

# MRT - SPECIFICATION AND USE OF A SERIOUS-GAME TO REHABILITATE PATIENTS WITH DYSEXECUTIVE SYNDROME

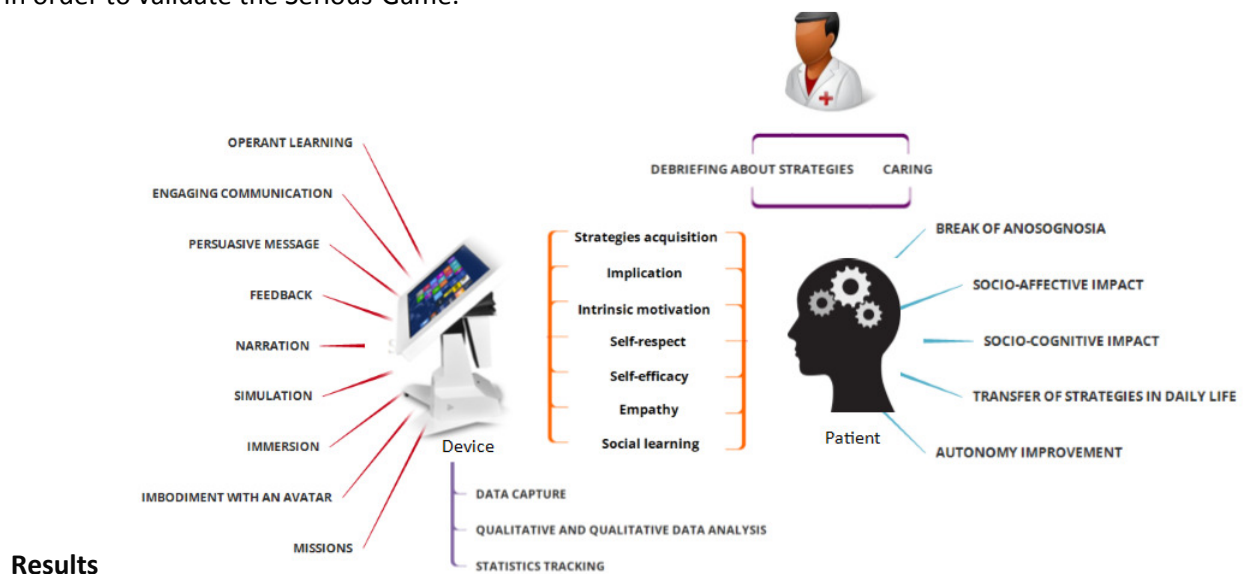
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**Introduction:** A dysexecutive syndrome can be observed after a cerebrovascular accident, a head injury with frontal lobe damage or degenerative diseases, amongst other things. Executive troubles have cognitive, emotional and behavioural consequences. Patients lose their autonomy and are unable to recognize their disorders (anosognosia). Rehabilitation specialists are looking for a new tool to help the patients to recover their daily-life.

**Purpose:** The aim of the PhD thesis is to specify and develop a Serious-Game to immerse patients in a virtual world with an elaborate scenario with various challenges. This work is then divided in three stakes. Firstly, to break the anosognosia and intrinsically motivate patients to implicate them in their rehabilitation. Secondly, to enable them to reach a sufficient metacognition level to develop their own strategy and select the most relevant in each context. Finally, to facilitate these strategies transfer in daily-life.

**Method:** Played on an easy-to-use interactive table, the Serious-Game will transfer patients at the heart of their rehabilitation. Observations, interviews and meetings to coordinate rehabilitation doctors, occupational therapists, neuro-psychologists, engineers and information & communication scientists allowed pertinent and extensive specification of the Serious-Game before development and clinical trials. Collected data will allow qualitative and quantitative analyses. Standardized psychometric tests will be conducted before the study, after the two-months rehabilitation training and three months later in order to validate the Serious-Game.



## Results

*Figure: Device specifications and expected impact*

We expect it to improve the rehabilitation process in accordance with the 3 stakes presented above and to enable the patients to have a sufficient autonomy to go back home or to work if concerned (*figure*).

**Conclusion:** This multidisciplinary study presents high stakes for the future of patients with dysexecutive syndrome.