

## **Tablet-Based Cognitive Gaming Platform for seniors**

**2018-1-TR01-KA204-058258**

## **IO1 Cognitive skills based training scheme for seniors**

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## **Introduction for describing adult education system in each country**

Belgium, with its three-tier government structure and cosmopolitan population, has three separate political regions and three different linguistic communities (Dutch, French, German) which rules autonomously. Due to these different local authorities, educational systems also vary based on the region.

The Belgian government gives attention to embody each part of the society. There are several educational policies and institutions for people who lives in Belgium. In case of senior education, there are quite overlapping demand and supply in the field.

Based on the Statbel survey<sup>1</sup> on the education and training of adult people (conducted in 2016 and 2017), most important conclusions are:

- The proportion of the population\*<sup>2</sup> between 25 and 64 who have attended at least one formal or non-formal training in the last twelve months is 45% in Belgium.
- Regardless of the form of learning, the proportion of the population that participates in it decreases with age.
- The higher educated, the greater the chance of participating in some form of formal or non-formal learning.
- Unemployed people participate in formal learning more often than the rest of the population.
- Almost 3 of the 4 non-formal courses are work-related (72%).

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<sup>1</sup> Stabel European survey on adult education and vocational training, 2016

<sup>2</sup> The population between 25 and 64 years old living in Belgium was questioned about the training courses taken in the last twelve months. Participation in formal as well as informal learning is highest in the Brussels-Capital Region.

If any person wants to continue studying but not in higher education or not in a full-time system or they have not obtained a secondary diploma for some reason and they want to do something about it or they want to learn a language or they just want to increase general knowledge they can follow an adult education program.

Adult education has different types of training:

- Basic education
- Secondary adult education
- HBO (higher professional education)

There is also the 'specific teacher training'. The courses are modular. A module can start several times in a year. In this way participants can compile their study package flexibly. Lessons can be given in contact or distance learning or in a combination of both.

In addition to that, it is also possible to study in regular higher education as an adult. This can be done in different ways: an exam contract, a 'work student' trajectory or via a flexible learning system (e.g. distance learning, open university, etc.).

## **Current situation with existing trainings for elderly**

There are several branches in case of senior education in Belgium, especially in Flanders and partly in the Brussels region. Most of the courses given by these branches consist of job-oriented courses.

One of the well-known institutions in this area are the Centres for Adult Education (CVO). It offers language courses along with secondary education courses. Actiris (Brussels Employment Office)/VDAB (Flemish Office for Employment and Vocational Training) are also offering several certification programs and job-oriented courses for training their clients properly.

Furthermore, there are some University Branches which offer special programmes for adults and their special needs. These programmes are organized as evening courses. For instance, KU Leuven offers a General Program under the third age university program. In many cases, those who want to study at a college or university but have to work during the day can combine work and study as a working student via flexible learning trajectories. Another option for flexible study is the Open University. The CLB (Center for Student Guidance) also supports adults during their secondary education and higher education. Even if they are not organizing the programmes, the CLBs do address the good practices for enthusiastic persons.

The OCMWs (Public Centres for Social Welfare)/CPAS (Public Centres of Social Action) also are organizing several programmes and projects to integrate elder people in active social life via teaching and training them.

In addition, Syntra offers flexible labour-market oriented training courses and Socius offers socio-cultural training.

In general, adult education, often called evening education, offers the possibility to follow training at different levels. The courses in adult education are modular courses. This means that the subject matter is subdivided into a number of modules, which together form a course.

In the Basic education, courses aims at people who have had little education and who have problems reading, writing or counting. The courses are at the lower education level and 1st grade secondary education. Some examples of courses are:

- Dutch as a second language (NT2)
- entry courses French and English
- math
- computer lessons

On the other hand, the Secondary adult education consists of a whole range of courses

- courses within the general education study area (formerly second-chance education)
- various vocational courses at the level of secondary education

It is also possible to obtain a full secondary education diploma through secondary adult education organized by CVO. These courses include general education and vocational trainings.

As an alternative option to these, there are vocational training in higher professional education. Higher professional education (HBO5) of adult education consists of vocational trainings in the fields of:

- biotechnology
- healthcare
- commercial sciences & management
- industrial sciences and technology
- social work

The courses are at a level between secondary education and a bachelor's degree, previously this was called a B1.

Moreover, there are specific teacher training course through adult education. The specific teacher training is a training that the user follow after the user have already obtained a diploma (usually in higher education). The SLO (Specific Teacher Training) only focuses on the pedagogical aspect. The main diploma determines which subjects persons can teach. The SLO through adult education replaces the former D-course, GPB and aggregation training.

Basic education and general education of secondary adult education are free of charge. In the other forms of adult education costs 1.50 Euros per class time. In addition to the registration fee, a centre may also charge fees for course material.

Certain categories of students who are experiencing financial difficulties, people who participate via a VDAB (unemployed), Fedasil (refugees) or VAPH (people with disabilities) certificate can receive a full or partial exemption from the registration fee.

The age at which the user can start adult education depends on the chosen study program.

## **Good practices existing in each partner country regarding cognitive games for seniors.**

### **BrainGymmer**



The BrainGymmer brain games, puzzle games and tests are developed by Dezzel Media from Almere (The Netherlands). It is an online brain training program. The program has been developed together with neuroscientists from five renowned universities. It is created for people who want to train their brains with fun and challenging thinking games, tests, brain teasers and other exercises. BrainGymmer gives the brain the stimulus it needs to become stronger and then stay strong. The fun brain games continue to challenge the brain because they adapt to the user's game level in terms of difficulty. This way, it remains fun to train the brain.

In addition, a fit and active brain protects against the first principles of memory loss, dementia, Alzheimer's and other mental problems. There are therefore many elderly people who train their brains with the BrainGymmer thinking games. Regardless of their age, users of our platform tell us that they feel more alert, less forgetful and that they concentrate better.

BrainGymmer helps you:

- train concentration
- improve memory
- increase focus
- think faster and more logically
- increase language skills
- count faster

#### **What are the costs?**

After registration the user has a free account with limited access to BrainGymmer games, tests and exercises. If the user wants to add more variation to your training, there is

BrainGymmer Pro that can be purchased with full access to all brain games and other exercises.

### **How does it work?**

Most of the thinking games originated from collaboration with neuro-scientists and consist of various psychological investigations and exercises. With each game the user can indicate whether the user wants to see an example of how the game should be played.

### **Brain Fitness Index (BFI)**

The score is saved for every game played. That score is based on two essential factors when it comes to measuring the cognitive performance, namely the speed and the accuracy. The Brain Fitness Index (BFI) is a cumulative score that compares the score with that of others. It can be compared with an IQ score. The BFI measures how well the users are doing compared to others in different areas of cognitive ability. The users can then make the comparison by clicking on Home and clicking on 'compare yourself' on the dashboard.

**Language:** Dutch

**Contact:** [support@braingymmer.com](mailto:support@braingymmer.com) / [info@braingymmer.com](mailto:info@braingymmer.com)

## MAX Memory Trainer app



This app from broadcaster MAX is part of the daily TV program with exercises to improve your the-term memory: brain gymnastics. The app contains 10 games, including the Shopping Game, the Search Picture and the Letter Rain. The user can do a 10-minute test every day and keep track of their score.

**Language** :Dutch.

**Free** : Yes.

This fun and challenging app is based on the popular television program of Omroep MAX and contains, among other things, the Shopping Game , Search Picture and Letter Rain .

The MAX Memory Trainer app is the official app with the television program of the same name from Omroep MAX. It can be played on a smartphone and a tablet.



**Contact:** <https://www.maxvandaag.nl/contact/>

## Neurocampus



# BRAINTRAINING

10 minuten per dag voor een fitter brein

Neurocampus is the largest publisher of brain training in the Netherlands and Flanders. Two large websites (Neurocampus.com and Neurocampus.be) offer online brain training and were developed in collaboration with TNO and experts in healthcare and science. On these websites the user can train five cognitive skills of your brain: language, arithmetic, insight, memory and logic. Practicing ten minutes a day can already give the user a fitter brain.

The website is divided into two parts: The Campus and the Theme Braintraining. The Campus Braintraining consists of exercises in the category's language, arithmetic, insight, memory and logic. Here the user can practice seriously and also take exams and tests. Under Theme the user will find brain training categorized into themes such as travel, sports, books, music and art. This has a more non-binding nature.

Each campus year consists of several blocks. A block lasts approximately 55 days. Sometimes a little longer, sometimes a little shorter. At the start of each block there are a number of new exercises to do in the different categories. All grade lists are also emptied, and everyone starts at level 1 again.

The user can register for free and without obligation. When the user is logged in the user will have access to all exercises and grades are kept in a grade list. The user can also end up in the high scores if the user has correctly completed all ten exercises. And the user can take exams.

The users can register themselves in Language, Arithmetic, Insight, Memory and Logic together form the all-round brain training. Each exercise consists of ten exercises for which the users have two minutes to complete. The users will then receive the result with a number.

There is a mix of all exercises from the relevant category. As soon as the user passes for all five categories (language, calculation, insight, memory, logic) the user can take the exam. The exam consists of a mix of all exercises from all five categories. When the user have

passed this, the user can practice one level higher. From level 1, to 2, to 3. And the exercises are becoming increasingly difficult.

**Contact:** [info@neurocampus.com](mailto:info@neurocampus.com)

## PEAK (iOS) | PEAK (Android)



This program consists of a combination of neuroscience, technology and fun to get little gray cells active and striding purposefully towards their full potential.

It is a good app for brain training in which games are offered to improve your cognitive skills. The user gets daily games in various categories, such as memory, concentration, problem solving and language. After each training a score is given and the user can follow your performance in a graph. The exercises look calm and are provided with clear instructions.

**Platform** : iOS, Android.

**Language** : Dutch. Games with words are in English.

**Free** : Free basic version and paid Pro subscription with more exercises.

Peak is the fun, free brain training designed around the user. Peak uses games and puzzles to challenge memory, language and critical thinking, so that the mind remains active.

A complete brain training session only takes 10 minutes per day. With 45 games for adults and new brain training sessions every day, the user can always be sure of a fun challenge.

It consists of free brain games to challenge memory, attention, math, problem solving, mental agility, language use, coordination, creativity and emotion control. Clients can discover the categories in which their brain excels and compete with friends by comparing their brain capacity and game performance. There is also a coach, the personal trainer for the brain, helps the user to follow and improve their progress.

Users can work offline and therefore enjoy Peak brain games everywhere with more than 45 games available and regular additions to keep them motivated.

Personalized brain training and in-depth insights options come with Peak Pro.

For upper level, access the Advanced Training modules from Peak: intensive programs that train a specific skill, including the new Memory Game Wizard.

**Contact:** [support@peak.net](mailto:support@peak.net)



## MEMORADO



Memorado offers an online game and training services for seniors, especially for their memory and cognitive skills. There is an online plan for prospective clients which illustrates the process step by step. This steps are:

- Training goals: Determining what the users want to improve.
- Fitness test: Consequences for the difficulty of the levels and the choice of games during training.
- Personalized training schedule: Every day, 5 games are selected that match the objectives and skills.

## CogniFit (Cognitive Stimulation and Training)

CogniFit was developed with the help of neuroscientists. This fun app improves a person's cognitive abilities, which includes memory and concentration. The progress made by the user over a period of time can be tracked. Users can also play challenge rounds with their friends. The app also modifies the difficulty level to suit the profile of the user and provide recommendations based on the results. Spending 20–30 minutes a few times every week can give measurable improvement in the performance of a user.

The first four games are free, then it costs \$13 a month.



## **SILVERFIT**



### **SilverFit Alois**

With the SilverFit Alois the user creates moments of happiness for people with dementia. There are activities that stimulate physical activity, promote social contact, cognitive challenge or, on the contrary, offer relaxation. The Alois is so easy to use that also volunteers, family and friends can undertake fun activities with the elderly, individually or in a group. There is always something to do and talk about with the SilverFit Alois. This ensures social gathering and enjoyment in daily life. SilverFit Alois is made especially for older people living in nursing homes. With SilverFit Alois clients can play fun and challenging computer games that are customized especially for them. The games stimulate clients to move, work their brains and enjoy being active with dance practices.

### **SilverFit Rephagia**

The SilverFit Rephagia is a system that combines existing evidence-based exercises for the treatment of dysphagia with cues and a visual representation of swallowing movement, swallowing power and swallowing timing. The SilverFit Rephagia consists of a laptop with installed software and is supported by the speech therapist. The system can offer any exercise in the form of a computer game or by means of a graph.

The SilverFit Rephagia has been developed to support adults and the elderly with oropharyngeal dysphagia in their treatment. The system helps to increase the swallowing frequency and swallowing power and to improve coordination (e.g. through the Mendelsohn Maneuver). The SilverFit Rephagia is used by speech therapists working in (geriatric) residential care centres and rehabilitation centres, the Mental Health Care and hospitals.