lack of empathy from healthcare professionals*
- *Long waiting times (esp. mental health support)*

**Kate**  
49 years old  
She/her



**Motivations:**

- cancer patient under treat
- being surrounded with strong and kind people that would not make her feel alone
- allows vulnerability
- love a sense of belonging

**Objectives:**

- getting out of the sofa to do new activities and be socially active
- create a good strong family

**Pain points:**

- family awareness on the condition
- lack of emotional coping
- lack of awareness concerning the cancer (volunteers + users)

**Personal Profile, 50, £150, Teacher, breast cancer patient - treatment**

**Motivation**

- Survival / Quality of life
- w/ small border on family
- head back again

**Goals**

- take part in recovery
- physical health - stability, walking a
- mental health - social integration
- spend a lot of time with family/friends
- return to work
- secondary losses (high goals, etc)

**Pain Points / Frustrations**


- Lack of control
- fatigue / pain
- un-reliable doctors / un-empathetic health workers
- lack of support / knowledge
- poor of shopping baskets / cancer coming back



**Motivation Goals**

**Person**

**Draw/Label person**



**Name: Keri**

43 years old, married, children in primary school, out of work, personality: positive, proactive, caring / has lots of empathy, jealous + communicative, proud, self pity

**Goals - live as best as possible with cancer diagnosis**

- prioritize what's important to yourself and family
- trust the doctor and treatment
- process a spouse's absence by sharing

**Motivation**

- share experience, become be a part of the "cancer warrior" family
- meaningful activity
- help healthy in the best way she can
- being there for family (especially children)

**Pain point**

- Do not know how long life will be
- know that she can't get her old life back
- All out - hard being
- can't help her in a study, when she is in bed
- worried husband can't be changed in his attitude

**Fluence Nightgale F, 68**

Fluence is a nurse, has always engaged with a lot of people in very different situations. Has a very good understanding of people, had cancer.

**Goals**

- surviving
- feel good
- happy life

**Feelings**

- feel pain
- feel overwhelmed
- quit

**Personality**

- open minded
- talkative
- nice person
- positive energy

**Behaviours**

- a speaker people
- good listener
- helps other people
- social life

**John 4 68, M, married**

He is a carpenter, a pro been there, whenever he was anything before he is there to fix it. Once a few months John can't diagnosed with cancer of the prostate.

**Feelings**

- has no feeling of being a man
- feels like a child
- does not feel capable anymore
- feels ashamed

**Behaviours**

- wants to feel good
- wants to be fixed

**PERSONA 1 - DOCTOR (oncologist)**

**Annikka, 52 y/o**

**Goals:**

- To be a good doctor
- To provide good advice + advice
- To be empathic

**Motivation**

- Provide good life quality
- Treat patients

**Pain points**

- Time issues
- Responsibilities
- Overload
- Unforeseen circumstances / emergencies
- Lack of training on how to deal w/ patients emotions
- balance b/w professional and personal empathy
- distance from the patient
- lack of emotional support
- not enough work - life balance

**PERSONA 2 - PATIENT**

**Morten, 40 y/o**

**Goals**

- be informed
- have a good quality of life
- get good treatment
- feel seen, protected, safe
- be treated w/ dignity and respect
- continuity of care
- to be open and keep good relations w/ family, patience

**Motivations**

- to not be defined by the disease
- to hold on to the person you were before being sick
- to maintain positivity in the family
- to meet people w/ the same experience
- good mental and physical health after and during

**Pain points**

- lack of information
- sense of insecurity
- anxiety
- feeling that life is unfair
- feeling this children what is happening to they understand (simple but clear way)
- lack of empathic empathy from healthcare professionals
- long waiting times (esp mental health support)

## Gamified Brainwriting

The last activity of the day was idea generation. To do this, we used the Brainwriting technique in which each participant individually makes a list of ideas that will be presented and debated with their group members the following day.







# Idea Camp | Day 3

## *Developing Ideas*

### Ideation Phase

At this phase, the groups have to come up with ideas, select the best ones and then create a prototype. To do this, various methods were applied, which we describe in section 2. As a way of promoting the participants' knowledge of design, some theoretical concepts were presented about the role of Participatory Design and how the prototyping phase can also be a chance to involve users in the design process.



### Warm Up | Paper Plane

After the welcome and presentation of the schedule of activities. We began the final day of the workshop with a warm-up. This ludic activity consists of creating a paper aeroplane as a group.



## Bold Idea

Once the ideas had been created, they were discussed and evaluated in more depth using the Bold Idea exercise. At the end of the exercise, the participants shared the 3 most relevant ideas discussed by the group:

### Group 1

- Create a spot for group activities for patients with cancer of prostate.
- Seminars and workshops with health professionals and patients.
- App for patients with mood track, assessments, and fitness routines.

### Group 2

- Board game to help patients organise their routines after diagnosis.
- Podcast for patients and doctors.
- App for patients with milestones, news, and social network.

### Group 3

- Interactive game for kids to better understand the relative diagnosis.
- Integrate platform for doctors and patients.
- Digital Community for patients to share advice, socialize, etc.

### Group 4

- Digital platform to integrate all information about the treatment.
- Welcome program for new patients.
- Family awareness app.

### Group 5

- Health training program for patients.
- App for patients and doctors with integrate activities.
- Digital platform to share experiences, strategies, and contacts.

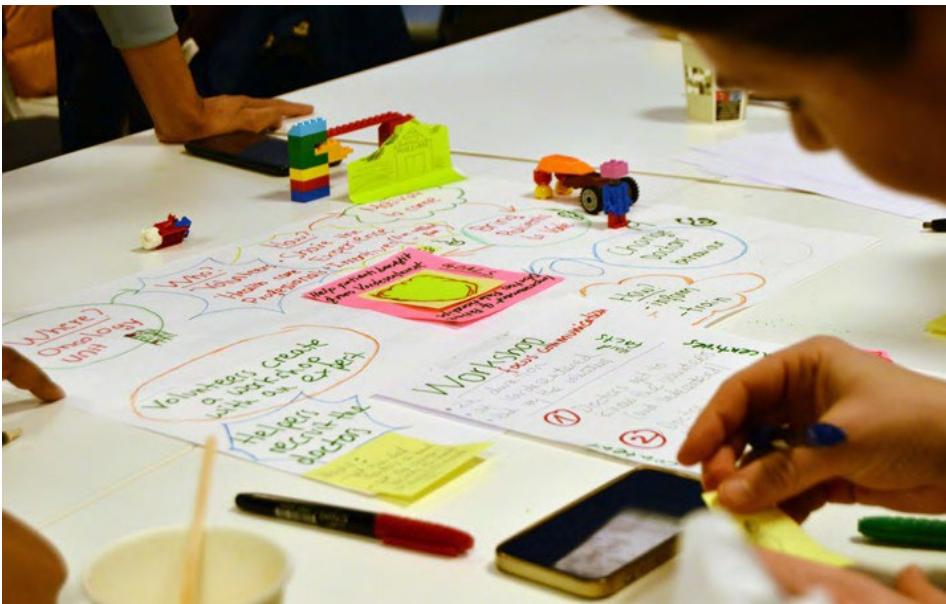
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## Prototyping

In this “bringing ideas to life” exercise, the groups had the opportunity to prototype. According to each artefact the group chose to develop, they had a type of tool to support their creation.





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## Final Results

Groups were guided throughout the prototyping process by the team. In addition, each group had to prepare for the creation of a pitch to be recorded on video. In this pitch they had to present the persona and prototype they had developed.



## GROUP 1

*Onvarde Project* aims to be a bridge between Vardesenteret and the hospital.

Patients are invited to take part in a series of activities with other patients, healthcare professionals and volunteers.

This creates a support network for patients, bringing health professionals closer to people.



[Watch video](#)



095

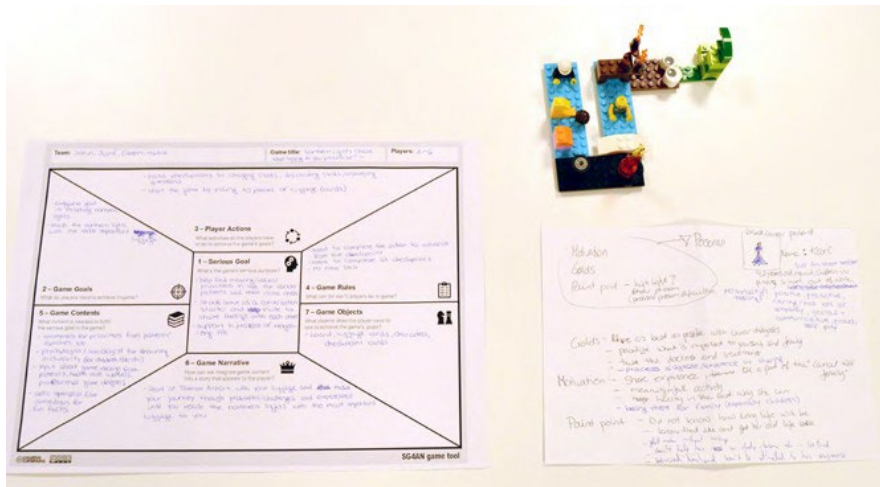
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## GROUP 2

*Northern Lights Chase* is a board game which aims to help patients organise and prioritise their activities after receiving their diagnosis. The game has a narrative that involves players in an adventure in which they have to make decisions about the baggage they are carrying and what they need to leave behind.



[Watch video](#)



## GROUP 3

*On Board Welcome Experience* is a programme of activities that aims to help new patients who are starting their treatment and need support from Vardesenteret and who are also looking for information.



[Watch video](#)



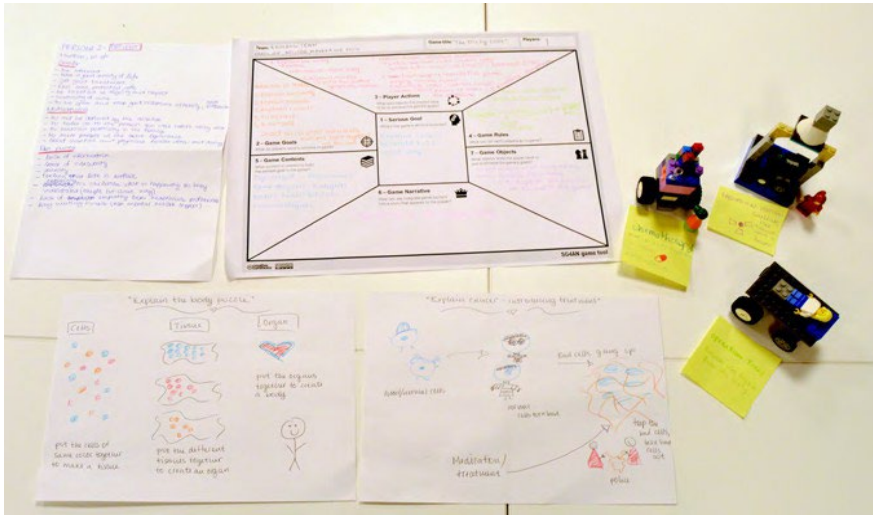


## GROUP 4

*The tricky Cells* is a digital game for mobile phones that aims to help children better understand the cancer treatment their relative is undergoing. In addition, the game helps raise children's awareness of the disease and offers comfort and support.



[Watch video](#)



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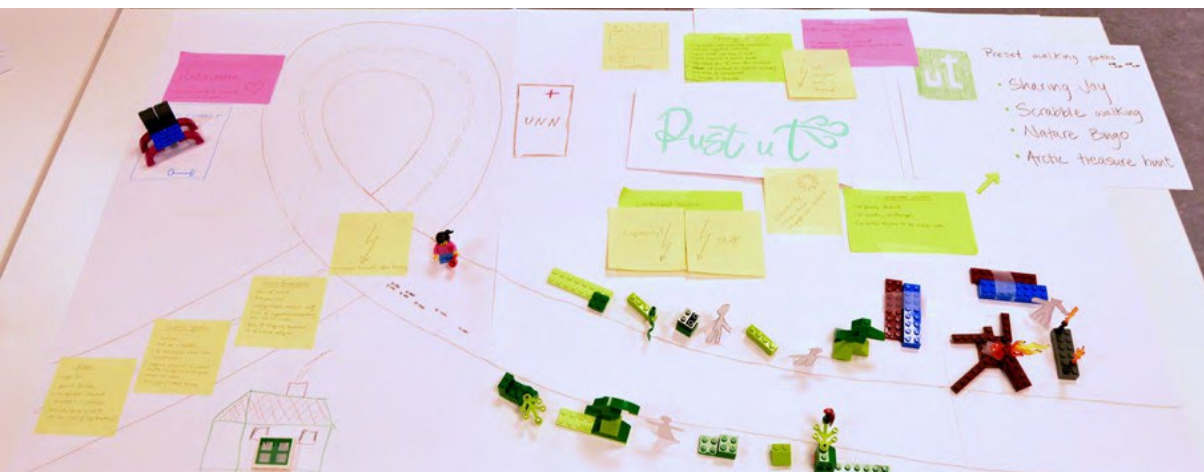
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## GROUP 5

*Pust ut* is a physical activity programme for the patient. This programme has 2 phases, the first of which is to accompany and support physical activities with professionals and the second phase consists of group activities in the form of an Olympics.



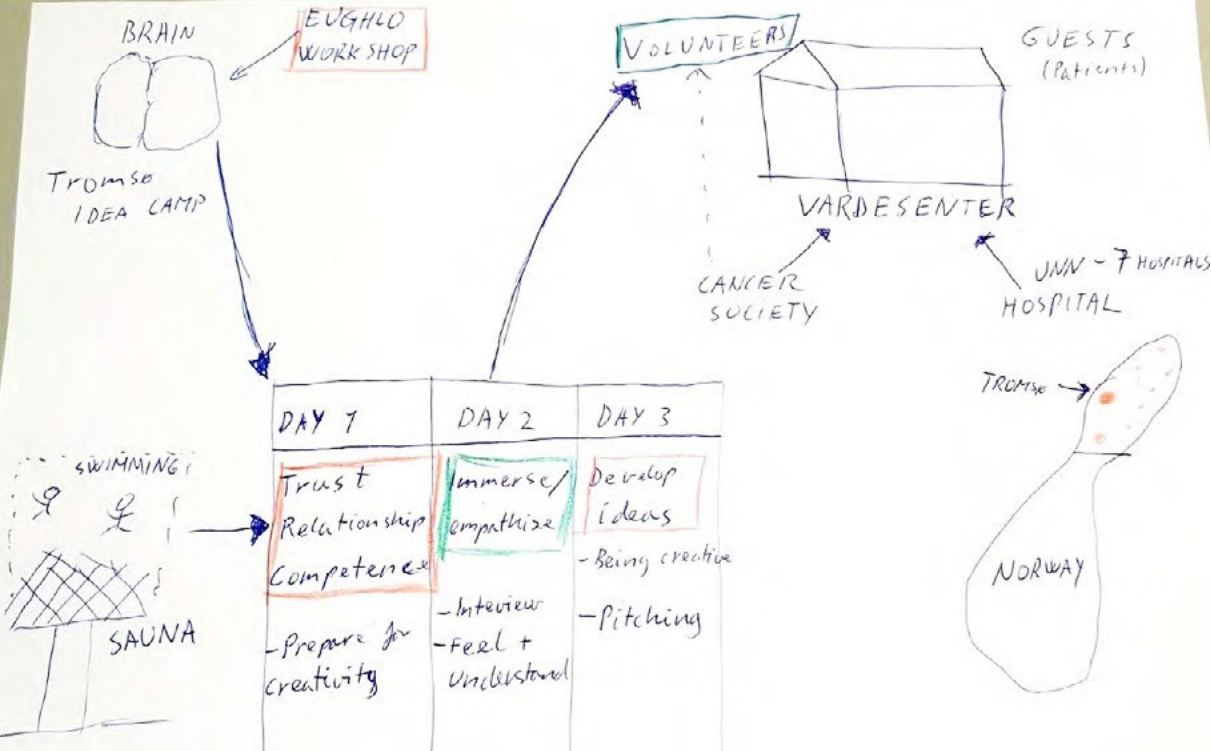
[Watch video](#)





# Lessons Learned





## About Idea Camp

### *Building empathy to create design innovation in health*

The goal of the EUGLOH Tromsø Idea Camp is to create ideas through co-creation using human centered design within the theme “What are challenges as cancer patients?”

The workshop has been developed as a collaboration between cancer researchers at University in Tromsø and researchers in human centered design in health and wellbeing at University of Porto.

Through this workshop our common goals are

to equip all participants with practical insights and experiences in human centered design methods which gives you knowledge into action, learn how to induce creativity and problem solving in a structured way, and get experience in communication and collaboration with people bringing in diverse background of education.

The course is therefore a workshop in learning how new ideas can be created by using

structured processes.

From University of Porto we will use studies on anorexia nervosa as a case to describe how human centered design can be used to study this disease.

A similar structure will be performed at the physical workshop in Tromsø, although here we will change into cancer disease. The designers of this workshop will guide the participants through a three-day workshop in which you will go

through several phases to develop ideas related to challenges of cancer patients.

We will use a framework of developing ideas called first principles design in which we structure the process of creating new ideas into different phases: empathize, ideation, prototyping and test.

You need to understand the patients and their needs, which is done by empathizing with volunteers at Vardesenteret.

The Vardesenter is a meeting place for cancer patients and their next of kin. The volunteers are helping out at Vardesenteret and are people that interact with the guests at the center – which are either cancer patients, survivors of cancer or their next of kin.

In the in-person workshop in Tromsø we will use the following 3-day plan:

*The first day:* we will focus on preparations for creativity by building trust and relationships between members of the groups, and by training participants

of the workshop to give them competence in techniques for active listening, to hear what people are really saying.

*The second day:* is dedicated for empathizing with volunteers at Vardesenteret, in which the goal is to understand and find the needs of cancer patients based on interaction with informants at the Vardesenteret. This is because you need to understand the people you want to design a solution for when we are working human centered based.

Then the groups will define what is most important from interactions with informants at Vardesenteret, and this can be done by different structured methods, for example, affinity mapping and thereafter formulate point of view (POV) for focus of a certain user or patient.

*The third day:* will focus on ideating, in which the groups will perform brainstorming activities, followed by prototyping the ideas. This can be performed in different ways which you will be guided by the facilitators.

Here, ideas will be developed through co-creation within the groups, and then we end the workshop by the groups pitching their ideas. At the end of that session, we will wrap up by a common discussion of what you have learned and what you might use this experience for when you come home.

Expected outcome of the workshop:

- Participants have been equipped with human centered ludic methodologies, fostered innovative thinking, learned problem-solving using first principles design, and generated new ideas.

- Volunteers at Vardesenteret has shared their experience in a way that gave rise to detecting unmet needs for cancer patients.

- Participants and teachers have developed more experience in collaborating with people with different educational background, which is an important factor for integrating drivers of innovation.



# Acknowledgments

EUGLOH

UiT

University of Porto

ID+ Research Institute

Bror-Magnus S. Strand | Co-Manager | EUGLOH

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