University Enhancing the Smart Active Ageing

FINAL PROJECT REPORT

Miroslava Tokovská – Jana Šolcová – Tímea Šeben Zaťková (Eds.)

Kristiania University College in Oslo, Norway

Matej Bel University in Banska Bystrica, Slovakia

University of Ss. Cyril and Methodius in Trnava, Slovakia

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Tokovská, M. - Šolcová, J. - Šeben Zaťková, T. et al.

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Name, title, and organisation of the scientific representative of the project's leader and coordinators:

Project Leader

PaedDr. **TÍMEA ŠEBEN ZAŤKOVÁ**, PhD.

University of Ss. Cyril and Methodius in Trnava, Slovakia

Faculty of Arts, Department of Education

E-mail: timea.seben.zatkova@ucm.sk

Project Partner

Mgr. **JANA ŠOLCOVÁ**, PhD.

Matej Bel University in Banska Bystrica, Slovakia

Faculty of Pedagogy, Department of Social Work

Email: jana.solcova@umb.sk

Donor Project Partner

PhDr. **MIROSLAVA TOKOVSKÁ**, PhD.

Kristiania University College in Oslo, Norway

Schools of Health Sciences, Department of Health and Exercise

Email: miroslava.tokovska@kristiania.no

PREPARED BY THE PROJECT TEAM INCLUDING EDITORS AND CONTRIBUTORS:

Project Leader

PaedDr. Tímea Šeben Zaťková, PhD.

Project members from the University of Ss. Cyril and Methodius in Trnava, Slovakia:
doc. Mgr. Mariana Sirotová, PhD.

doc. Ing. Jana Jurinová, PhD.

PaedDr. Miroslav Ölvecký, PhD.

PhDr. Dominika Doktorová, PhD.

PhDr. Gabriela Siantová, PhD.

Mgr. Veronika Michvocíková, PhD.

Mgr. Marián Hosťovecký, PhD.

Mgr. Lukáš Kurajda, PhD.

Mgr. Barbora Vyskočová

Mgr. Anna Neslušanová

Mgr. Mária Beňová

Martina Žiaková

Project member from Matej Bel University in Banská Bystrica, Slovakia:

Mgr. Jana Šolcová, PhD.

Project Co-Leader & Donor project partner from Norway

PhDr. Miroslava Tokovská, PhD.

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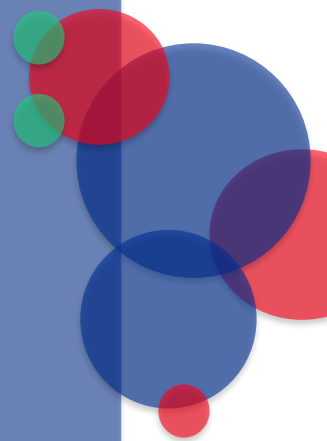
Rewievers:
doc. PhDr. Marián Ambrozy, PhD., MBA.
International School of Management Slovakia in Prešov, Slovakia

Mgr. Eva Bačkorová, PhD.
Trnava University in Trnava, Slovakia

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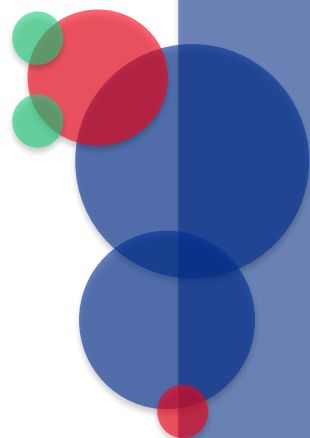
Ing. Miroslav Beňo, PhD.
Mgr. Marián Hosťovecký, PhD.

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Slovakia's population has aged considerably in the last 20 years. According to the 2001 Census of Population *Houses and Flats*, 11.4% of the population in Slovakia was of post-productive age (65+). By 2011 this figure had risen to 12.7%, and from 2021 the over-65s will make up more than 17 % of the Slovak population. The ageing index (which is defined as the number of people of post-working age measured against those of pre-working age) has increased exponentially with each census. In 2001, the ageing index was 60.2; In 2011 it was 82.6, and in 2021 it exceeded 107 (TASR, 2023).

Ageing, a natural process connected to each human being, is the main concept of this report and project. Ageing influences every aspect of our life; it is the accumulation of physical, psychological and social changes in a person over time. Typically, reaction time slows with age, while memory and general knowledge increase. The challenges of an ageing population and the societal adjustments needed to support the increase in life expectancy are issues that the project leaders, realising that they themselves are also ageing, wanted to resolve. This was investigated through the question: 'How can ageing be made "active" and "smart", and how can we use welfare technologies to enhance this process?' This question is not only the concern of the project team members, but it is of great importance globally.

The seeds of this international cooperation were borne when the COVID-19 pandemic brought two people previously unknown to each other together in a small Slovak village; both were volunteers administering COVID-19 tests. They exchanged their contact details and then forwarded them to other like-minded colleagues, started online discussions and further developed their social network, which culminated in approval for a cooperative research project in 2022.

The main idea of the project entitled 'University Enhancing the Smart Active Ageing' was created during the numerous friendly online discussions under the influence of the professional and scientific focus of the main researchers from the three partner institutions of the project: Timea Šeben Zaťková (UCM in Trnava), Miroslava Tokovská (Kristiania University College, Oslo), and Jana Šolcová (MBU in Banská Bystrica). Inspiring conversations led to finding a commonality among the professional focus of the three leaders; this lay between the topics of public health with the focus on ageing, social work, and higher education pedagogy, which the researchers were keen to explore further. Other professionals from the fields of psychology, linguistics, and

informatics were contacted to join the project team, and the successful project cooperation began.

This report from the project has been prepared by a Slovak-Norwegian multidisciplinary team of university lecturers, based on an initiative to promote the development of closer cooperation between Slovakia and Norway. The strengthening of bilateral cooperation between Slovakia and Norway is focused at the institutional level between higher education institutions, secondary schools and the private sector (BIN SGS02) with the aim of increasing the quality and importance of education and training in Slovakia in the area of welfare technologies and assistance to older adults and sick people in independent living. This kind of initiative is a good way to exchange experience in education and science, and to deepen cooperation in the common areas of interest, in the future.

A theoretical-practical approach was applied during the life cycle of the project. This consisted of a review of literature, creation of curricula and study materials, and practical educational and dissemination activities and publishing. The report starts by highlighting the smart welfare technologies and their possibilities of implementation and discusses details of the ageing population. The text is further expanded by a brief description of the project partners, their objectives and innovativeness, the results of the research, dissemination activities, and the feedback from the participants of the teaching activities. Some of the impacts of this project may not be immediately visible, but they are significant and will manifest themselves in the medium and longer term.

The added value of this report is the identification of common challenges experienced in university education in promoting the concept of smart active ageing, which we attempt to resolve by sharing experiences from two different countries and cultures, exchanging best practice, and developing common strategies and methodologies for improvement. We hope that the results of the report will increase awareness of the concepts of smart active ageing and welfare technologies, not only in Slovakia but also in other countries. The expected benefit is the contribution of information from the Norwegian system and Scandinavian society and the inspiration and application of the acquired knowledge to the education at universities in Slovakia.

Editors

CONTENT

The University Enhancing the Smart Active Ageing (UESAA) project was motivated by the fact that the European population is ageing, social differences between the older adult population of Western and Eastern Europe are deepening, and the digitalisation of administration, public services, electronic communication and virtual leisure activities is increasing. Thanks to scientific progress, the development of technology and the improvement of the provision of health services, people will live longer despite having chronic conditions; the average length of life will gradually increase and the ratio of older adults to the working-age population will also increase. The present time offers a variety of digital tools for smart active ageing, and educational institutions such as universities are ready to educate young people, as well as older people, in their use and benefits.

The report 'University Enhancing the Smart Active Ageing' is oriented in the field of higher education pedagogy with the intent of promoting the issue of active smart ageing among the various age groups attending the universities. The main focus is the promotion of the concept of welfare technologies among older adult people. The concept is divided into the following areas of knowledge and skills improvement: smart home; safe communication; technology for independent living.

The project activities were targeted at several groups of participants:

- Promotion of the concept and preparation of first-year students in bachelor studies for active ageing.
- Promotion of the concept among students of study programmes for helping professions.
- Promotion of the concept among older adults - participants of the education provided by the University of Third Age (U3A).

Activities within the project will lead to the development and implementation of innovative curricula and methodology for the target groups, scientific studies and other publications.

In the future, it will be a challenge to maintain today's quality of care. Welfare technology may be a solution to reducing the expected care crisis. The public healthcare system is influenced by new public management ideals such as *'What can we afford?'* rather than *'What are the needs of our patients?'*. Questions concerning patients' rights, along with healthcare providers' moral obligations, seem

to be less important than the cost. Welfare technology for the older adults is digital technology used to maintain or increase the security, activity level, participation or independence of people with disabilities, e.g., older adults. Education endowing awareness of the possibilities of welfare technologies is a crucial point in the project and the related development of digital competence. The project is aimed at the education of older adults, but helping professionals and higher education students will find it useful in their work with the older adults and in within the process of their own active ageing.

This report, prepared by an international team of lecturers from three universities (two from Slovakia and one from Norway) provides an overview of planned, implemented, and evaluated activities and dissemination. The editors hope that this report can inspire other educational institutions to collaborate, with a focus on disseminating knowledge between young and old adult students, thereby promoting the concept of smart active ageing.

INTRODUCTION

Welfare technology and ambient assisted living technologies are used on a larger scale in developed European countries and thus play a key role in ensuring a safe life at home for older adults. This type of technology is also used in assisted eating, rehabilitation, control of vital functions, and in social contact.

Several recommendations and the identification of challenges in relation to public policies relevant to older people have been formed by international institutions. All are based on the principles of respect for human dignity and the development of prosperity and civil liberties (Office of the National Council of the Slovak Republic, Department: Parliamentary Institute, 2020). The issue is covered in particular by the following documents: UN Principles for the Older Adults (addressing the principles of independence, participation in society, care, self-realisation and dignity); Recommendations on Ageing and Disability in the 21st Century by the Council of European Committee (2009): Sustainable Frameworks for a Higher Quality Life in an Inclusive Society; the European Social Charter (which describes measures to promote full citizenship and an active social position, along with the promotion of independent living in the preferred environment); European Charter of the Rights and Responsibilities of Older People Dependent on Long-Term Care and Assistance (2010) (which describes measures to ensure the right to dignity, well-being, freedom and security, the right to self-determination, care, information and counselling, communication and social participation)**;** and other similar papers**.**

National documents concerned with long-term institutional care and lifelong learning for the older adults are usually based on international documents concerned with the well-being of the older adults. The ageing of the Slovak population brings important demographic changes, namely a growing population above 65 years of age and the growth of 'very old people' (aged 80+) **-** so-called 'double ageing'. Double ageing will be of immense economic, social and medical importance. The ageing index has been increasing in Slovakia in the last decade, the turning point being in 2018 when the number and share of older adults for the first time in history exceeded the number and share of children; in this year there were 102 people aged 65 and over for every 100 children.

The latest forecast of the population of Slovakia points to a continuing increase in the ageing index; by 2060, the final year of the projection, there will be up to 220 people aged 65 and over per 100 children under the age of 15. Current research points out that the most significant demographic trend will be fully reflected at the regional level (Bleha et al., 2018, Repková, 2020; Forecast of the population of Slovakia until 2060, Demographic Research Center**:** Infostat, 2024).

The National Programme for Active Ageing for the years 2021-2030 (hereinafter referred to as the 'NPA') is a direct follow-up to a previous document called The

National Programme for Active Ageing for the years 2014-2020. The NPA builds on the results of the European project Active Ageing Index, which approaches active ageing in a unity of four basic domains:

Our project concerning older adults corresponds to the following within the NPA programme:

Area 1: Support for active ageing from a family perspective.

- Objective 3: Creating conditions for the retention of older people in the home environment through the development of community social services.

Area 2: Support for human resources in the lifelong cycle.

- Objective 2: Implementation of digital skills development programmes for older people within the digital coalition and through IT.

Within Area 2 (goal 4) the NPA also examined the need for our secondary target group of the project (future helping professionals):

- Goal 4: Qualified human resources for working with the target group of older people in the field of silver digitalisation.

As part of the project, we reviewed experiences and measures established by Nordic Ambient Assisted Living – Welfare Technologies for Active and Independent Living at Home in Norway, which were implemented in 2019. They focused on these areas:

- The safety of older people living at home.
- Assistive technologies and devices.
- Rehabilitation and disease management.
- Robots and automation.
- Digital solutions and smart platforms for the older adults.

Nordic welfare solutions promote health and welfare technologies and apply them to the future of health and care services (Nordic Council of Ministers, 2019). Welfare technology supports innovative technologies that contribute to increasing the quality of life for everyone with needs related to their care and well-being, no matter what their age or the type of impairment. Innovation within welfare technology is of increasing importance as the European welfare state faces challenges and mounting pressure. A steadily increasing life expectancy accompanied by a decreasing birth rate are just two of many reasons that demonstrate why our future welfare will depend on innovative, technological solutions. The purpose of welfare technology as a focus area is to support innovation which contributes towards assisting people of all ages with impairments, no matter the type, and to allow them to be more self-sufficient and autonomous in their day-to-day life (Innovation Norway, 2022).

Welfare technology is an important tool for, among other things, enabling the 1,200 or so municipalities in the Nordic region to handle the pressure of an ageing population and to continue to provide high-quality social welfare. There are quite large differences in how the Nordic countries use welfare technology; everyone agrees, however, that technology is an important way to reduce the pressure on care and welfare (Andersson, 2022).

Welfare technology is defined as 'technological assistance that contributes to increased security, safety, social participation, mobility and physical and cultural activity, as well as strengthening the individual's ability to cope in everyday life despite illness and social, mental or physical disability. Welfare technology can also function as technological support for relatives and help to improve availability, resource utilisation and the quality of services. Welfare technology solutions can, in many cases, prevent the need for services or admission to an institution (Metling & Frantzen, 2015).

Examples of welfare technology include the following:

- For increased security: security alarm, mobile phone, mobile alarm with GPS, video entry system and surveillance webcam.
- For increased activity and participation in society: rollators, electric wheelchairs, hearing aids, vision aids, internet services, video communication, technical support for reminders and structure in everyday life.
- For a more independent life: mobility aids, cognitive aids such as medication reminders, products for remotely controlling the TV, lighting, and automatic doors. Additionally, there are information and communication technology services (ICT services) and products that make shopping, banking and contact with the authorities easier.
- Support for relatives: ICT services that support communication with other relatives or care and welfare staff, hoists, auxiliary engines for manual wheelchairs, and motion detectors.
- Support for day-to-day living: mobile apps, such as those assisting people with impaired hearing or vision. Apps containing pictograms can help people with reduced cognitive function to communicate (Andersson, 2022).

Examining the possibilities and potential of welfare technologies will strengthen institutional cooperation between higher education institutions in Slovakia and Norway.

1. DESCRIPTION AND ROLES OF THE PROJECT PARTNERS

MAIN APPLICANT - THE UNIVERSITY OF SS. CYRIL AND METHODIUS IN TRNAVA (UCM), SLOVAKIA

The main mission of the University of ss. Cyril and Methodius in Trnava, Slovakia is to protect and disseminate knowledge and develop education which is based on scientific knowledge and creative scientific and artistic activity, in the spirit of national and universal humanistic and democratic traditions. The activities of the university contribute to the development of education as a part of the culture of the whole society and, at the same time, contribute to the increase of the scientific, technical, and economic level of the region. UCM was founded on the 1st of August 1997 and is a young and dynamic university with 20+ years of tradition, representing the biggest university among the three universities housed in Trnava. UCM has five faculties and one institute, 130+ accredited full-time study programmes, more than 215 cooperation agreements and 165 mobilities per year. The university offers a classic range of university education opportunities at all three levels and forms of university studies in the areas of teacher preparation, social issues, economy and management, media studies, politics, humanities and natural sciences, and health sciences. Furthermore, it implements lifelong learning in a variety of courses and forms of the studies at UCM, e.g., Children's University and the University of the Third Age.

DONOR PROJECT PARTNER - KRISTIANIA UNIVERSITY COLLEGE (KUC), NORWAY

Kristiania University College (KUC), established by Ernst G. Mortensen in 1914, is one of the oldest private institutions of higher education in Norway and a member of the European University Association. In 2016 a plan was drawn up and implemented which is actively and effectively enabling the institution to become Norway's first private, specialised university – a Working Life University - by 2030. Important steps have been taken to achieve this goal, including the strengthening of research and internationalisation activities for academic and administrative staff. Further strategy includes the development of research cooperation with business and industry and other research institutions, artistic work at a high international level, and contribution to solving great social challenges. Through an innovative and student-led learning environment, KUC offers practical-oriented and relevant study programmes that comply with the needs of society and prepare the candidates for life after graduation. Kristiania's academic activities are organised in four faculties – School of Economics, Innovation, and Technology; School of Communication, Leadership, and Marketing; School of Arts, Design, and Media; and School of Health Sciences.

The donor project partner contributed to the development of a study programme in the scope of two semesters (one year) intended for participants of the University of the Third Age (U3A). Furthermore, KUC participated in the development of educational methodologies for assisting professionals in the field of education and social work. The donor project partner led a research group and had responsibility for the implementation and publishing activities and dissemination of the project results. KUC also actively participated in project meetings and the implementation of knowledge for all participants in the field of welfare technology (participation in educational activities in the combined form of teaching).

PARTNER - MATEJ BEL UNIVERSITY IN BANSKÁ BYSTRICA (MBU), SLOVAKIA

Matej Bel University (MBU) is a public university which achieved university status in 2010 and is a member of the European University Association. The university provides both high-quality university and further education by encouraging creative scientific and artistic research. The university offers a classic range of university education opportunities at all three levels and forms of studies in the areas of education, social issues, economy, law, politics, humanities and natural sciences, in the fields of international relations, economic specialisations, and mathematics. MBU graduates are equally at home in finding their place working both in Slovakia and internationally. The university is a centre of research excellence, and scientific and development projects are funded utilising European Structural Funds. Furthermore, it implements lifelong learning in a variety of courses and forms through the MBU Children's University and the MBU University of the Third Age.

Matej Bel University (MBU) is a partner in this international project. MBU contributed to the creation of a study programme, teaching activities, and lectures and participated in the development of educational methodologies for assisting professionals in the field of social work. The project partner was a member of a research group and contributed to the implementation, publishing activities, and dissemination of the project results.

2. MAIN OBJECTIVE OF THE PROJECT

The project aims to promote the issue of active smart ageing among the various age groups attending universities. The following objectives were formulated:

- Development of the modules for the curricula of the University of the Third Age at UCM in Trnava - the content of the modules are oriented in the field of welfare technologies, digital skills improvement and active ageing (the benefits will be for both Slovak universities - UCM in Trnava will establish the Course at The University of the Third Age as the direct result of the project, but the curricula can be implemented at MBU in Banská Bystrica and other Slovak universities providing education in the form of Universities of the Third Age).
- Implementation of the issues of active ageing and welfare technologies into the existing courses for the preparation of helping professionals and development of the methodology for the teaching (future teachers, psychologists, social workers) at UCM in Trnava and MBU in Banská Bystrica.
- Promotion of the concept of active ageing among the students in higher education (implementation of the topic to the curricula of the existing Courses, e.g., Propaedeutics into Higher Education - taught at UCM in Trnava; Introduction to the Study - taught at MBU in Banská Bystrica).
- Creation of an international scientific research team – interdisciplinary research team (all three partners will immediately benefit from the exchange of knowledge and experience among the involved higher education institutions, strengthening the publishing and research cooperation).
- Promotion of the concept of active smart ageing (dissemination of the results will lead to developing the awareness of the concept among various age categories and can positively contribute to the social inclusion of the older people, their digital skills development, and also to the development of the knowledge and opinions on active ageing among the younger generation).

3. INNOVATIVENESS OF THE PROJECT

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Our solutions are based on enhancing the active smart ageing issues across the education of the different age groups, and not only the primary target group of older adults. This is an innovative concept in Slovakia because these issues are currently solved only in conditions of specific study fields (e.g. gerontology, adult learning, and social work); they are generally not mentioned in the preparation of other professionals, even though ageing a day-to-day issue connected with the general public. The methodology of teaching welfare technologies and active ageing is also new for Slovakia and consists of peer-to-peer learning and establishing a peer-to-peer network (among older adults), service learning, and the practical activities of the learners.

We are confident that our findings and the establishment of our learning systems will lead to the development of digital competencies and smart technologies promotion. Digital technology offers great opportunities for the present and future and for many people, especially those with disabilities and the older adults, technology means a big change and an increased quality of life; if digital technology is used correctly, it is a tool that increases participation and equality while ensuring that human rights are fulfilled.

4. DESCRIPTION OF PROJECT TARGET GROUPS

The results of the project will be advantageous for higher education students of any age. The following examples outline some of the benefits that each age group could experience:

- Young adults (age 18-29) - outputs of the project will lead to improvement of their awareness of the issues of active ageing and the development of their social attitudes toward older adults.

- Adults (age 30-64) - an increase in the awareness of the issue of active ageing, promotion of the methodology of teaching the content connected to the issue, and the development of digital skills.

- Older adults over 65 - the development of digital skills and the promotion of the possibilities of welfare technologies implementation in their day-to-day life.

- Since many older adults have a disability, the project will additionally indirectly address all people generally with disabilities and the findings could also be of use to them.

The results of the project are published and freely accessible for the general public, professionals and academic researchers.

5. LIST OF THE MAIN RESULTS

The main activities and milestones achieved during the project are:

- Project management activities.
- Kick off meeting.
- U3A programme development and teaching.
- Active ageing issues implementation into existing higher education courses.
- Project meeting two.
- Dissemination and publishing activities.
- Monitor meeting in Oslo.
- Development of methodology for helping professionals.
- Online meeting four.
- Scientific conferences: Conference EDUCOM 2022, Conference EDUCOM 2023.
- Final meeting in Oslo.
- Closing conference.

6. FEEDBACK FROM THE OLDER ADULT STUDENTS

During September and October 2023, an online survey interview was emailed to 21 older adult students. This survey invited feedback on the course concerning the newly acquired skills of the participants. The online questionnaires were analysed, coded, and organised by topic area.

The demographic and education of the sample was as follows: 84.16% were female and 15.84% male; 66.66% were aged 65-70; 33.44% were aged 71-81; 13% left education without a diploma, 60% have a high school diploma, 7% have a college education at level one, and 20% have a college education at level two.

The survey was led by the following questions:

1. How do the respondents rate the atmosphere of the training?
2. How do the respondents rate the quality of the training lecturers?
3. How do respondents rate their level of knowledge and skills acquired in the field of smart technologies under the influence of the training received?
4. What are the views of the participants on further opportunities for their training?

After the training, participants declared the following views and attitudes:

1. The atmosphere of the training was evaluated positively by all (100%), and all participants would recommend the training to their friends.
2. They considered the teachers in the course as experts (100%).
3. The knowledge, experience and skills acquired were considered by all participants (100%) to be useful in their personal lives. All participants also responded positively to the question 'I think that by taking this course I am a more experienced user of smart technologies than before the course.'
4. Participants' opinions that touched on improving their continuing education opportunities included several recommendations that fall under the specific principles of senior education.

Some of the suggestions for improvement expressed by the participants (P) are as follows:

P1: '*The group should be split into at least two groups each time, more Thursdays.*' P3: '*I am satisfied.*' P5: '*More repetition.*' P10: '*More work on the PC.*' P12: '*You're all great, slower interpretation would be nice.*' P13: '*More computer work.*' P14: '*Split the student group in half.*' P15: '*Fewer participants in one class.*' P17: '*Make students into*

smaller groups, allowing more time to review and master new ICT knowledge, a slower pace.' P20: '*Improve the availability of computers for participants.*'

Suggestions to increase the motivation of older adult's participants:

P2: '*Keep the participant as involved as possible.*' P4: '*Giving homework on everything that has been covered, so that it is clear that everyone has mastered the material.*' P6: '*Demonstrate the use and importance of the taught content.*' P7: '*Reduce the density of theory and slow the pace.*' P10: '*Assign homework as well.*' P15: '*More practice.*' P17: '*This is individual, everyone has to motivate themselves.*' P19: '*Smaller groups, slower pace.*'

Suggestions of further topics to be covered in the course:

P1: '*More practice.*' P3: '*Active ageing.*' P7: '*Working with a tablet.*' P9: '*None.*' P11: '*Internet banking.*' P13: '*Apps, e.g., city data, for parking.*' P17: '*Paying invoices via tablet.*'

Other forms of education participants would prefer:

P1: '*More time on learning how to work with a PC.*' P2: '*A more personalised approach.*' P3: *More PC time.*' P4: '*Fewer students to allow the lecturer to spend more time with them individually.*' P5: '*More hands-on teaching and demonstrations.*' P6: '*Practice.*' P7: '*More PC work.*' P9: '*Some teachers should slow down and wait to see if everyone has done the task and if they understand.*' P10: '*The form is fine; we are just slower (at learning) now.*' P12: '*Do it on paper as well.*' P13: '*Better computers.*' P14: '*I am satisfied.*' P16: '*More practice, less theory.*' P17: '*Fewer students per teacher.*' P18: '*Smaller groups, more time to repeat each task on the PC.*' P21: '*Give printed handouts as I can't see the presentation.*'

These comments indicate that participants require their own pace, they need to have clear and illustrative written information, and they prefer maximum time for practical activities and minimum theory; they also want time to repeat the steps in the teaching and to make sure that they have enough opportunity to try practical activities themselves. Compared to our experience with younger students, older adults strongly prefer the emphasis on fixation and repetition of new knowledge, even in the form of homework and assignments.

The questionnaire on the quality of the course was filled in by 17 participants (four did not respond), and the results are shown in Table 1.

Table 1: Evaluation of the overall course quality

The scale of evaluation	value 0 - I am completely dissatisfied	value 1 - I am dissatisfied	value 2 - I am rather dissatisfied	value 3 - I am rather satisfied	value 4 - I am satisfied	value 5 - I am completely satisfied
Content of the course				1	11	5
The achievement of the stated educational objectives				9	5	3
Knowledge of lecturers					2	15
Satisfaction with teachers' approach to students			1	1	3	12
The level of communication between teachers and students				1	5	11
Forms of education used				2	8	7
Education methods used				3	7	7
Availability and willingness of teachers				3	4	10
The time allocation for the training content		1	1	6	4	5
Accessibility of the training location				1	3	13
How do you rate the training timetable				2	4	11
Material technical and spatial equipment of the site		1	4	4	6	2
Communication of the organisers (administrative worker) with the participants during the course				2	1	14

7. FEEDBACK FROM THE YOUNGER STUDENTS

On March 6th, 2024, an online lecture on the theme of 'Social Work with Older Adults' was conducted at Matej Bel University in Banská Bystrica. It was titled 'Inclusive Ageing, Alzheimer's Disease and Smart Active Ageing' and was delivered online by Miroslava Tokovská, PhD. (Kristiania University, Oslo, Norway, Donor Project Partner) for ten bachelor students. We updated the subject information sheet with the new topic, focused on innovative approaches in working with older adults.

On February 9th, 2024, Miroslava Tokovská PhD. (Kristiania University, Oslo, Norway, Donor Project Partner) conducted a lecture and discussion with master´s degree students within the subject 'Activation of Older Adults' on the topic of using smart welfare technologies for the activation of older adults in social services. The lecture was attended by ten students. The students then prepared presentations for the local nursing homes through which they selected the available mobile applications. The aim of the presentations was to present and help teach older adults how to control applications in the field of smart medicine dispensers and how to enlarge fonts and numbers on a mobile phone.

Evaluation and feedback of education for students was positive. Some of the students' (S) opinions were as follows:

S2: *'The teacher clearly explained the topic being taught.'*

S4: *'The teacher presented the learning material in an attractive way and she was able to arouse interest.'*

S6: '*The classes were stimulating and inspiring.'*

S10: *'Preparing the presentation and working with the older adults to install and operate the application was very useful. I think she will make life better for older adults and she taught me what is important in teaching older people.'*

On September 9th, 2023, a lecture was delivered by Miroslava Tokovská, PhD. to university students studying to be teachers at the UCM in Trnava. The subject was 'Mental Health Promotion in the Teaching Process'. The topic was discussed in the course of General Didactics. The students were interested in the presented topic and there was a lively discussion on several aspects of the Norwegian system of education.

Some of the students´ opinions were as follows:

S3: '*There is much to learn from the good practices of the Norwegian schools, it would be great to have such an inclusive educational system in Slovakia as it is in Norway.*'

S7: *'It is a good experience to learn something from a foreign country's perspective.'*

S8: *'The lecture was inspiring.'*
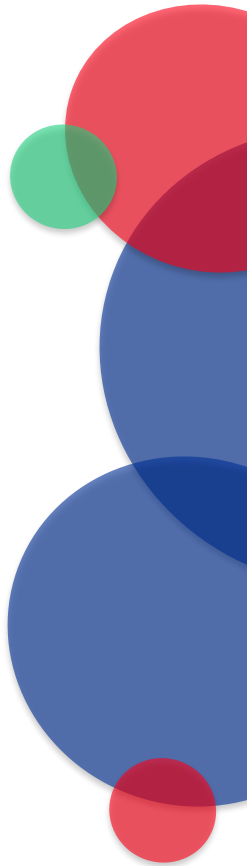
8. SOCIETAL IMPLICATIONS OF THE PROJECT AND EXPLOITATION OF RESULTS

The UESAA project demonstrated how smart and welfare technology can improve well-being and increase the quality of life for older adults in Slovakia. Furthermore, the UESAA developed and evaluated collaboration between three universities. This collaboration will continue with new projects and cooperation between the associate professors involved, with other research planned with a focus on cross-cultural perspectives, older adults, people with diverse disabilities and smart technology.

The societal implications of the smart active ageing project are multifaceted. By integrating smart technologies, personalised health monitoring systems, and tailored educational programmes, we aim to enhance the well-being and independence of older adults within our community. This project emphasises the potential of robotics and ICT to enhance the quality of life for older adults and highlights the role of older individuals in addressing local community issues. Information and communication technologies also can significantly improve the quality of life for the older adults but may also lead to social exclusion. Members of this project all agree on the need for tailored policies and strategies to support active ageing, with a focus on economic development.

Beyond the technological advancements lies a profound consideration of the societal implications of our work. We recognise the importance of addressing ethical, social, and cultural dimensions to ensure that our project delivers technological solutions and fosters inclusivity, dignity, and respect for older adults in Slovakia. Central to our approach is the responsible use of our results. We are committed to transparently sharing our findings with stakeholders, including policymakers, healthcare providers and community organisations, to maximise the societal benefits of our research. Moreover, we prioritise equitable access to our innovations, striving to bridge digital divides and ensure that all older adults, regardless of socioeconomic status or technological proficiency, can benefit from our efforts. We also aspire to enhance the quality of life for older adults and contribute to a more age-friendly society that values and supports the diverse needs and contributions of its ageing population.

Overall, the societal implications of the project and the responsible exploitation of its results require thoughtful consideration and proactive measures to ensure that the project contributes positively to society while minimising potential harms. Collaboration among stakeholders, including researchers, policymakers, industry representatives, and community members, is essential for navigating these complex challenges effectively.

9. DISSEMINATION ACTIVITIES, INFORMATION AND SCIENTIFIC PUBLICATIONS

Table 2: List of dissemination of information and scientific articles during project period

No.	Authors	Title	Type of the text	Information	Place
1.	Miroslava Tokovska	Bidrar i EØS-prosjekt om velferdsteknologi for eldre	Article on intranett at KUC	Issued February 2023	Norway
2.	Linda Anette Kvalsvik & Miroslava Tokovska	'Life does not feel hopeless anymore...' A Qualitative Study about Social Support	Original article (in English)	Published https://doi.org/10.32725/kont.2023.043	Czech Republic
3.	Miroslava Tokovska, Vanessa Nolasco Ferreira, Anna Vallusova & Andrea Seberini	eGovernment – the Inclusive Way for the Future of Digital Citizenship	Original article (in English)	Published https://doi.org/10.3390/soc13060141	Switzerland
4.	Andrea Seberini, Katarina Izakova & Miroslava Tokovska	Greenwashing - The Dark Side of Eco-Friendly Marketing. A Case Study from Slovakia	Original article (in English)	Published https://doi.org/10.21697/seb.5800	Poland
5.	Timea Šeben Zaťková, Jana Šolcová, Ľubica Jamborová & Miroslava Tokovska	Slovak University Students' Knowledge about Smart Active Ageing and Welfare Technologies: An Online Survey interview	Original article (in English)	Will be published: Emerging Science Journal	Italy
6.	Jana Šolcová, Timea Šeben Zaťková & Miroslava Tokovska	Perception and Experience of Smart and Welfare Technologies Among Slovak Older Adults	Original article (in English)	Will be published: The Social Studies	USA
7.	Timea Šeben Zaťková, Miroslava Tokovska & Jana Šolcová	What Psychosocial Support Do University Students Need? A Mixed Creative Methods Study	Original article (in English)	Published https://doi.org/10.56300/AXLK4968	Malta

8.	Miroslava Tokovska, Dominika Doktorová & Jana Šolcová	Promoting of Cognitive Health and Sustained Attention in Adults and Older Adults Through e-Games	Original article (in English)	Journal of Social Studies Education Research	Turkey
9.	Dominika Doktorová, Jana Šolcová & Miroslava Tokovska	Association between Scrabble, Memory, and Self-Efficacy in adults	Original article (in English)	European Journal of Investigation in Health, Psychology and Education	Switzerland
10.	Timea Šeben Zaťková, Marian Ambrozy, Miroslava Tokovska & Jana Šolcová	University Students' Perspectives and Attitudes towards Ageing and Older Adults	Original Article (in English)	AD ALTA	Czech Republic
11.	Jana Šolcová, Timea Šeben Zaťková & Miroslava Tokovska	Enhancing the Adaptation of First-Year Undergraduate Students Through Person-Centred Thinking	Original Article (in English)	AD ALTA	Czech Republic
12.	Timea Šeben Zaťková	Na UCM vzdelávame aj seniorov. Naučili sme ich pracovať s počítačom a smart technológiami	Article in magazine Atelier	https://www.attelier.sk/ako-sa-naucit-pouzivat-pocitac/	Trnava
13.	Miroslava Tokovska, – Jana Šolcová & Timea Šeben Zaťková et al.	University Enhancing the Smart Active Ageing	Final Project Report (in English)	https://doi.org/10.24040/2024.9788055721460	Online

Table 3: List of dissemination activities

No.	Type of activities	Main Author	Title	Date	Place and the audience
1.	Lecture	Miroslava Tokovska	Inclusive Ageing, Alzheimer's Disease and Smart Active Ageing	09.02.2023	Banska Bystrica, Slovakia/ University Master Students
2.	Lecture	Miroslava Tokovska	Inclusive Ageing, Alzheimer's Disease and Smart Active Ageing	06.03.2023	Banska Bystrica, Slovakia/ University Bachelor Students
3.	Lecture	Miroslava Tokovska	Mental Health Promotion in the Teaching Process	19.09.2023	Trnava, Slovakia / University Bachelor Students

Table 4: List of scientific (peer reviewed) publications

No.	Title	Main Author	Language	Citation
1.	Pedagogica Actualis XIV. - Podpora a inklúzia vo vzdelávaní I./ Support and Inclusion in Education I.	Tímea Šeben Zaťková-Veronika Michvocíková (eds.)	Slovak	Šeben Zaťková, T., Michvocíková, V. (eds.) 2023. Pedagogica Actualis XIV: podpora a inklúzia vo vzdelávaní 1. Trnava : Univerzita sv. Cyrila a Metoda v Trnave, 333 s. ISBN 978-80-572-0329-2. Available at: https://ff.ucm.sk/docs/EE_Grants/PEDAGOGICA_ACTUALIS_XIV_online.pdf
2.	Book of Proceedings EDUCOM 2023 - Aktuálne trendy psychosociálnej podpory v edukácii a príprava na aktívne starnutie v procese inkluzívneho vzdelávania	Tímea Šeben Zaťková (ed.)	Slovak/English	Šeben Zaťková, T. (Ed.) 2023. EDUCOM 2023 : Education - Community : zborník abstraktov / Book of proceedings. Trnava : Univerzita sv. Cyrila a Metoda v Trnave, 2023. 27 s. ISBN 978-80-572-0408-4. Available at: https://ff.ucm.sk/docs/EE_Grants/EDUCOM_2023/Book_of_Abstracts_EDUCOM_2023.pdf
3.	Aktívne starnutie s využitím inteligentných technológií v edukácii	Tímea Šeben Zaťková, Jana Šolcová (eds.)	Slovak	Šeben Zaťková, T., Šolcová, J. a kol., 2024. Aktívne starnutie s využitím inteligentných technológií v edukácii. Trnava: Univerzita sv. Cyrila a Metoda v Trnave. 2024. 308 s. ISBN 978-80-572-0422-0. Available at: https://ff.ucm.sk/docs/EE_Grants/Aktivne_starnutie_s_vyuzitim_inteligentnych_technologii_v_edukacii.pdf
4.	Active Education in Older Adults with the Use of Smart Technologies	Jana Šolcová, Miroslava Tokovská, Tímea Šeben Zaťková (eds.)	English	Šolcová, J., Tokovská, M. & Šeben Zaťková, T. (Eds.) (2024). Active Education in Older Adults with Use of Smart Technologies. Belianum. UMB Banska Bystrica. ISBN 978-80-557-2136-1. Available at: https: 10.24040/2024.97880557 21361

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European Charter of the Rights and Responsibilities of Older People Dependent on Long-Term Care and Assistance. Available: https://www.age-platform.eu/sites/default/files/22204_AGE_charte_europeenne_EN_v4.pdf

University Enhancing the Smart Active Ageing

Final Project Report

Authors:

Miroslava Tokovská - Jana Šolcová - Tímea Šeben Zaťková - Mariana Sirotová - Jana Jurinová - Dominika Doktorová - Veronika Michvocíková - Gabriela Siantová - Marián Hosťovecký - Miroslav Ölvecký - Lukáš Kurajda - Barbora Vyskočová - Anna Neslušanová - Mária Beňová - Martina Žiaková

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