Tablet-Based Cognitive Gaming Platform for seniors

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IO1 Cognitive skills based training scheme for seniors

Prepared by

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Introduction

1.1 Scope of work

The main aim of this output consists in creating a cognitive skills-based training scheme for seniors by identifying target audience characteristics, learning needs and accessible learning objectives. Partners' countries created the current document explaining the specific methodology and appropriate tools for reaching this goal.

1.2 Methodology

For answering this purpose, the project partners created **a survey questionnaire** for analysing seniors' level of cognitive skills and learning needs, and the challenges they face in their daily lives. This questionnaire will be then translated by each partner country in its own languages and proposed online to 100 seniors per country. A summary and an analysis of the results will be done by each partner in a report and then compiled in a **common comparative report** prepared by E-Seniors. In parallel, each country will realize a desk research about existing cognitive games with a description of 3 to 5 good practices in a document of maximum 10 pages. Once the results of the need analysis survey will be done, each project partner will prepare different **cognitive skills learning objects** based on the following topics: memory, attention, visual perception, reasoning and planning, processing speed, and sequential processing.

Afterwards, different scenarios will be implemented in partner countries during focus groups including seniors' experts. Finally E-Seniors will work on the scheme including training needs, objectives, action plan, initiatives, resources and assessment methods before a national translation by the partner countries. Finally, a brochure summarizing the main results will be then realized by Turkish partners from Etimesgut İlçe Milli Eğitim Müdürlüğü.

1. Survey on the analysis of target group needs in terms of cognitive challenges, skills and learning needs

1. Please fill in the requested information below:

Your email address *(optional)*: ....

Gender:　　　Female ☐　　　　Male ☐

Age*:*

☐　　55 - 60

☐　　60 - 65

☐　　65 - 70

☐　　70 - 75

☐　　80+

2. Do you have any disease(s)?　　　Yes ☐　　　　No ☐

If yes, what kind of disease(s) you have? *(optional):* ....

3. Which kind of technological devices and how often do you use:

Smart phone (phone with touch screen)

every day　☐　few times per week ☐　few times per month ☐　never ☐

Tablet

every day　☐　few times per week ☐　few times per month ☐　never ☐

Laptop

every day　☐　few times per week ☐　few times per month ☐　never ☐

E-Reader

every day　☐　few times per week ☐　few times per month ☐　never ☐

Home PC

every day　☐　few times per week ☐　few times per month ☐　never ☐

4. Please evaluate your cognitive capacities and skills in the everyday life on a scale from 1 to 4 (1 = No, 2 = I have difficulties very often, 3 = I have difficulties sometimes, 4= Yes)

Memory capacities	1	2	3	4	I don't know
Do you find it easy to remember everyday things?					
Do you remember where you put your personal items (keys, phone, documents etc.)?					
Do you remember events (important dates) or other information from the past?					
Do you find it easy to remember things planned for the future (appointments, shopping list, taking drugs etc.)?					

Attention capacities	1	2	3	4	I don't know
Do you stay focused on task despite distractions?					
Do you stay focused on task for a sustained period of time (e.g. reading a long text)?					
Do you find it easy to do two things at the same time?					
Do you find it easy to stay concentrated when driving?					

Visual perception capacities	1	2	3	4	I don't know
When I think about something, I can visualise it in images or scenarios.					

Visual perception capacities	1	2	3	4	I don't know
I can easily interpret maps.					
I can easily organise and interpret diagrams or charts.					

Reasoning and planning capacities	1	2	3	4	I don't know
I find it easy to reason and form ideas.					
I find it easy to solve problems.					
I can easily plan or organise something for a specific topic.					

Processing speed capacities	1	2	3	4	I don't know
I calculate my shopping bill quickly and accurately.					
I am able to react quickly and adapt to your environment.					
I can solve simple math problems in my head.					

Sequential processing capacities	1	2	3	4	I don't know
I can put things in order when thinking.					
It is easy for me to plan activities and events step by step.					

5.On a scale from 1 to 5 (1 = not important, 2= maybe it's useful, 3= it's important, 4= very important), what are the most important things you need to do with new technologies? (Please, mark only one option for each learning format):

LEARNING NEEDS	1	2	3	4
I find it easy to use my smart phone				
I am able to read the newspapers on the Internet				
I use my email to communicate with my family members or friends.				
I use tools like Skype, Messenger, etc., to communicate with family and friends.				
I use Facebook, Twitter, Instagram, or other social media				
I use my phone/tablet/PC to edit photos & videos and save them for future reference.				
I use my devices to submit my Tax declaration or other governmental declarations through the Internet				
I shop through the Internet				
I check the status of my bank account through the Internet				
I manage my electronic health record through the Internet or I consult my health insurance through the Internet.				

6.On a scale from 1 to 4 (1= No, 2= I don't know, 3= it's a good idea, 4= Yes) what are the most appropriate learning methods to learn new technologies? (Please mark only one option for each learning format):

LEARNING METHODS	1	2	3	4
I find it easier to learn during face-to-face group lessons				
I find it easier to learn during face-to-face private lesson				
I find it easier to attend courses through the Internet				
I like learning through face to face classes combined with Internet sources				
I find it easier to learn by interaction with family members or friends				
I find it easier to learn from peers.				

7.What do you like to do during your free time?

I like playing mind games (Sudoku, crosswords etc.):   Yes ☐   No ☐

I like playing board games (Scrabble, cards, Monopoly etc.)   Yes ☐   No ☐

I like playing chess or Backgammon: Yes ☐   No ☐

I like learning new things via books, movies, performances etc.:   Yes ☐   No ☐

I like to go out with my friends and planning activities: Yes ☐   No ☐

Other (please specify): ………………………………….

3.Desk Research Report Best Practices From Partner Countries Regarding Cognitive Games For Seniors

Introduction

According to recent data Turkey Statistical Agency;0-14 years: 22.68%,15-24 years: 15.99%, 25-54 years: 41.21%,55-64 years: 8.58%, 65 years and over: 8.92%.

The population in the 15-64 age group, called the working age, was 67.8%.The median age of the population is at 32.6 years of age, with a total life expectancy of 78 years of age in 2020. Elderly population is increasing day by day in Turkey and the world.61.5% of the elderly population was in the 65-74 age group, 30.2% in the 75-84 age group and 8.2% in the age group 85 and over. Some 43.9 percent of the elderly population was made up of men and 56.1 percent was made up of women. The labor force participation rate of the elderly population was 11.9%. This rate was 19.9% in the elderly male population and 5.8% in the elderly female population. The unemployment rate in the elderly population was 2.4%. 72.8% of the elderly population was in the agricultural sector and 20.4% was in the service sector. Poverty rate 18.3% for elder people. The rate of illiterate elderly population was 21.9%. The proportion of illiterate elderly women was 4 times higher than that of older men. The rate of illiterate elderly women is 32.6% and the rate of elderly men is 8.2%. When the elderly population is analyzed according to the educational level, the proportion of the elderly population who are primary school graduates is 43%, the rate of those who are middle school / elementary school graduates is 5,2%, the rate of those with high school or equivalent education is 5,6%.

According to statistics of death, 46.3% of the elderly who died in 2015 due to circulatory system diseases. This disease was followed by benign and malignant tumors with 16.5% and respiratory system diseases with 13%, respectively. The number of elderly people who died of Alzheimer's disease increased two-fold. According to statistics of death, the number of elderly people who died of Alzheimer's disease in 2011, 6 thousand 155, while in 2015 to 11 thousand 997. While the rate of elderly people who died of Alzheimer's disease was 2.9% in 2011, this ratio increased to 4.3% in 2015.When the proportion of elderly people who died of Alzheimer's disease was examined by gender, it was seen that both genders increased. While the proportion of elderly people who died of Alzheimer's disease was 2.4% in males and 3.4% in females in 2011, these rates increased to 3.5% in males and 5.2% in females in 2015.

The proportion of elderly people in the 65-74 age group who used internet increased from 3.6% in April 2012 to 8.8% in the same month of 2016. When the individuals using the Internet were analyzed on the basis of gender, it was seen that men used more internet than women. While the proportion of elderly men using the Internet was 12.5% in 2016, the proportion of older women was 5.8%.While the rate of smartphone usage in people between the ages of 65 and 75 was almost zero in 2010, this rate increased to 39% in 2016. In other words, 4 out of 10 people aged 65-75 have smartphones. In those over 75 years of age, almost half (48%) of the Internet users, over 15.65%, also have an account on a social media platform.

87% of internet users over the age of 65 also use Facebook. The 6% cut uses Whatsapp, while the percentage of users who use Instagram is only a quarter of internet users over 1.75 years of age and prefer to use tablets.

I. Adult educational system in Turkey

1)Adult education

In Turkey, adult education services are provided mainly by the Ministry of National Education, other related Ministries such as the Ministry of Agriculture and Rural Affairs, Ministry of Health, Ministry of Women and Family, Ministry of Industry and Trade and formal and semi-formal institutions, local administrations, universities, civil societies and non-governmental organisations (NGOs). Besides being responsible for the provision of adult education programs, the Ministry of National Education (MoNE) also coordinates the cooperation between institutions at national and local level and inspects the running of their programs. The Ministry of Education provides adult education services through the General Directorate of Apprenticeship and Non-formal Education which is the main governmental unit for adult education. Recently Turkey has seen a rise in educational programmes in this field due to the European Union harmonisation programme, under the 'Lifelong Education Concept´. This aims to improve the underlying system of providing adult education, as well as work towards a more efficient technical and economic infrastructure.

The system of Adult Education in Turkey is largely under the control of the Ministry of National Education, even non-governmental organisation (NGOs) who wish to organise life long learning programmes are required to obtain permission from the ministry rather than local administration. For employers, organizations with twenty or more workers are required to provide vocational

training (skills training) for their employees or to contribute to their professional training. In addition, organizations with fifty or more employees are required to organize courses at workplaces or to participate in different courses for the development of their staff.

2) Training Programs

The adult education program is structured in two basic categories. General Education Programs; success programs, health, family life, mother-child education programs, civic education programs, self-development programs, social and rural development programs. Vocational and Technical Education Programs; grouped as follows; professional recruitment programs, basic skills development programs and using technology programs. Vocational training courses are developed by MoNE and the common education programs for employees are developed and implemented by the centers (PEC, VTEC) in cooperation with the relevant sector. It is important that vocational training programs are developed and implemented in accordance with national standards and modular structure. One of the basic principles of non-formal vocational and technical education is to involve individuals in the lifelong learning process. Which trainings of disability allow individuals with disabilities the program is prepared and implemented.

3) Providers of Adult Education

Key Providers/Main institutions/Sources for Adult Education In very general terms, the following groups and organisations are responsible for providing adult education in Turkey: providers of state education (Universities, general and vocational training institutions, private education institutions, elementary and pre-schools), state institutions and organisations (ministries, institutions and legal high-committees, local authorities and the Turkish armed forces), the business world, (including trade unions and employers´organisations), non-governmental organisations (NGOs) and the media.

'Non-Formal´ Learning

- Public Education Centres - PEC

Organised in all cities and districts of Turkey PECs are the main providers of non-vocational non-formal education. PECs are able to provide free education services between 07:00 and 24:00, including weekends. There is a twelve person minimum participation limit in order to open a course although it is not strongly enforced. Courses for people with disabilities, homeless children, ex-convicts and drug addicts in treatment can be opened with any number of participants. The target group for PEC´s education activities are mainly those with some sort of

lack of education, workers with no formal qualifications, immigrant workers, and rural workers who have emigrated to the cities. During this phase of harmonisation with the EU in Life Long Learning these programmes are being extended to focus more of Personal Empowerment and Good Citizenship. The general objectives of the Personal Development Program are to assist students (primarily women) in realising the goals they have set up for themselves in their personal and professional lives, to support social actions and initiatives for change and thus enhance individual skills. Such skills include leadership and management skills, risk management, achieving targets and adapting to change. The Good Citizenship Programme seeks to increase competency levels in individuals, especially increasing knowledge about social issues such as justice and accountability, but also in being creative. The scope of the program includes topics that have an impact on daily life such as rights and responsibilities, human rights, democracy, moral values, hygiene, social justice, history, traditions, transparency, access to information, local-national international business markets, gender equality, technological development and environmental values. Vocational Institutions and career-related training. Vocational Training Programs are educational sessions that focus on practicing a particular art, job or profession once initial technical skills have been taught. Because these programs develop specialization in technical areas, they are sometimes referred to as technical training. The emphasis on vocational training in Turkey is growing as industry develops and becomes more specialised. The need has been identified for more specialist skills training over longer periods, and more established connections are being made between VECs and businesses to create a stronger working relationship between the education and the work place.

- Vocational Education Centres - VEC

VECs are founded primarily in areas of Turkey with a significant industrial capacity. People who are at least fifteen years old and have completed eight years of primary formal education are eligible for the VEC courses. Participants receive one-day theoretical and technical courses in VEC classrooms and then six days of in-service training. Through completing the VEC training programs, apprentices can obtain the following certified titles:

- **Skilled Worker**: Earned after 2-3 years of training and one examination.

- **Master:** Earned after completing 240 hours of course program.

- **Master Teacher**: Earned after completing 40 hours of work in the pedagogy course program.

In addition, the Ministry of National Education has also provided distance education services such as Open Primary School, Open High School and Open Vocational and Technical High School and Open College.

E-learning

The main provider of e-learning in Turkey is the Anadolu University which has a well established Open Education system. The university currently has over 1.000.000 students in a distance learning programme from turkey, Northern Cyprus and Turkish communities with the EU. Learning takes place online via a video conferencing system for teaching and also through self directed study guides and text books and television or radio programmes produced by the University Television Centre (some 300 annually). Courses and degree available are generally focused on subjects such as business, economics and finance, although the variety is now expanding to include social sciences and subjects such as theology.

Non-Governmental Organizations (NGOs)

Institutions such as municipalities, foundations and associations provide direct support to non-formal education by providing courses for adults. There are many non-governmental organizations providing adult education. Elder Rights Association, Turkish Geriatrics Society, Seniors Council Association, International Federation of Respect for the Elderly, Mental Health Association that organizes training for adults. In addition. Chambers of Commerce and Industry also provide adult education. For this purpose, different courses are open in Turkey.

Employment Agency-Employment-guaranteed training courses

Vocational training courses are organized to provide the handicapped who have any occupation, knowledge and skills in professions according to their interests, needs, and talents in order to help them to become recruited or work independently. At least 50% of the attendants who successfully complete the courses are employed by the cooperated organization. Vocational training courses are organized for the convicted. Also in cooperation with the Ministry of Justice and non-governmental organizations, vocational training courses are organized for the convicts who are to be released in short time in order to facilitate their employment after being released.(Some of the trainings; Enterprise Resource Planning Specialist, Local Cloth Weavers, Decorative Wood Ornament, System and Network Expert, Industry Expert, Medical And Aromatic Plants Growers, Beekeeping Technician etc..)

Life Long Learning and Adult Education Department was established in many universities.

-Distance Education

Turkish distance education provides learner-content interaction through one-way technologies. There are distance education centers in 20 universities (%11)in Turkey and certificate programs in these centers are at different levels. As an important social and educational development the Open Education Faculty's significance lies not only in making University education available to adults who can only obtain it trough study in their spare time, but also in the variety of teaching methods used. Similarly, the OHS that is a widespread secondary education program allows traditional and non-traditional students, who for one reason or another have not completed school, with an opportunity to earn a diploma. By the way of distance education in Turkey, students who failed to win places at conventional universities as well as those who for economic, geographic or other reasons could not study on university campuses found a chance to be educated.

1) Policy and legislative framework in Turkey regarding adult education

Politics and Law

The system of Adult Education in Turkey is largely under the control of theMinistry of National Education, even non governmental organisation (NGOs) who wish to organise life long learning programmes are required to obtain permission from the ministry rather than local administration. This can often mean that such programmes are avoided in favour of short term or individual seminars which do not fall under this jurisdiction.

Non-formal education is defined as the training and education of those who did not enrol in formal-education for whatever reason, or continuous education of those who had taken some level of formal education. The Act requires formal and non-formal education activities to be organised in close collaboration and coordination, utilising each other´s available resources as much as possible. In

the legal foundation of the Turkish education system, adult education and other continuing education activities lie in the scope of non-formal education.

In addition, there is MEGEP´s Policy Paper and Strategy Document for Lifelong Learning (LLL) in Turkey. MEGEP (or English SVET - Strengthening the Vocational Education and Training

System in Turkey) is an EU funded project within MoNE that aims to improve vocational training and education system of Turkey. As an expected project output, the project developed the first Lifelong Learning Policy Paper.The policy paper recommends change in seven

key areas:

1. System, Infrastructure and Funding of Lifelong Learning

2. The Collection and Use of Data for Monitoring and Decision-Making

3. Decentralisation and Devolution, Civil Society and Collaboration

4. Information, Advice and Guidance to Learners, and a Culture of Learning

5. The Development of Staff Capacity

6. International Co-operation

7. Quality Assurance and Accreditation

2) Education for seniors in Turkey and main providers and senior citizens' policy

General Directorate of Services for Disabled and Elderly under the Ministry of Family, Labor and Social Policies and the Directorate General of Public Health under the Ministry of Health constitute policies for the elderly. These units are mainly in charge of performing protective, preventive, educative, developing, guidance and rehabilitating social service activities for the elderly. Successful and productive aging and healthy aging trainings are organised. Status of Elderly People in Turkey in 2013 and has prepared a National Plan of Action on Aging Applications Program. In this plan, there are three priorities; Supporting Environments and Development, Improving Health and Welfare in Aging and Providing Supporting Environments with Opportunities in Old Age. Active aging policies need to pay special attention to elderly people living in rural areas.

In some universities, Elderly Research and Application Centers have been established in order to conduct scientific researches, practices and training programs for the problems and welfare of elderly individuals. Geriatric Sciences Research and Application Center (Hacettepe University), Elderly and Disabled Education, Research and Care Foundation (Selçuk University), Elderly Studies Application and Research Center (Ankara University), Old Age and Memory Application and Research Centers (Eskişehir Osmangazi University) and application centers.

Gerontology, a science that approaches the subject of old age from the broadest perspective, is represented in two universities.

GeroAtlas60 + Old age can be evaluated from two aspects, before and after refreshing. With EroAtlas60 + Refreshing University, activities are being carried out for active aging. They are working to make this attempt a nationwide trend for the proliferation of successful aging people. This new gerontological movement, backed by Akdeniz University, the National Aged Council and the National Association of Social and Applied Gerontology, is a good example for the younger generations behind.In university Bachelor's and Master's programs in Gerontology. (http://sbf.akdeniz.edu.tr/gerontoloji-bolumu/)

3) Cognitive skills training for seniors in Turkey

There are a lot of organizations in Turkey that provide cognitive training for different age groups including senior. Most of them are non-governmental organizations. Some of them are, Association of Elderly Problems Research, Geriatric Sciences Research and Application Center- GEBAM, Turkish Geriatrics Foundation, Turkish Geriatrics Association, Private Nursing Home Care and Nursing Association Solidarity Association, Academic Geriatrics Association, Geriatrics Physiotherapists Association, Alzheimer's Association, National Association of Social and Applied Gerontology, Center for Old Age Research, Aegean Geriatrics Society, Association for Solidarity with the Elderly, Education, Research and Care Foundation for the Elderly and Disabled, Turkey Osteoporosis Society, World Aging Council, Nursing Home Establishment and Survival Association, Turkey Forward Aging Research Center, Elderly Studies Application and Research Center, Geriatrics and Gerontology Association, Geriatric Nursing Association, Elder Rights Association. A total of 36 projects were conducted between the years 2006-2018 for the elderly.Frequency distribution of project subjects is quality of life with 55,9%, secondly, intergenerational relations (14,7%) followed by social problems and expectations (11,8%). Other areas that are subject to the project studies are the cognitive problems of the elderly (5.9%), elderly care (5.9%), vehicle use (2.9% project) and family relations (2.9%).These projects supported by Universities, Turkey Scientific Research Center, Municipalities, the European Union Education and Youth Programs, the Social Assistance and Solidarity Foundation, the World Aging and World Constructors Association of Development Agencies, Pharmaceutical Companies, T. C. Ministry of Family and Social Policies and Insurance Companies.67 books about old age and aging has been published since 1992 in Turkey.

Especially as the communication technology becomes more and more widespread; it is observed that elderly people are encountered with more difficulties in adapting to the technological and

institutional changes. There are few projects were carried out about to the use of technology in the elderly.

Sabancı University Social Responsibility Projects

Although the content of the projects carried out in seven different institutions changes with the creativity of the team members, it is aimed that the elderly feel young and keep their minds moving with the young people in the day. In project scope; activities such as oral history studies on various subjects, recipe book printing, choir studies, poetry reading, handicrafts and reflexes to develop activities such as memory games and workshops.

III. Good practices existing in Turkey regarding cognitive games for seniors.

1) İst_GETAM (İstanbul Gerontechnology Practice and Research Center)

Date of creation:2017

Description:The objective of the project is to find treatment and rehabilitative solutions to the health problems of people over 65 years of age. Ist-GETAM is the first and only center in Turkey about this topic.

Objectives :

- Determining the health problems of the elderly and providing preventive and curative approaches to the foreseen problems within the scope of Gerontechnological prevention strategies.

- Providing ergonomic solutions with consulting services and innovative designs for elderly individuals with environmental problems in their living areas

- Development and training of video-based training equipment related to the use of social, architectural, medical and other necessary technological equipment in the elderly and daily living activities.

- Organizing dissemination meetings that will raise awareness on the needs and applications of information technology in elderly care

- Multidisciplinary R & D cooperation network in Gerontology

Coordinator: Istanbul University Faculty of Health Sciences

Supported by: Istanbul Development Agency.

Contacts:http://www.ahmetakgul.com.tr/index.php/uzmanliklar/gerontoloji-yaslanma-bilimi/1920-ist-getam-projesi-hayata-geciyor

2) 'Socio Cultural Event Center Project for the 3rd Year'

Date of creation: 2016

Description: The project activities provided the elderly to be included in the social processes through group work and ensure that they hold on to life. Project was carried out over a period of 9 months. Occupational therapy, exercise, mental exercise games, reading sessions, nutrition recipes, exercise skills testing, skill development, computer and smart phone trainings, dance, floriculture, theater and film activities, gains and behaviors were monitored in this project. A large-scale survey study was conducted and all sociocultural activities and home care technologies were investigated.

Coordinator: Medical Tourism Association

Supported by: Ankara Development Agency, Ankara University, Hacettepe University, Ankara Provincial Directorate of Family and Social Policies, Flavius Polyclinics and Samsung Turkey

Contact:http://www.yaslibakimiturizmi.com/icerikler/54_uzmdrsinan-ibis

3) Life is a Game Project

Date of creation: 2016

Description: The aim of the project is to elucidate the development of Alzheimer's disease which may occur in later ages by using cognitive skills such as problem solving skills, observation, synthesis, brain gymnastics, reasoning exercises, memory technique. Intelligence games courses were opened for adults over 60 years. Seniors who participate in the courses activate different parts of the brain with 15 games each with its own strategy.One day a week, two hours on the course with the seniors are played intelligence games

Coordinator : Antalya Muratpaşa Municipality

Supported by: Zekalabs: The Power Conversion Company

Contact: https://muratpasa-bld.gov.tr/haber/20609/3/alzheimere-karsi-zeka-oyunlari-kursu