Brainvillage

– Giocando con la mente –

«Bando Evoluzioni-Transizione digitale nell'economia sociale – 1a edizione»

Interactive
Health & Social Care

The project

2021 - today

Brainvillage was launched in the second half of 2021 to meet the needs of people with cognitive disabilities, who were isolated due to the SARS-CoV-2 pandemic. Together with a team composed of psychiatrists, motor science experts, a psychologist specialized in gaming, and an innovation advisor from the company Drimlab SC, Interactive's developed an Applied Videogame that supports basic cognitive functions, while also encouraging movement.

The core concept is to create a playful ludic-therapeutic experience: a free, unstructured, rule-free activity that differs from most "game-based" projects for cognitive rehabilitation and enhancement, which typically involve games structured by strict rules.

The target users of the prototype are users (pre-adolescents, adolescents, and young adults) presenting cognitive deficits affecting attentional functions. Therefore, the chosen approach was to create a game environment containing cognitive stimuli to strengthen users' abilities, as well as graphic stimuli aimed at promoting well-being for individuals with neuro-related issues as well as neurotypical individuals.

Through "point-and-click" mechanics, users can perform attention-related tasks that will help develop this cognitive capacity, guiding their exploration of the game environment..

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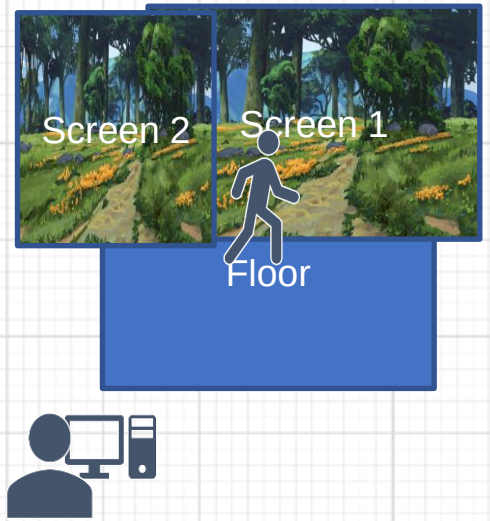
At a glance:

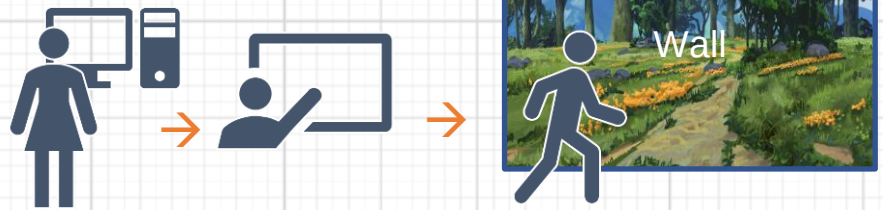
We envisioned BrainVillage as a **theme park** with various gaming and **exploration experiences** (1), accessible in two different ways: **immersive** (2) and "**plug & play**" (3).

1.



2.

Operator, computer, Media System and motion controller



3.

User, computer, controller

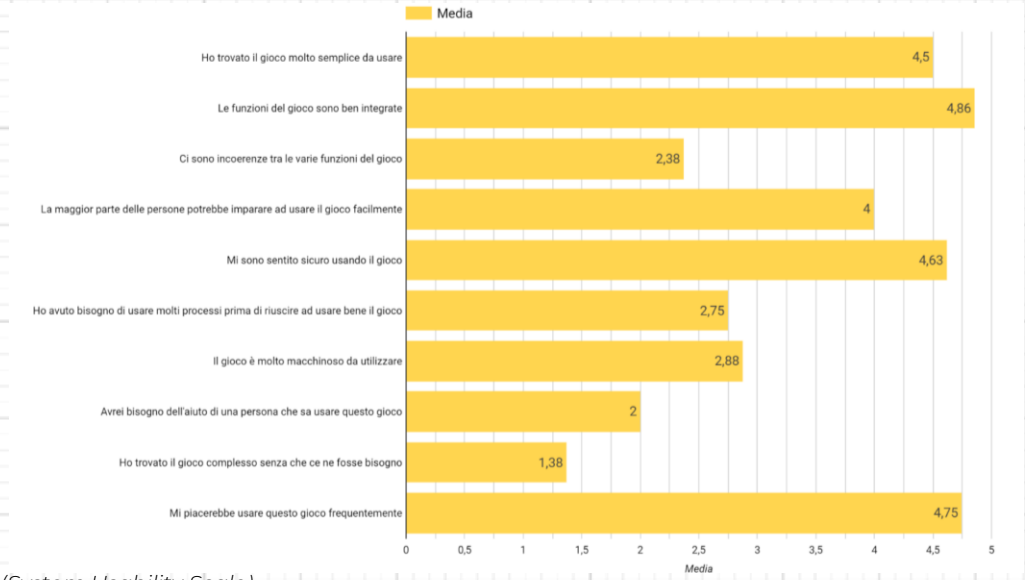
User, computer touchscreen

User, Variable-size touch projection

WP 2 - In-House Prototyping and Testing

Data collection and analysis

The total number of users involved in the experiment was 8 male participants with an average age of 28. The experiment was conducted in immersive mode, with a projection on the front wall, alternating between gameplay sessions and questionnaires. Among the measured data were: level completion time and the number of interactions, categorized by type (exploration, material collection, movement between environments, etc.). The performance was in line with the expectations set during the design phase of the experience, but it suggested revising some elements related to navigation within the game world to avoid distractions.



(System Usability Scale)
n=8

Positive Aspects:

- Fun
- Engaging graphics
- Pleasant visual experience
- Well-executed immersive experience
- Overall enjoyment of the game

Areas for Improvement:

- Lack of a map for better orientation within the game
- Lack of variety: suggested introduction of other landscapes and mini-games
- Maintaining long-term interest

WP 3 – Technological Procurement, and implementation

Immersive gaming room setup

The prototype version of the video game was implemented using **4.0 technology** (videomapping, IoT, sensors, etc.) in **two rooms of about 20 m2** each, located in Turin and Luserna San Giovanni (TO).

The rooms are available to the cooperative's users, totaling 77 individuals, assisted by approximately 95 operators, and also serve as a **high-end multimedia space** where movies can be watched and video games played on consoles (PS5), or where lights and projectors are used to create a relaxing environment (Snoezelen Room).

Brainvillage 2.0 – next steps

- Soecific **training** on the use of gaming functionalities
- Additional **experimental sessions** with end users
- Development of **video game dedicated to Autism Spectrum Disorders** (ASD), in collaboration with the University of Pavia

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