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IO1 Cognitive skills based training scheme for seniors

Tablet-Based Cognitive Gaming Platform for seniors



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Induction training program

Aims and objectives



The project aims to develop a **tablet-based cognitive gaming platform for older people to use either individually or in groups**. It will encourage the **use of multiple cognitive strategies** and difficulty of games will increase as performance improves.

A tablet-based gaming platform will be developed **to deliver cognitive stimulation in the form of a training program**, which aims to increase general cognitive and social functions.

The developed games and training program will enable older people **to experience group activities** using games running on a tablet and designed to enhance memory, attention, reasoning & planning, processing speed and sequential processing skills.

Challenges addressed



Research conducted by the project across all partner countries showed that there is no formal and consistent adult education framework in partner countries and adult education is basically included in the general education system of each country. Moreover, research findings underlined that already existing cognitive training entities are more likely private or driven by NGOs and do not have proper governmental or European support.

The survey showed that regardless of country, age or sex, there is a real need for improving cognitive and social function among older people. It concerns not only people already facing difficulties with cognitive skills but it also caters for prevention means.

Explanation of the blended approach



Nowadays, it is more and more common that seniors are familiar with using the internet and smartphones; it seems that the most suitable training delivery method would be a blended one, which combines both ***face-to-face*** and ***online*** training.

The two delivery methods work perfectly well together, as the face-to-face session could allow learners to be fully supported to work with new technologies.

List of general competences for trainer/carer



The role of the trainer/carer is to help older people by explaining the objectives of the project and of the training content, by using the games and by providing them constant human and technical support.

List of General Competences

- Communication skills
- Basic IT skills
- Relationships / interpersonal skills
- Teaching and pedagogical skills
- Dealing with diversity of profiles
- Humour and patience
- Problem solving
- Intercultural skills

Recommendations for trainers/carers



Teaching Principles

- Do not overload learners with theoretical content and presentations
- Allow ample opportunities for learners to ask questions and to provide feedback
- Be flexible
- Respect the past experiences of the learners
- Practice active listening
- Speak clearly
- Keep the motivation high
- Summarise and recap at the end of each session



Training scheme



The present document is a **handbook** dedicated to trainers and carers in order to successfully implement the games with older people and help them to use the games independently.

Each game contains:

- 1) Introduction** gathering presentation and objectives of the game, which training needs it addresses, what are the needed skills (e.g., required basic IT skills, no skills required, etc.)
- 2) Toolkit:** required material (e.g., ICT device, Internet connection, stylus, etc.), rules of the game with pictures or videos, recommendations on duration, assessment methods.

Preparatory steps required



- 1) **Each trainer/carer should be familiar with the games** and be able to clearly explain the objectives and rules of the games
- 2) Make sure that there are **available devices** (smartphones and tablets) and reliable Internet connection
- 3) Set-up a proper **learning environment** for concentration
- 4) **Prepare ice-breaking questions** to install trust and good mood between participant(s)
- 5) **Preparing introductory game:** not necessarily an online game; each trainer is up to choose the best game according to the audience (ex: quiz on general knowledge)
- 6) **Prepare a description and explanation of the game**

Action Plan



Before the training:

1. Preparation of the training's programme and content according to the chosen cognitive games' topic
2. Recruitment of the participants
3. Logistical preparation of the training: ICT requirements, location, catering

During the training:

1. Presentation of the project and training's objectives (10 min)
2. Ice-breaking activities//questions: to built a trust and good relation with trainer/carer, plus getting to know each other (15 min)
3. Introductory game (20 min)
4. Short break (15 min)
5. Description and explanation of the cognitive games (according to the chosen topic): rules of the games with a quick demo including pictures or videos, explanation of the assessment (10 min)
6. Training (30 min)
7. Recommendations on the duration (5 min)
8. Conclusion, general discussion, reflection and feedback (15 min)



Templates of games

Reasoning and planning games



Introduction - Analysis of current 2D/3D apps

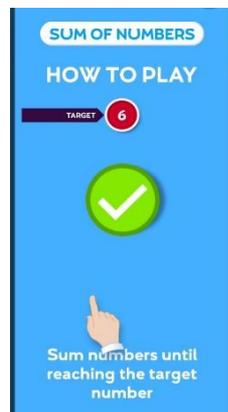
- **Name of the game:** *Sum of numbers*
- **Main objectives:** Improving processes of logic, strategic planning, problem solving and deductive reasoning and calculation skills
- **Training needs addressed:** helping with solving simple problems issues, reinforcing speed calculation
- **Needed skills:** no particular skills needed, just resolving simple maths problems in their head sequentially

Reasoning and planning games



Toolkit

- **Materials needed** : smartphone or tablet with an Android system, Internet connection
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) Add up numbers until the target number is reached
 - 2) The target number to reach appears on the top of the screen and a selection of numbers are available below. You have to click on numbers which will indicate the sum of the target number above. Those numbers will disappear and the target number will change afterwards. This task will be repeated until all numbers disappear.
 - 3) The level of difficulty increases at each level



Reasoning and planning games



Toolkit

- **Recommendations on duration:** at least 3 times per week, during a 2 month period. Each session should last 15-20 minutes.
- **Assessment:** The user will be assessed by the levels in the game. The game will start with the easiest first level and as long as the user passes this level, more levels will be unlocked. Higher level will correspond to a higher cognitive ability.

Reasoning and planning games



Introduction - Analysis of current 2D/3D apps

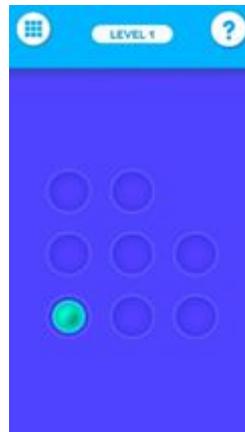
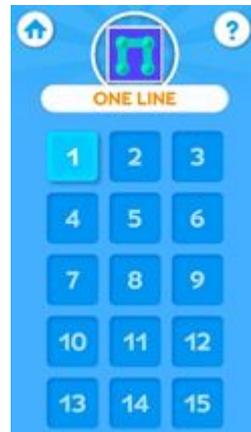
- **Name of the game:** *One line*
- **Main objectives:** training logic reasoning and strategic planning and defining an appropriate strategy to reach the solution.
- **Training needs addressed:** helping with planning things and moves to define a strategy to reach a desired outcome
- **Needed skills:** being able to keep the finger on the screen for a while

Reasoning and planning games



Toolkit

- **Materials needed** : smartphone or tablet with an Android system, Internet connection
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) Fill in all of the blocks by drawing only One line.
 - 2) You will have to mark all the block with one line with your finger on a touch screen.
 - 3) The idea is to start from one point and keep slipping the line through all the points without interrupting or going twice thorough the same point
 - 4) You will be starting from the Level 1 and since you move forward with first level, more levels will be unlocked.



Reasoning and planning games



Toolkit

- **Recommendations on duration:** at least 3 times per week, during a 2-month period. Each session should last 15-20 minutes.
- **Assessment:** The user will be assessed by the levels in the game. The game will start with the easiest first level and as long as the user passes this level, more levels will be unlocked. Higher level will correspond to a higher cognitive ability.

Reasoning and planning games



Introduction - Analysis of current 2D/3D apps

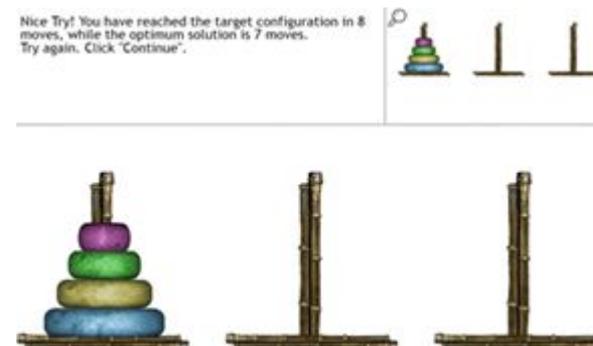
- **Name of the game:** *Tower of Rings*
- **Main objectives:** strengthening problem-solving capacities by making strategic moves and calculating the right moves to reach the solution in the shortest possible time
- **Training needs addressed:** helping with problem-solving and logical planning
- **Needed skills:** no particular skills needed

Reasoning and planning games



Toolkit

- **Materials needed** : smartphone or tablet with an Android system, Internet connection
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) Rebuild the tower of rings by making strategic moves
 - 2) Configure colored rings on a series of pegs in order to match a target. Possibility to move the top-most ring on each peg to another peg, but you can only move one ring at a time and you can never put a larger ring on top of a smaller ring
 - 3) It should be completed in a certain number of moves. You have to play it in a defined time within a defined number of attempts to achieve the solution.



Reasoning and planning games



Toolkit

- **Recommendations on duration:** at least 2 times per week, during a 2-month period. Each session should last 20 minutes.
- **Assessment:** The user is assessed through the limited time for reaching the solution and the number of attempts. Then, he/she could go to the next level.

Reasoning and planning games



Introduction - Analysis of current 2D/3D apps

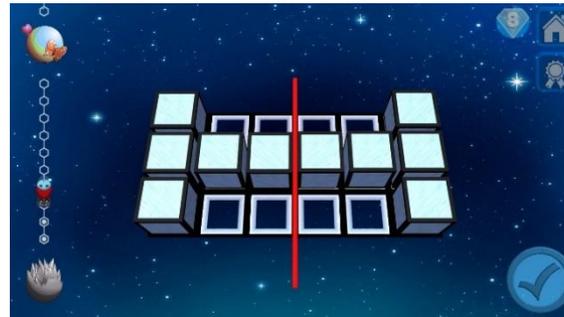
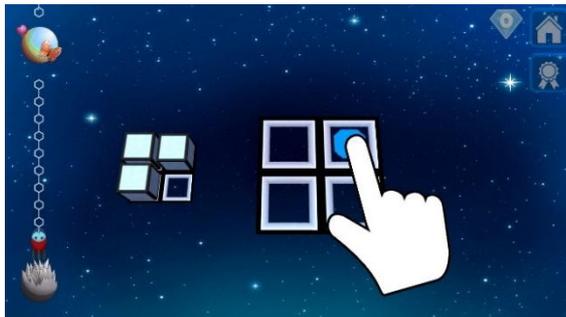
- **Name of the game:** *Piko's Cube*
- **Main objectives:** strengthening logic reasoning capacities by making strategic moves and reproducing the pattern with the less attempt as possible
- **Training needs addressed:** helping with logic reasoning and planning
- **Needed skills:** no particular skills needed

Reasoning and planning games



Toolkit

- **Materials needed** : smartphone or tablet with an Android system, Internet connection
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) Choose the language you prefer for your game and click on play
 - 2) There are two sides on the screen: figure already that is to be reproduced and the blank space where you should recreate the same figure with your cubes by touching the screen
 - 3) The patterns will get harder as you successfully advance with each figure
 - 4) Cubes will be shown in 3D version with several layers sometimes
 - 5) You will be starting from the Level 1 and since you move forward with first level, more levels will be unlocked.



Reasoning and planning games



Toolkit

- **Recommendations on duration:** at least 2 times per week, during a 2-month period. Each session should last 15 minutes.
- **Assessment:** The user is assessed through the stars shown after each level by his/her capacity to reach the solution and to use the less number of attempts. Then, he/she could go to the next level.

Reasoning and planning games



Implemented game in context of TBC4Seniors - Tablet-Based Cognitive Games for Seniors - 2018-1-TR01-KA204-058258: Puzzle Cubes

Introduction

- **Name of the game:** *Puzzle Cubes*
- **Main objectives:** strengthening logic thinking, reasoning capacities by planning the moves and reproducing the pattern from the left cube on the right cube in mirror
- **Training needs addressed:** helping with logic reasoning and planning
- **Needed skills:** no particular skills needed

Reasoning and planning games



Implemented game in context of TBC4Seniors - Tablet-Based Cognitive Games for Seniors - 2018-1-TR01-KA204-058258: Puzzle Cubes

Toolkit

- **Materials needed** : smartphone or tablet with an Android system, Internet connection
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) In this simple game, 2 patterns appear side by side on the screen.
 - 2) The one on the left is colored and has a pattern, the other one doesn't. By clicking on the pattern and cubes on the right, the idea is to mirror the pattern on the left.
 - 3) Once the pattern is reproduced successfully, the level gets harder and the pattern changes accordingly.

Reasoning and planning games



Implemented game in context of TBC4Seniors - Tablet-Based Cognitive Games for Seniors - 2018-1-TR01-KA204-058258: Puzzle Cubes

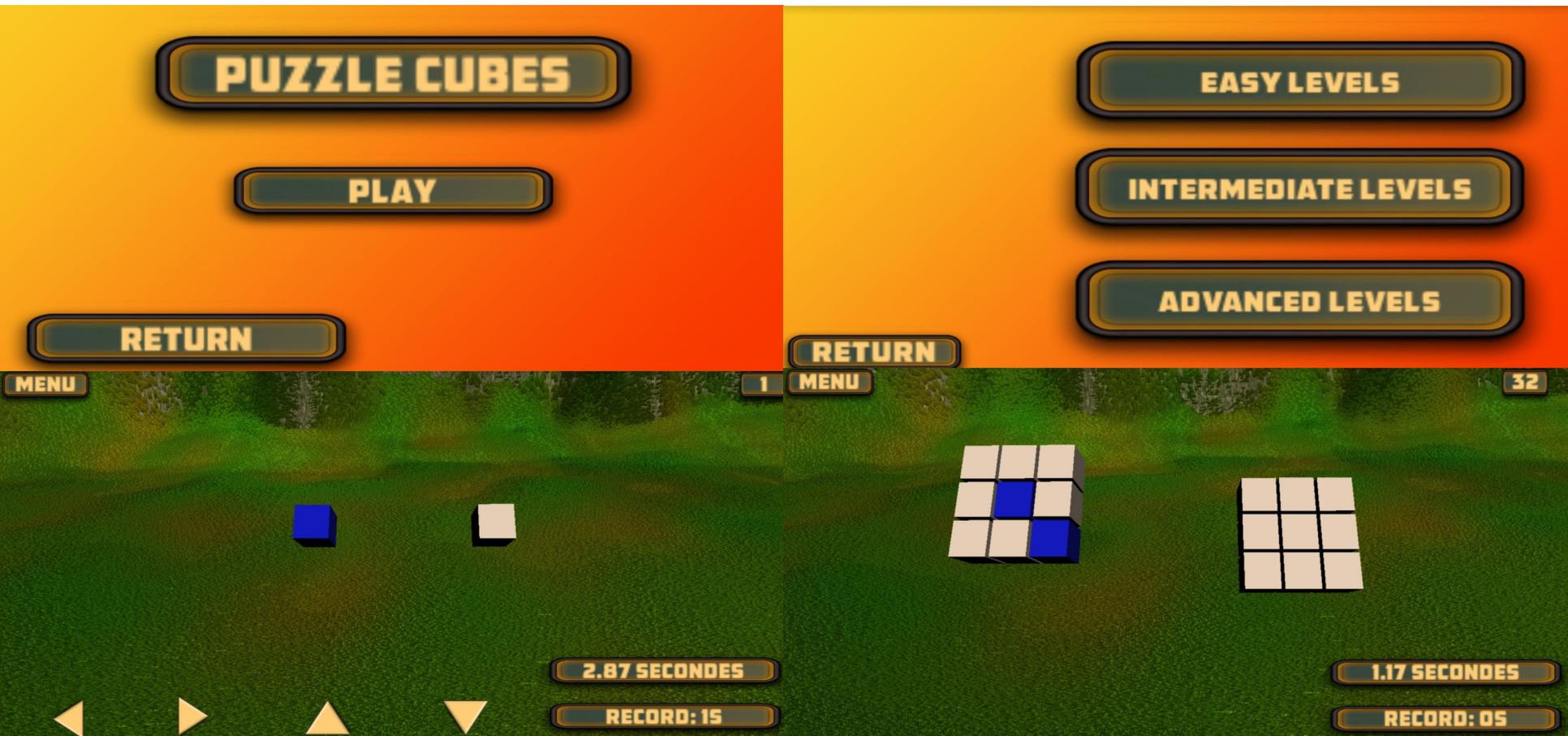
Toolkit

- **Recommendations on duration:** at least 2 times per week, during a 2-month period. Each session should last 15 minutes.
- **Assessment:** The user is assessed through the limited time for reaching the solution and the number of attempts. Then, he/she could go to the next level.

Reasoning and planning games



Implemented game in context of TBC4Seniors - Tablet-Based Cognitive Games for Seniors - 2018-1-TR01-KA204-058258: Puzzle Cubes



Reasoning and planning games



Innovation of the game implemented in context of TBC4Seniors - Tablet-Based Cognitive Games for Seniors - 2018-1-TR01-KA204-058258

- Contrast colors blue and grey to be differentiate easily by older persons
- Big cubes sizes for vision perception of seniors
- Difficulty level is integrated in the game and automatically changes once the previous level is completed successfully.
- Easy and efficient way to stimulate reasoning ability by planning each strategic move in order to achieve required result.
- Rotation background allow to see the picture and the volume of the cube from different perspective

Memory games



Introduction

- **Name of the game:** Tile Game
- **Main objectives:** This classic game focuses on the spatial memory (remembering the location of things). Main learning objectives are:
 - To improve memory and related cognitive capacity via mental exercises on a tablet game platform.
 - To enhance mnemonics through retrieval of semantic items and images.
 - To improve memory muscles through repetition and exercises.
 - To provide gradual and measurable improvement of the memory capacity with escalating difficulty levels of exercises.
 - To make sure even the people with lowest memory level can play and show progress, via offering simple and intuitive design and interface.
 - Improve concentration and attention to utilize memory better
 - To enhance power of recognition
 - Hence, enhance the overall cognitive skills to improve the quality of life of elderly person.

Attention games



Introduction

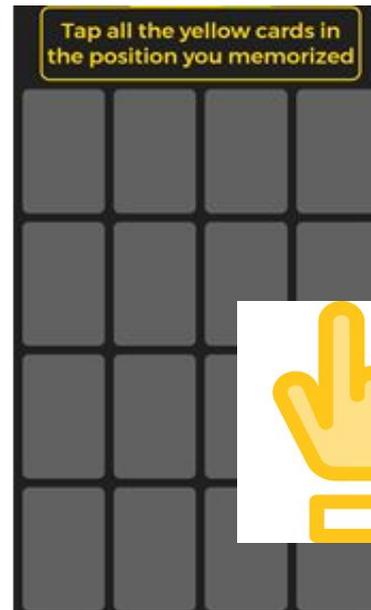
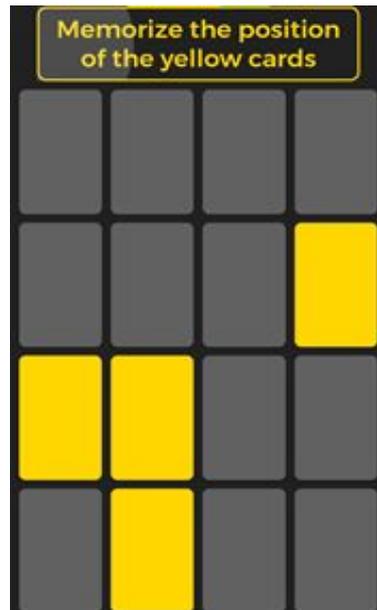
- **Training needs addressed:** Assistance on downloading game and demonstration of game tutorial may be required by player.
- **Needed skills:** Basic smart phone or tablet navigation a skills and knowledge. Familiarity with touch screen interfaces and interaction.



Attention games

Toolkit

- **Materials needed:** A tablet or smart phone with internet connection.
- **Rules on how to play the game with explanations and pictures or videos:** Tile game highlights a few tiles (generally around 20-40 % of the tiles), then asks which of those tiles were highlighted. It starts from 2x2 or 3x3 and builds up to higher number of boxes and more complex highlighted box variations. Difficulty is arranged by number of tiles highlighted and total number of tiles on screen.



Attention games



Toolkit

- Rules:

- Wait for boxes to be highlighted.
- Once they are highlighted player has a short period of time to record the location of boxes' to his/her memory.
- Highlights are removed and player need to click the previously highlighted boxes by recalling their location from their memory.
- If player fails, he/she repeats the game in the same difficulty level till he/she advances his/her memory.
- If player succeeds (by clicking right boxes without mistake) moves to a slightly more difficult game level to give challenge.

Attention games



Toolkit

- **Recommendations on duration:** At least 20 minutes a day, minimum 4 days a week for 4 weeks.
- **Assessment:** The player can assess himself/herself by the difficulty level in the game. The game will start with the easiest level and advance to more difficult and complex levels. Higher level will correspond to a higher memory efficiency. Player (or trainer) should record the highest difficulty level that player can achieve in first 20 minutes and compare it with the highest achieved level at the end of the designated period of time.

Memory games



Introduction

- **Name of the game:** Picture Matching
- **Main objectives:** This classic game focuses on the visual memory. Main learning objectives are:
 - To improve memory and related cognitive capacity via mental exercises on a tablet game platform.
 - To enhance mnemonics through retrieval of semantic items and images.
 - To improve memory muscles through repetition and exercises.
 - To provide gradual and measurable improvement of the memory capacity with escalating difficulty levels of exercises.
 - To make sure even the people with lowest memory level can play and show progress, via offering simple and intuitive design and interface.
 - Improve concentration and attention to utilize memory better
 - To enhance power of recognition
 - Hence, enhance the overall cognitive skills to improve the quality of life of elderly person.

Memory games



Introduction

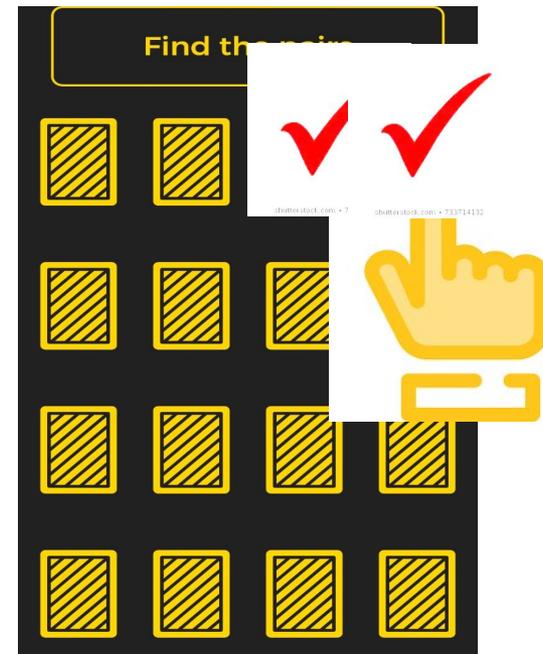
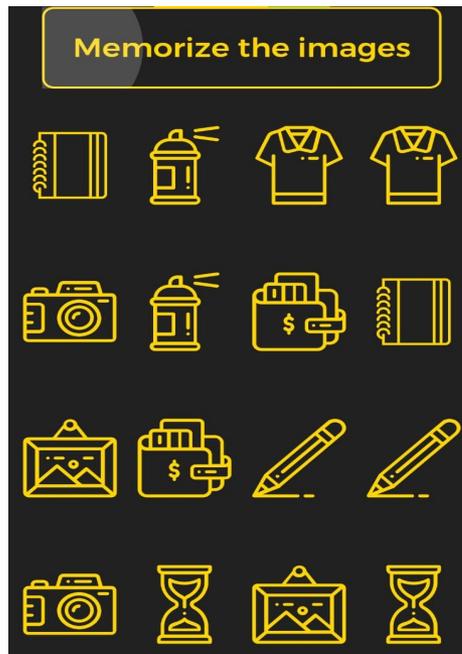
- **Training needs addressed:** Assistance on downloading game and demonstration of game tutorial may be required by player.
- **Needed skills:** Basic smart phone or tablet navigation a skills and knowledge. Familiarity with touch screen interfaces and interaction.



Memory games

Toolkit

- **Materials needed:** A tablet or smart phone with internet connection.
- **Rules on how to play the game with explanations and pictures or videos:** Similar to tiles game, but this time, all tiles are shown and each tile has an image, however each image is repeated twice. Once the tiles are closed, player will be required to guess which 2 tiles hides the same pair of pictures.



Memory games



Toolkit

- Rules:

- Try to memorize the location of each picture "pairs" on the screen.
- Once boxes are hidden, guess the location of each pair. You will have 2 clicks to find each pair.
- If player fails to find all pairs under certain number of trials, he/she repeats the game in the same difficulty level till he/she advances his/her memory.
- If player succeeds (by clicking right boxes within limited number of trials) moves to a slightly more difficult game level to give challenge.

Memory games



Toolkit

- **Recommendations on duration:** At least 20 minutes a day, minimum 4 days a week for 4 weeks.
- **Assessment:** The player can assess himself/herself by the difficulty level in the game. The game will start with the easiest level and advance to more difficult and complex levels. Higher level will correspond to a higher memory efficiency. Player (or trainer) should record the highest difficulty level that player can achieve in first 20 minutes and compare it with the highest achieved level at the end of the designated period of time.

Memory games



Introduction

- **Name of the game:** Repeat the Sequence
- **Main objectives:** This classic game focuses on the Episodic memory which involves remembering the incidental order of a series of events that comprise a specific experience. Main learning objectives are:
 - To improve memory and related cognitive capacity via mental exercises on a tablet game platform.
 - To enhance mnemonics through retrieval of semantic items and images.
 - To improve memory muscles through repetition and exercises.
 - To provide gradual and measurable improvement of the memory capacity with escalating difficulty levels of exercises.
 - To make sure even the people with lowest memory level can play and show progress, via offering simple and intuitive design and interface.
 - Improve concentration and attention to utilize memory better
 - To enhance power of recognition
 - Hence, enhance the overall cognitive skills to improve the quality of life of elderly person.

Memory games



Introduction

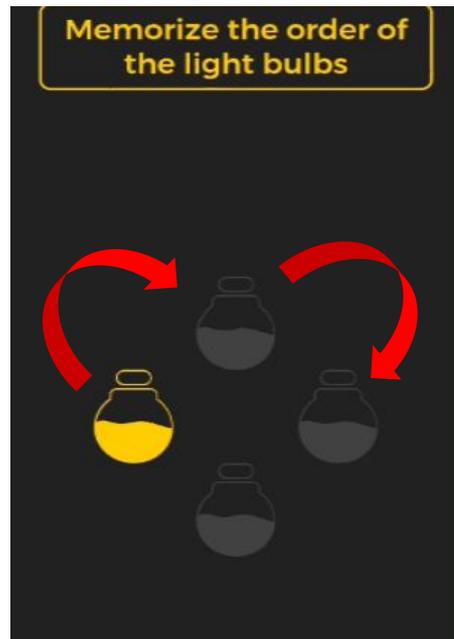
- **Training needs addressed:** Assistance on downloading game and demonstration of game tutorial may be required by player.
- **Needed skills:** Basic smart phone or tablet navigation a skills and knowledge. Familiarity with touch screen interfaces and interaction.



Attention games

Toolkit

- **Materials needed:** A tablet or smart phone with internet connection.
- **Rules on how to play the game with explanations and pictures or videos:** This game will focus on episodic memory to enhance remembering chronological order of things in daily life. Game will illuminate certain objects in confusing order and will ask user to repeat the sequence.



Attention games



Toolkit

- Rules:

- Group of objects will be illuminated on the screen in random order.
- Try to remember the order the sequence of illumination order of the objects.
- Then repeat the order by touching / clicking on the objects in the same sequence.
- If player fails, he/she repeats the game in the same difficulty level till he/she advances his/her memory.
- If player succeeds moves to a slightly more difficult game level to give challenge.

Attention games



Toolkit

- **Recommendations on duration:** At least 20 minutes a day, minimum 4 days a week for 4 weeks.
- **Assessment:** The player can assess himself/herself by the difficulty level in the game. The game will start with the easiest level and advance to more difficult and complex levels. Higher level will correspond to a higher memory efficiency. Player (or trainer) should record the highest difficulty level that player can achieve in first 20 minutes and compare it with the highest achieved level at the end of the designated period of time.

Attention games



Introduction

- **Name of the game:** Train of Thought
- **Main objectives:** Train of Thought is a game design to test and put in practice the ability to process multiple streams of information, one must guide the train to the same color station, multiple trains are coming also coming one after the other so one must plan ahead the routes that the trains should take and stay alert at the colors of the trains.

Attention games



- **Training needs addressed:** Attention, the ability to process multiple streams of information
- **Needed skills:** Basic smart phone or tablet navigation a skills and knowledge. Familiarity with touch screen interfaces and interaction.

Attention games



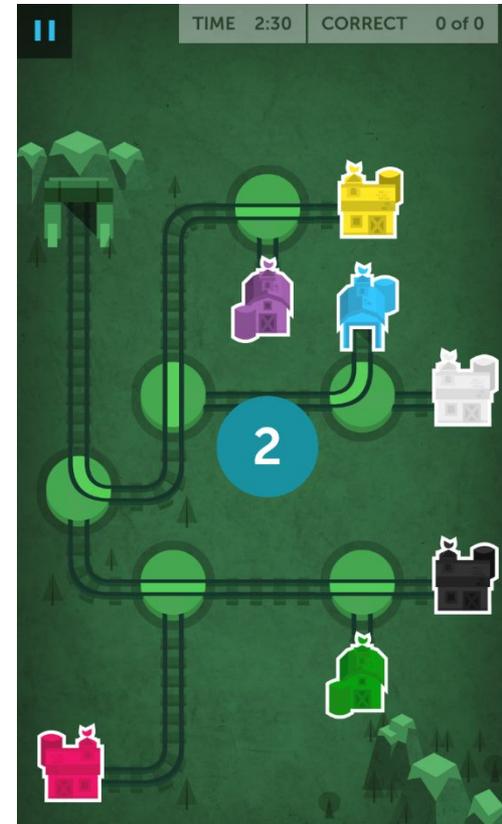
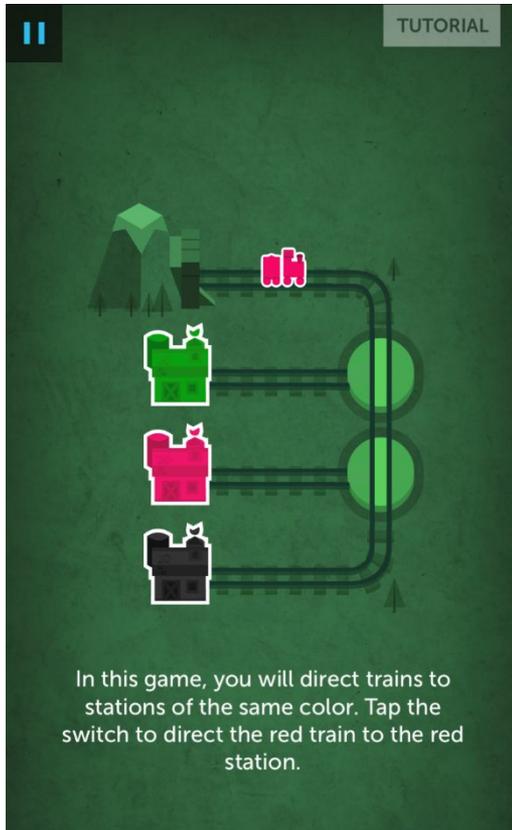
Toolkit

- **Materials needed:** A tablet or smart phone with internet connection.
- **Rules:**
 - The goal of Train of Thought is to correctly guide each train to their matching station by changing the switches on the track by clicking (or tapping) the circled part of the track.
 - You need to plan ahead as much as possible by switching the tracks before the trains arrive at the pivot point. This ensures that the trains follow the path to the correct stations.
 - If you click (or tap) too many times too quickly, then the tracks may not stay in the direction you intended.

Attention games



Toolkit



Attention games



- **Recommendations on duration:** At least 20 minutes a day, minimum 4 days a week for 4 weeks.
- **Assessment:**
- The score is dependent on the level played on as well as the number of correctly directed trains. Each train is worth 100 points. Points are multiplied by the current level to determine the final score at the end of each session. Points are not lost, only accumulated.

Attention games



Introduction

- **Name of the game:** Playing Koi
- **Main objectives:** Playing Koi is a game centered in the area of divided attention and the ability to process multiple streams of information. The goal of the game is to feed each fish once by tapping them, the player has to remember which fish has already been fed, the number of fish will keep increasing per level.

Attention games



Introduction

- **Training needs addressed:** Information retaining skills, the ability to process multiple streams of information.
- **Needed skills:** Basic smart phone or tablet navigation a skills and knowledge. Familiarity with touch screen interfaces and interaction.

Attention games



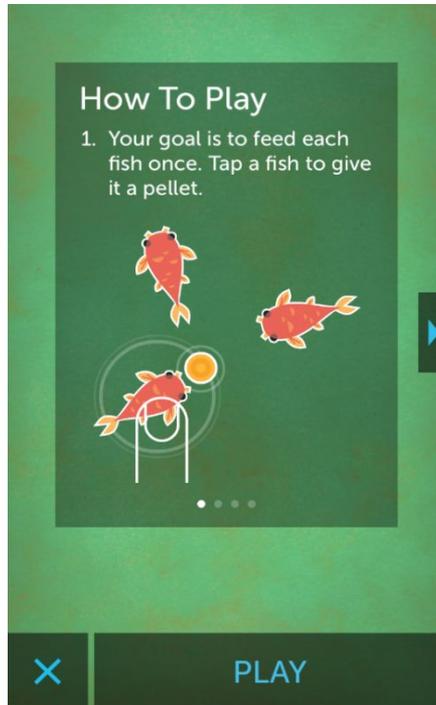
Toolkit

- Materials needed: A tablet or smart phone with internet connection.
- Rules :
 - The goal of Playing Koi is to feed all of the fish in the pond *only* once. You must remember which fish you fed as you only get 1 pellet per fish each round. Click on a fish to feed them a pellet.
 - A timer at the bottom of the screen indicates the amount of time remaining. The orange timer circle refills after clicking on a fish. You can click to feed another fish once the orange circle is highlighted. The timer shakes back and forth if you click a fish before the time is up. The amount of time you must wait increases as the difficulty level of the game increases.



Attention games

Toolkit



- Recommendations on duration: At least 20 minutes a day, minimum 4 days a week for 4 weeks.
- Assessment: the player gets 10 points for the first fish and an additional 10 points for each consecutive correct fish.

Attention games



Introduction

- Name of the game: Puzzle Solving
- Main objectives: Puzzles are great for helping the brain develop, because the brain looks for patterns— and puzzles are a true patterning activity. Patterning is also the foundation of reading, math and logic skills.
- Training needs addressed: Problem solving skills
- Needed skills: Basic smart phone or tablet navigation a skills and knowledge. Familiarity with touch screen interfaces and interaction.

Attention games



Toolkit

- Materials needed: A tablet or smart phone with internet connection.
- Rules: Find the pieces, and the order in which they fit better together
- Recommendations on duration: at least 3 times per week during 2 months. Each session should last 10 minutes.

Attention games



Toolkit

- Assessment:

- The user will be assessed by the levels in the game. Higher level will correspond to a higher cognitive ability.
- If the user cannot pass the initial levels, he or she will be advised to consult with a medical professional.
- User will be given additional assessment tools during piloting and online-assessment.



1 Visual perception games



Introduction

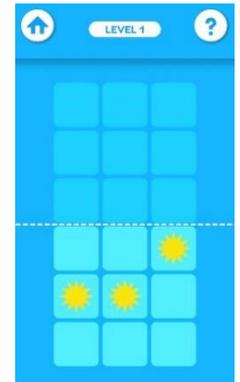
- **Name of the game:** Matching Game
- **Main objectives:** provide gradual and measurable improvement of the visual perception capacity through the game with escalating difficulty levels
- **Training needs addressed:** visual perception stimulation to follow the matching objects
- **Needed skills:** no particular skills needed

1 Visual perception games



Toolkit

- **Materials needed** (ICT devices, Internet connection, stylus etc.): smartphone or tablet with an Android system, Internet connection
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) Pay attention on the bottom objects and how to connect them
 - 2) Follow the pattern of matching the objects on the blank space
 - 3) The level of difficulty increases at each level



1 Visual perception games



Toolkit

- **Recommendations on duration:** at least 3 times per week during 2 months. Each session should last 10 minutes.
- **Assessment:** The user will be assessed by the levels in the game. The game will start with the easiest first level and as long as the user passes this level, more levels will be unlocked. Higher level will correspond to a higher cognitive ability.

2 Visual perception games



Introduction

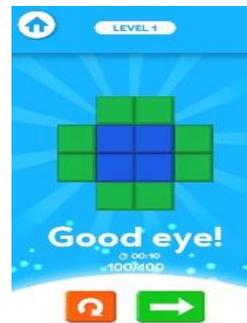
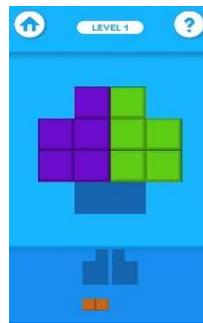
- **Name of the game:** Block Puzzle
- **Main objectives:** provide gradual and measurable improvement of the visual perception capacity through the game with escalating difficulty levels
- **Training needs addressed:** visual perception stimulation to follow the matching objects
- **Needed skills:** no particular skills needed

2 Visual perception games



Toolkit

- **Materials needed** (ICT devices, Internet connection, stylus etc.): smartphone or tablet with an Android system, Internet connection
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) Example of how to fit the figures in the shaded space
 - 2) The level of difficulty increases at each level



2 Visual perception games



Toolkit

- **Recommendations on duration:** at least 3 times per week during 2 months. Each session should last 10 minutes.
- **Assessment:** The user will be assessed by the levels in the game. The game will start with the easiest first level and as long as the user passes this level, more levels will be unlocked. Higher level will correspond to a higher cognitive ability.

Processing Speed Games



Introduction – Game 1

- **Name of the game:** My day routine
- **Main objectives:** provide gradual and measurable improvement of the processing speed capacity, by interacting with the game environment and responding to gradually more complex challenges
- **Training needs addressed:** Improve the processing speed when performing certain everyday activities, decreasing the time required to complete tasks or assignments, reacting quickly to stimulus, being able to complete tasks under pressure with good processing speed, coming to the right answer, by spending less time
- **Needed skills:** no particular skills are pre-required

Processing Speed Games

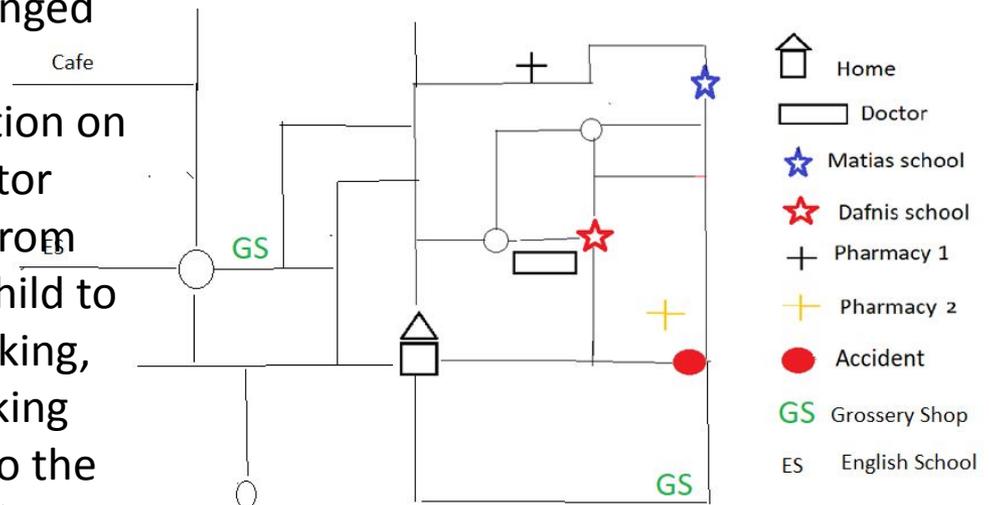


Toolkit

- **Materials needed** (ICT devices, Internet connection, stylus etc.): smartphone or tablet running an Android system
- **Rules on how to play the game with explanations and pictures or videos:**

The players will be presented with an environment where they will be challenged with activities like:

- Remembering to take their medication on time, Attending appointments (doctor appointments, taking the children from school the right time, taking each child to each activity at the right time), Cooking, Shopping, Calculating their bills, Taking different decisions such as “Going to the nearest or less expensive supermarket to buy shopping”



Processing Speed Games



Toolkit

- **Recommendations on duration:** at least 3 times per week during 2 months. Each session should last 15 minutes.
- **Assessment:** The player will be assessed through the pre-defined difficulty levels in the game. Higher level will correspond to a higher cognitive ability. Additional assessment exercises through the learning platform at <https://elearning.games4seniors.eu> .

Processing Speed Games



Introduction – Game 2

- **Name of the game:** Unlock my Day
- **Main objectives:** provide gradual and measurable improvement of the processing speed capacity, by interacting with the game environment and responding to gradually more complex challenges
- **Training needs addressed:** Improve the processing speed when performing certain everyday activities, decreasing the time required to complete tasks or assignments, reacting quickly to stimulus, being able to complete tasks under pressure with good processing speed, coming to the right answer, by spending less time
- **Needed skills:** no particular skills are pre-required

Processing Speed Games



Toolkit

- **Materials needed** (ICT devices, Internet connection, stylus etc.): smartphone or tablet with an Android system
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) Inspired by the Doors and Rooms game (<https://doorsandroomsguide.com/>)
 - 2) The user is presented with an environment (e.g., home, school, grocery shop, ...) and needs to solve some “puzzles” quickly enough in order to unlock the next level
 - 3) Time is a critical factor here, to exercise on processing speed



Processing Speed Games



Toolkit

- **Recommendations on duration:** at least 3 times per week during 1 month. Each session should last about 1 hour.
- **Assessment:** The player will be assessed through the pre-defined difficulty levels in the game. Higher level will correspond to a higher cognitive ability. Additional assessment exercises through the learning platform at <https://elearning.games4seniors.eu> .

1 Sequential processing games



Introduction

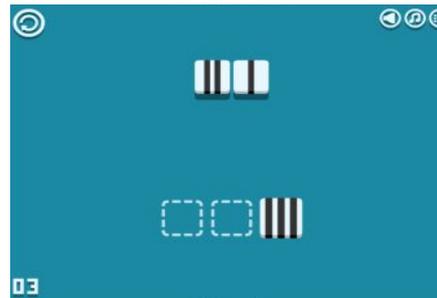
- **Name of the game:** Sequence
- **Main objectives:** provide gradual and measurable improvement of the sequential processing of the user through the game with escalating difficulty levels
- **Training needs addressed:** sequential processing stimulation to follow the order of the objects in the game
- **Needed skills:** no particular skills needed

1 Sequential processing games



Toolkit

- **Materials needed (ICT devices, Internet connection, stylus etc.):** smartphone or tablet with an Android system, Internet connection
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) Display how many levels are
 - 2) Give an example of how to follow a sequency (that will change by levels)
 - 3) The level of difficulty increases at each level



1 Sequential processing games



Toolkit

- **Recommendations on duration:** at least 4 times per week during 2 months. Each session should last 10 minutes.
- **Assessment:** The user will be assessed by the levels in the game. The game will start with the easiest first level and as long as the user passes this level, more levels will be unlocked. Higher level will correspond to a higher cognitive ability.

2 Sequential processing games



Introduction

- **Name of the game:** Maze
- **Main objectives:** provide gradual and measurable improvement of the sequential processing of the user through the game with escalating difficulty levels
- **Training needs addressed:** sequential processing stimulation to follow the order of the objects in the game
- **Needed skills:** no particular skills needed

2 Sequential processing games



Toolkit

- **Materials needed (ICT devices, Internet connection, stylus etc.):**
smartphone or tablet with an Android system, Internet connection
- **Rules on how to play the game with explanations and pictures or videos:**
 - 1) Give an example of how to visualise the maze and find the way out by painting the path
 - 2) Example of how to finalise the maze and then the game starts
 - 3) The level of difficulty increases at each level

LEVEL 1 COMPLETED!

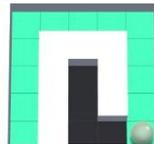
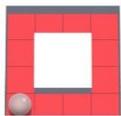
LEVEL 2



LEVEL 2



LEVEL 3



TAP TO NEXT LEVEL

2 Sequential processing games



Toolkit

- **Recommendations on duration:** at least 4 times per week during 2 months. Each session should last 10 minutes.
- **Assessment:** The user will be assessed by the levels in the game. The game will start with the easiest first level and as long as the user passes this level, more levels will be unlocked. Higher level will correspond to a higher cognitive ability.

Assessment and impact of the games



Possible approaches for assessing the use and impact of the games to be decided by each trainer/carer and partner:

- 1) Final focus group
- 2) Individual questionnaires

Suggestions of topics to be addressed:

- 1) General level of satisfaction from the game (positive/negative)
- 2) Frequency of use
- 3) Duration of use
- 4) Estimation of improvement of cognitive capacities
- 5) Willingness to repeat a similar experience
- 6) Evaluation of the training method
- 7) General recommendations and comments