LEARNING TREE

Genealogy in preventing digital exclusion of seniors

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OPENING COMMENT

There is a fountain of youth - it is your mind, your talents, the creativity you stir up in your life, and the lives of the people you love. When you learn to draw from this source, you will truly overcome old age.

Sophia Loren (n.d.)

The Taino Indians believed that there was a source of eternal youth on the mythical island of Bimini. Juan Ponce de Leon, a Spanish sailor, and explorer, also believed in this legend. In 1513, he organized an expedition that resulted in the discovery of a new land - the peninsula we now know as Florida. The source, however, he did not find.

Have you ever wondered what it would be like to be forever young? If so, welcome to the world of the *Learning Tree* project[1]. A project that brought together generations, three countries - Poland, Italy, and Turkey, researchers and practitioners, teachers and students. Project participants discovered their talents, used their creativity, and shared their stories with those they love by building family trees. We invite you into the world of a project that answers the question of the source of youth.

There are seven chapters in the book. In each of them we try to answer different questions. In the first chapter you will find the answer to the question of what principles optimize the effectiveness of one of the learning systems. The author leads us through the concept of education in the didactics of seniors, points out the organization of the learning process in the classroom-lecture system and the principles that increase the effectiveness of educational work with the elderly.

[1] The project has been successful as a result of the Erasmus + KA2 Strategic Partnerships competition qualified for funding by the European Commission (project number: 2017-1-TR01-KA204-045897) in the framework of a collaboration between Nazili Public Education Center (Turkey), Pro Scientia Publica Foundation (Poland), Ithaca Training (Italy) in the period 01.09.2017-31.08.2019; scientific manager of the project Ewa Jurczyk-Romanowska, Ph.D.

Chapter two is a journey through the corners of genealogy. Where do we come from? Where are we going to? Why are we this way and not the other? These questions have accompanied man since the dawn of time. Today they are asked by genealogists, both those who deal with genealogy professionally, scientifically, and academically, and those who have come to know and love it as amateurs. In this section Grzegorz Mendyka and Kacper Manikowski guide us through the history of genealogy in Poland, Turkey, and Italy. They also point out the significant role of seniors as those who possess the richest knowledge of family history.

Chapter three introduces the importance of family photography, both in the context of genealogical research and the need to preserve what we experience. Through photographs, the dead can come alive, the absent become present, those who are far away seem closer. In the *Learning Tree* project, the seniors used family photos in creating a family tree. These photos provided a kind of bridge between the seniors and their descendants. For the grandchildren they were a treasured keepsake, for the older generation a sort of fountain of youth in which to see a wrinkle-free face.

Every journey begins with a destination. Just as the spring of youth was Ponce de Leon's destination, one of the goals for the seniors participating in the project was to make the virtual world a reality in their lives. Exploration of the unknown is often accompanied by apprehension and anxiety, sometimes fear, fear of the stranger. The authors of chapter four answer the question about what the seniors were most afraid of when they started to perform the tasks in the project, what their motivation was in the process of IT education and handling new technologies.

In the fifth chapter Krystyna Dziubacka, masterfully, like a navigator on a stormy sea of statistical data, presents the demographic profile of seniors and the extent of digital exclusion in each of the countries where the *Learning Tree* project was implemented. The author also presents the competencies and areas of online activity of seniors.

"Purpose is the reason you travel..." The words that open the sixth chapter are themselves an invitation to search for the answer to the question of the effectiveness of the training provided by the *Learning Tree* project. Ewa Jurczyk-Romanowska and Piotr Kwiatkowski reveal to us the didactic and research model that formed the foundation of the project and the numerical results of the research conducted. If anyone is looking for coordinates to guide a well-planned and executed activity, they will find all the indications here.

The journey through the project concludes with chapter seven, which presents the experiences of seniors in the *Learning Tree* project. Based

on the statements of the participants and trainers of the project, guidelines were developed that can be used in formal and informal adult education. It describes the benefits of participating in the project, but also the difficulties that the recipients encountered during its implementation. The chapter concludes with tips for educators.

We invite you to join us on this journey…

Chapter I

THE NEED TO LEARN IS NOT AGING[2]. REFLECTING ON THE CLASSROOM SYSTEM AND PRINCIPLES TO OPTIMIZE ITS EFFECTIVENESS

Back to school time, to the silver bell melody, is one of the ways of victory over time given to man in his earthly dimension. For we return to our school years like a wanderer to a clear spring.

Teresa Zaniewska (2000)

Introduction

Adult education, undergoing very dynamic transformations, has evolved in its essence from being identified with the process of teaching [the 1960s] through association with the process of teaching-learning [the 1970s-1980s] to the connotation of lifelong learning [the 1990s] (Skibińska, 2008). The metamorphosis has not contributed to a complete abandonment of the pioneering (alternatively "traditional") conception of the educational process emphasizing teaching, with the primary role of the teacher (expert/consultant-advisor), whose task is to prepare teaching activities in such a way that the learners - using all their potential - achieve the greatest possible success. Nowadays, it is not assumed that any one concept is better or more beneficial than the others, but in accordance with the theory of multilateral education, it is postulated that different ways of teaching-learning, different courses of lessons, should be used in combination. The choice of these is determined by many factors. In the words of Józef Półturzycki, "the first step of the lecturer or teacher should be to recognize how his students learn, what their experiences, achievements, and difficulties are" (Półturzycki,1991, p. 117). The second factor is the instructor himself. In this case, not only the personality of the teacher or the teaching style developed by him or her but also the didactic skills are important. In geragogy it is clearly

[2] Popular maxim.

emphasized that the teacher of the elderly must take on the role of a helper-facilitator, taking care to adapt the methodology of educational activities to the specific conditions, capabilities, and needs of people of advanced years (Matlakiewicz, Solarczyk-Szwec, 2005).

The need to support seniors is strongly emphasized by Walentyna Wnuk. According to the author, old age can be a beautiful time of life provided that we do not leave seniors alone, also in the field of education. “For only the elite will manage. The rest of the elderly need to be encouraged to be active and create the right conditions to be active” (Wnuk, 2007, p. 134). The third important factor is the premises in which the classes are conducted. Choosing one or the other option involves a different arrangement of the space needed for activities. Depending on whether the premises in which the classes are held do or do not allow for, for example, different ways of arranging desks and chairs, the choice of the organisation of classes will be wide or largely restricted (Półturzycki, 1991).

A significant determinant is also the specificity of the educational content itself and the learning goals and objectives. It is worth remembering that the didactic material is offered to seniors who already have a certain amount of knowledge and various possibilities for its assimilation. In this case, the instructor must demonstrate a particular ability to observe and accurately select the educational content. According to Jerzy Halicki (2000, p. 58) “women prefer humanities, while men prefer natural sciences”. However, this is not a rigid rule.

According to Marlena Kilian, the most popular issues among seniors include: connection with the past - telling about one’s own life, achievements, difficulties, which allows one to remember past events, reflect on them, integrate them, give them a timeless meaning, discover the meaning of life; understanding the modern world - the question of adapting to life in a world that has radically changed since childhood and youth; illness and disability - the fear of losing independence in life; death - loss of family members and friends relates to the theme of loss broadly defined as appropriate to older age; family - stories about spouses, children, and grandchildren - focus on family may result from the loss of other social and professional roles; loneliness - need to stay in relationships with others, meet new friends; finances - issues of cost of living, medical treatment; religious beliefs, issues of meaning in life; management of leisure time and areas of interest (Kilian, 2015). The author writes “thematic economy is recommended - the material will be better assimilated if it includes simple tasks, a limited number of issues presented, and the information is centered around a strong focal point” (Kilian, 2015, p. 174).

The concept of *education* in teaching seniors

Education is a complex and multifaceted sequence of interactions in the relationship between teacher (alternatively "educating subject") and student (alternatively "learning subject"). The definition of its meaning, which can be applied to the education of seniors, has been undertaken by many experts of the subject. Franciszek Bereźnicki defined education as a whole of activities and processes consisting mainly of teaching and learning. These processes are to support the achievement of not only a specific range of knowledge, skills and habits but also mental abilities, skills, interests, beliefs and attitudes leading to multilateral human development (Bereźnicki, 2004). Józef Półturzycki (1991, p. 121) agrees with this approach, stressing that it is "the whole of educational activities and processes, thus teaching and learning, and the fact that education can be organized by various institutions, as well as by individuals". Tadeusz Aleksander added:

> education is a kind of activity of the teacher and the learner, combining both education in institutions, specially established for organizing this activity, as well as the implementation of this activity informally and informally; (...) education not only realizes didactic goals, *i.e.*, affects the human mind, shaping it properly, but it is also an impact on the feelings and will of the learner, shapes his moral attitude and develops him in the aesthetic field (Aleksander, 2003, p. 866).

According to Wincenty Okoń, education is a process that occurs as "a sequence of events (single acts) ordered in time and involving such activities of teachers and students, directed by an appropriate selection of objectives, content, and taking into account such conditions and measures that serve to bring about the desired changes in students" (Okoń, 1996, p. 299). In another definition the author specifies "

> education is a set of activities (external and internal) that enable people to get to know nature, society, and culture and to participate in their formation, and at the same time to achieve the most comprehensive development of skills, abilities and aptitudes, interests and passions, beliefs and attitudes, as well as the acquisition of desired professional qualifications (Okoń, 1996, p. 141).

From the definitions mentioned above, it follows that education is not only a cognitive process that provides knowledge about the surrounding reality but also a process that prepares a person to function rationally in this reality. This preparation includes equipping him/her with the ability to use the knowledge he/she possesses and the ability to transform this reality, and appropriate professional qualifications, as well as comprehensive development of his/her

personality (Zarzecki, 2008). It should also be emphasized that education is not a single act, but a series of repeated activities of teachers and students, leading to the achievement of established didactic and educational goals. These activities are closely related to each other, one results from the other and consequently leads to changes in the current behavior of learners or to the formation and development of appropriate personality traits (Zarzecki, 2008). Undertaking educational efforts by seniors is, according to Robert D. Hill (2009), of fundamental importance for them, among other things, in the course of positive aging. It can be considered that education taking place at the stage of late adulthood becomes a part of the life of these people, creates opportunities to maintain and establish interpersonal contacts, provides an opportunity to find oneself and function without conflict in the postmodern world, and is also a source of conviction of independence (Kałużny, 2013).

Organization of the education process for seniors in the classroom system

The foundation of effective education of older people is a broad knowledge of the developmental norms of this stage of adulthood, which will allow for accurate identification of their real opportunities and needs, also in the field of education. It should be remembered that the elderly population forms the most internally diverse age category. Over time, individual differences resulting from a long and unique physical and psychological life history in a unique socio-cultural context are reinforced. Older people also become increasingly unique in the area of learning, their own skills, abilities, needs, accumulated knowledge, and experience. Recognizing, understanding, and adapting learning to the individual differences that occur among older adults provides the basis for its effectiveness (Jarvis, Walker, 1997). “Generalizations, on which the methodology is largely based, in this population require careful application” - emphasizes Marlena Kilian (2015, p. 174).

Among the many ideas for organizing the process of education of the elderly, the so-called collective teaching in the class-room system deserves attention (Szybiak, 1991). Its essence consists, among other things, in the fact that the subjects of education (interchangeably “participants”, “listeners”, “students”) are divided into groups (interchangeably “classes”), according to similar levels of experience and mental development and age of life. In this way, teaching classes can be conducted at “one level” with an “almost equal” benefit for all participants in the learning process (Janczyk, 2011).

The strategy has a kind of framework that helps the teacher and students to orient themselves in the different, interrelated parts of the content delivery (Frąckowiak, 2014). In addition, the characteristic of the teaching in the classroom system is a strictly defined plan of action containing clearly established moments (interchangeably "links"), the order of which should not be changed. The content of teaching is conveyed in simple, understandable language, without unnecessary terminology, comments, and digressions. Instruction is given in the form of short and simple messages, and all examples are formulated in a way that does not touch on irrelevant matters, close to the participants' experience.

The most important moments (interchangeably "stages", "links") of traditional didactic classes are listed by Heliodor Muszyński, whose concept has not lost its pedagogical validity. The author mentions: introduction and definition of the cognitive task, which consists in making the student aware of his/her own ignorance or lack of skills, and in determining what result of his/her own activity is desirable in this respect; preparation for the task, which includes those actions of the student that come down to preparing him/her fully for the cognitive activity determined by the task. Here we mean everything that is connected with the knowledge of sources of information, which the student will use and with the knowledge and mastery of techniques of using them. A student who knows, understands, and accepts the cognitive task should simply know how to get down to its implementation and be able to do it; Collecting information and experiences set by the task - this stage is the actual realization of the task, which in fact comes down to the fact that the student has acquired specific information, assimilated it, and mastered the ability to creatively process it; developing and processing information and experiences by subjecting them to appropriate operations of systematization and processing. The student must record the received information in an orderly way, illustrate, analyze, compare with each other, find connections between them, generalize, draw conclusions, apply, and finally come to a certain synthesis; practical use and application of formations and experiences gained in the implementation of one cognitive task to the implementation of another task. The emerged structure of the educational process refers not to individual lessons, but to the whole sequence of them. Such a sequence, assigned to one common cognitive task, constitutes a separate methodical unit, which is subject to overall planning. Individual methodical units can be implemented in the order of succession, and they can also partially overlap (Muszyński, 1974).

Planning to work with seniors in the classroom system, it is worth applying several principles that increase the effectiveness of educational work with

seniors. They constitute, as Marlena Kilian (2015) writes, the basis of their teaching methodology and ensure the better realization of educational goals. They allow conducting structured and planned activities that support mental activity natural for each age. Ewa Skibińska (2008, p. 76), first mentions the principle of observing high-quality education, which, according to the author,

> results from the serious treatment of seniors in the roles of students, as well as from their short time perspective of the future (compared to the already lived years of life) and the lack of time to correct errors in education (older people cannot afford to waste time). The awareness of participation in the highest quality education makes the participants special, somehow "chosen" from among many similar people (of the same age). It allows them to build a positive image of themselves in relation to their age category.

This is very important because seniors usually start learning activities with a lot of uncertainty about their own skills and the wisdom of the decision to undertake training, full of fears as to whether they will manage, often under the weight of the critical observation of relatives and their interest in their learning progress. In the process of learning, they need to be valued and to have more confidence in their own abilities, as well as to derive pleasure and satisfaction from learning. The principle of positive satisfaction emphasizes the importance of small successes in the education of older people. The realistic setting of main and specific goals increases the chances of educational success and fulfills personal needs. The greater the belief in the possibility of mastering the material, the greater the success. The fulfillment of the set small goals should give a sense of success strengthening the motivation for further learning (the so-called small achievement method) (Kilian, 2015). Due to the increasing phenomenon of ageism, which consists of negative stereotypical beliefs and attitudes that discriminate against seniors due to their advanced age, it is important to apply the principle of respect for each other in the education of older people. A sign of respect during educational activities will be the patience shown to seniors who have a predilection for repeating the same stories. The unbiased instructor will look for deeper meanings and opportunities to get to know the person who keeps referring to the same experiences. Out of respect for seniors, the instructor will use unforced politeness and, when mistakes are made, will gently suggest better solutions without judging or pressuring. When dealing with people with disabilities, the educator will address them directly and not through a third party or ask for their permission to make tactile contact, *e.g.*, offering a guide to a blind person, and will fully accept the specific functioning of seniors and adapt the learning process and their own behavior to it (Kilian, 2015).

Another important principle in working with older people in the classroom system is the principle of the usefulness of acquired knowledge and skills. It reminds us that the learning effectiveness of adults and older people is higher when declarative knowledge (what is it like?) is combined with procedural knowledge (what should be done?) and explanatory knowledge (why?). Seniors are extremely pragmatic about learning. They like to understand the usefulness of the material they are learning, to know why and how to use new information, to know the connection between new knowledge and what they already know. They want to translate knowledge into practice, so they are much more eager to learn what they consider relevant and necessary in their lives, to solve problems, and to use the acquired knowledge immediately. They do not want to learn something that is completely new to them and unnecessary in practice (even if only from their point of view). In advanced age, people like to understand what they learn, to relate new information to the practice of everyday life. The strength and emotional attachment to the theoretical and practical knowledge formed over many years, their own beliefs and values, is so great that confronting irrefutable information that contradicts their long-held views may cause them to reject the information or lead them to seek alternative explanations.

Ronald Sherron and Barry Lumsten believe that the focus in teaching older adults should not be so much on imparting information as on gaining new understanding for the knowledge learners already possess. There are no right or wrong answers - there is a life experience that provides a starting point for further learning. For learning to become an integrated part of memory, new information must be linked to the learner's goals, experience, prior knowledge, values, or beliefs. Information that is simply memorized and unrelated to the learner's world view will quickly be forgotten. Knowledge cannot be transmitted from instructor to learner, passively waiting for knowledge to flow. Learning will be effective when learners recognize the subject matter as important in their lives (Kilian, 2015). The reference point here can be the previous life experiences of seniors. Ewa Skibińska (2008) strongly emphasizes the importance of the principle of frequent reference to the life experiences of seniors, which allows to use the experience as an important source of knowledge and to make learners aware of its value. Older people do not always appreciate the importance and significance of their life experiences, associating the acquisition of knowledge exclusively with the process of teaching and transferring knowledge by competent people and studying scientific studies. Meanwhile, without the accumulation of experience, it would not be possible to infer the wisdom of the older generation.

The involvement of seniors in the educational process greatly depends on their psychophysical condition. Therefore, when planning the didactic pro-

cess in the classroom system, it is worth considering the principle of taking into account the physical condition and health of seniors, which emphasizes particular care about the learning conditions (safety during classes) and not undertaking activities that are contrary to the principles of mental hygiene (not overloading the body). Therefore, it would be important to organize short teaching units, separated by breaks allowing to change the position of the body and, for example, to walk (stimulation of movement) (Skibińska, 2008). It is referred to as the principle of compensation, which postulates the need to equalize the educational opportunities of seniors by overcoming the limitations of physical, mental, and intellectual performance resulting from the disability experienced at an older age. Marian Olejnik (2000, pp. 252-258), states that "with age, adults decrease the speed of information processing, reaction time, and other cognitive functions (...), however, these deficits are of secondary importance and can be compensated in various ways". Therefore, it is worth taking care to adapt the environment, means, and didactic aids to the psychophysical capabilities of participants, *e.g*., by using materials with enlarged fonts due to poor vision, arranging seats in a circle to optimize conditions for the ability to see and hear, reinforcing non-verbal communication when interacting with people with dementia. Effective compensation will be fostered by the assumptions of the principle of temporality, which stems from the fact that the reaction time of older people increases with age (slower performance of intellectual tasks - assimilation, processing, and recall of knowledge). This principle emphasizes the need to allocate more time for all activities of seniors and to reduce the pace of the teacher's work, adapting it to the learners' abilities (the older the learners, the more time they need) (Skibińska, 2008). A fast work pace works to the disadvantage of seniors. Therefore, time pressures should not be exerted, but rather, learning at one's own pace should be promoted. The pace of work should be appropriate for the free and effective acquisition of knowledge and skills. Sufficient time should be allowed for all important stages of learning, including discussion and questioning, as well as time for breaks and rests. Frequent breaks serve, among other things, to relieve tension associated with learning, to relax, and, importantly, to generate spaces for social interaction (Kilian, 2015).

Certainly, the effectiveness of the education of seniors attending classes in the classroom system will be enhanced by the application of the principle of positive assessment of learning outcomes, which is tantamount to caring for the level of the motivation to learn of seniors and striving to build a positive self-image (strengthening self-esteem). However, it is necessary to observe the need for reliable assessment and refrain from excessive rewards (not too often, and not for every small achievement) in order not to create the impres-

sion that it is not important what a senior learner achieves, because it will be positively evaluated anyway (Skibińska, 2008). The proposed list of principles conducive to the effectiveness of the education of seniors in the classroom system is not closed, of course. It is only a starting point for thinking about optimizing the education of seniors within the framework of the traditional concept of conducting educational classes (interchangeably "lessons").

Conclusion

Late adulthood (also often called old age) brings many new and challenging life roles, *e.g*., retiree, grandparent, grandmother, sick person, widower, etc., in exchange for others previously held. It is also during this time, after retirement, that seniors often look for a replacement activity for themselves. It can be, for example, the continuation of a professional role through partial employment in the current position or in another workplace, by performing casual, commissioned, seasonal work, *etc*., to some extent compensating for the loss of full-time employment. In this period of life, a person is looking for such areas and forms of activity which would allow him/her as a pensioner to find himself/herself in the new conditions of his/her life, *i.e*., in the situation of excess of time available after giving up working (Dubas, 2008).

The missing permanent points of reference make life barren, devoid of deeper justification, going on in an unknown direction and purpose. Education creates a convenient space to fill the perceived "void". Polish seniors can take advantage of numerous educational offers. Return to activity related to education allows the elderly, accustomed to a certain rhythm of life (previously strictly connected with work), to give again a meaningful structure to all the activities undertaken daily. It makes their life orderly - its course is determined by duties and educational tasks, the fulfillment of which becomes a source of satisfaction for the senior. In addition,

> knowledge resulting from education helps to dispel myths and dispel fears, allows to discover the truth, and improves the ability to manage oneself and one's own life, organize leisure time, but also gives it value. Knowledge of the processes and mechanisms of aging promotes better adaptation to changes, preparation for them, promotes the maintenance of satisfactory health, and thus improves adaptation to old age (Majewska-Kafarnowska, 2009, pp. 221-222).

With a commitment to education, every senior sets some expectations. He or she hopes to be up to the challenge. It is all too common that he or she is

set on the idea that the process of his or her education will proceed in the manner with which he or she participated for many years of schooling (Frąckowiak, 2014). Sitting down again after a long break in the school bench, he will be inclined to reproduce typical student ways of behavior, perfectly familiar from the old years, often revisiting his "student" experiences. Also, part of these behaviors will be a dependence on the teacher The traditional way of organizing education, which Anna Frąckowiak (2014, p. 41) aptly calls "a world of structures and straight lines", will certainly embolden seniors. After reaching a certain level of knowledge and motivation, as well as responsibility for their own learning and skills in this area, they will probably be more willing to choose an already less structured approach to learning, eager to appreciate other than traditional methods of teaching, while the teacher will be perceived, no longer as an emitter of knowledge, but rather as an organizer of conditions conducive to independent knowledge acquisition, a person who sets before learners tasks to be performed, problems to be solved (Delahaye, Smith, 1998).

Despite the criticism, the classroom system has stood the test of time for many centuries and, while still holding strong around the world, works well for teaching, including with seniors. Seniors enjoy listening to the teacher in class, and want to continue learning and preparing for class by reading books and study materials (Simson, Thompson, Wilson, 2001). The partially formalized nature of the classroom system often facilitates the acquisition of knowledge and skills by the elderly. It ritualizes the process of education for seniors. It is based on long-standing habits and "school" habits. Being predictable, it guarantees seniors a sense of finding themselves in an educational situation, and thus security. As research shows, the use of the "traditional" methodology in educational work with older people allows to eliminate the feeling of danger and frustration in the learning process (Frąckowiak, 2014). In the optimized didactic conditions, seniors are able to achieve the same results as younger people. The need to learn is not affected by aging (Tomporowski, 2003).

Chapter II

EACH OF US HAS ANCESTORS. HOWEVER, NOT EVERYONE KNOWS ABOUT THEM...[3]. GENEALOGY IN THE LIVES OF SENIORS

Introduction

Knowledge of the history of one's ancestors and cherishing the memory of them has accompanied man for centuries and, like caring for the burial of loved ones, distinguished him from the animal world. The authors of the oldest texts of the Bible, listing the generations of Adam's descendants or creating lists of Israelite kings, showed the importance of genealogy in Jewish culture, which culminates in the Gospel accounts of Jesus' ancestors. On the other side of the globe, we can also recall the well-known case of Polynesian genealogies, or oral family histories going back even more than 100 generations.

Genealogy is not only a cultural creation caused by the eternal need of mankind. It has also been incorporated into the framework of the academic world, which has given it appropriate terminology, systematics, and methodology as an ancillary science to history. In this way, it has been used for years to study the past of powerful families, rulers, or significant people. It was not without reason that it was associated with determining the rights to inherit property or privileges in a given family. Using statistical methods, the heritage of entire social groups, knights, nobility, bourgeoisie, and less often, peasants, were known to a greater number of sources (Szymański, 2001). Still, however, apart from the scientific and academic dimension of genealogy, its uniqueness is its universality, simplicity, and applicability by everyone, regardless of origin, place of residence, or age of the researcher.

[3] Motto adopted by Liliana Molenda in her genealogy of the Molenda family of Wielkopolska and Kujawy, *source*: https://www.mrog.org/1174/motto-genealogii-rodzinnej.

Starting from the 19th century, the documentation produced by various institutions, churches, state administration, and the basic social unit, *i.e*., the family, was mass-produced. All metric books, censuses, civil status records, memorabilia, and family photos are good sources to creating a family tree. In this way, not only the descendants of the nobility and aristocracy, but also simple farmers, workers, villagers, and townspeople can study their origins. In an era of social exclusion and alienation of an individual, it helps to know one's own identity and to answer basic existential questions. It is also an expression of preserving the memory of our ancestors and ourselves. Nowadays, through the progressing digitalization and the IT revolution, genealogical research has gained an unprecedented momentum, gaining a wide range of popularity among both young and old, while for a group of seniors it is an excellent tool for finding themselves in the computer reality. In the following section, the main directions of changes that have taken place in recent years will be presented.

Genealogy in Poland

The beginnings of Polish genealogy can be connected with the herbalists of the nobility, in which, however, the facts were mixed with legendary stories. In the seventeenth and eighteenth centuries, the arguments of major families reaching back to ancient Roman, Trojan, or even Alexander Macedonian heroes were fashionable. In the then noble Poland, only a few percent of the population held the power and importance of the nation. Therefore, genealogy in its first phase concerned only the nobility, the results of which we can, unfortunately, see to this day. These times are elusive for the majority of Poles in their search for them, due to the negligible importance of the lower social strata (which constituted the majority of the population) and their absence from historical sources. Only the systematic introduction of parish registers at the end of the seventeenth century, and especially in the eighteenth century, allowed today's researchers to discover family secrets.

The partitions of Poland in the years 1772-1795, and the final erasure of the country from the map of Europe for 123 years, left a huge mark on family history. Since then, the Polish lands have been part of three powers: Austria, Prussia, and Russia. Languages, dominant religions, administration, and documents produced by the administrations were different. It is not uncommon for a Polish genealogist to have to learn the specifics of all three apparatuses of the partitioning states in order to find the information sought after about his ancestors.

The turbulent 20th century in the history of Poland was not an easier period, which had an impact on the condition of many families. Two World Wars, the Second Republic of Poland, and the time of the People's Republic of Poland, are chapters that many find painful and tragic when some heroically fought for independence, and others simply tried to survive and save their loved ones. In the post-war period, when Moscow's communists were in power, the interest in genealogy grew, but it still concerned families of noble, or intellectual, origin. People who had lost much of their lives to the turbulence of history had to continue to hide their family trees in the privacy of their homes.

It was not until Poland underwent a systemic transformation in the late 1980s and early 1990s that the first social organizations of a genealogical character were established. In 1987 Rafał Prinke founded the Genealogical and Heraldic Society in Poznań, giving rise to such associations. In 1992, as the second one, the Silesian Genealogical Society ŚTG was founded, but it was the first one in Poland whose members deal with the genealogy of bourgeois, peasant, and working families; which does not mean that they do not have among their ancestors', representatives of former higher classes. Currently, there are 22 genealogical societies throughout the regions of Poland, including the Polish Genealogical Society (PTG), which is active nationwide. Each of the societies functions independently of each other, without hierarchical connections, but with appropriate cooperation.

An important milestone for contacts between interested parties was the development of computer technology and the Internet. The first discussion groups, family pages, and genealogical forums were established. Today, the most important one is www.genealodzy.pl . This PTG service brings together a forum, databases in projects carried out, and it is also a rich bulletin board about organized thematic events throughout the country. It is worth mentioning here at least some examples of bookmarks of the mentioned website. The catalog of links to websites, developed and updated by Maria J. Niebrzegowska from Zielona Góra, has a clear layout and division into categories of links. Currently (2019/07/26) it contains 2170 links in 117 categories. It contains information on Polish and foreign archives, military affairs of the partitioning countries, cemeteries, emigration, all church matters, genealogy useful dictionaries, computer programs, and pages devoted to the First and Second World Wars. The scope of the content is so wide that it even reaches to treaty documents concluded between the Republic of Poland and the Ottoman Empire in the fifteenth and seventeenth centuries, stored today in the Central Archives of Historical Records in Warsaw. Among other interesting bookmarks, apart from the most important one - Geneteka - it is worth mentioning Digital Libraries or the Catalogue of Metric Resources developed

many years ago by Stanisław L. Pieniążek from Gdynia. This is a catalog of the metric resources of Polish Roman Catholic parishes and contact information for about 10500 parishes.

Another interesting project is the indexing of the Polish Declaration of Admiration and Friendship for the United States of 1926. It is a collection of signatures in 111 volumes of the most important representatives of the authorities of the time, the clergy, the worlds of culture and science, and above all, about 5.5 million schoolchildren of all levels. In 2017, the work was digitized and made available on the Library of Congress of America's website (https://www.loc.gov/collections/polish-declarations/). Polish genealogists, meanwhile, are meticulously indexing the contents under the direction of Wiktor Tyburski for the easier searching of this treasury.

Over the last few years, thanks to the cooperation of genealogists with state and church archives, there has been a widespread digitalisation of sources for family research. This facilitated and popularised research which, due to the complex past of the country mentioned above, would involve numerous trips. A nationwide archival portal https://www.szukajwarchiwach.gov.pl/ was created and is still developing, which gathers scans of sources from the network of state archives. Such a portal responds to the needs of an ever-growing number of genealogists, allowing increasingly wider access to registers, or civil status documents, in the first place.

Additionally, there are a number of smaller projects on the web with the cooperation of genealogical societies and specific institutions that preserve historical materials. We can mention such as:

- http://poznan-project.psnc.pl/ - a project to index marriages from Wielkopolska in the 19th century, coordinated by Łukasz Bielecki, with the cooperation of the Wielkopolska Genealogical Society "Gniazdo",
- https://www.genealogiawarchiwach.pl/ - a project of the State Archives in Toruń and Bydgoszcz providing access to the records from their resources,
- http://www.ptg.gda.pl/ - PomGenBaza - an indexation project run in Gdansk Pomerania by the local society,
- https://regestry.lubgens.eu/news.php - a project to index the parishes of the Lublin region carried out by the Lublin Genealogical Society,
- https://indeksy.projektpodlasie.pl/ - a project of indexation of genealogical sources of Podlasie and Mazovia, recently very active,
- http://stg-wroclaw.pl/wyszukiwarka-pur - a search engine for records contained in the books of branches of the State Repatriation Office operating after World War II in Lower Silesia, developed by the Silesian Genealogical Society in cooperation with the State Archives in Wroclaw.

Besides the above-mentioned leading projects, each association develops its own smaller, but equally important, projects, and databases, often reaching into unknown materials. This way, the heritage of the regions in which they operate is disseminated. An example of this is the photographing of forgotten parish cemeteries in Wrocław and its surroundings by members of the Silesian Genealogical Society as part of the HIENA project (Historical Indexation of Tombstone Elements with a Camera – in Polish: Historyczna Indeksacja Elementów Nagrobnych Aparatem). In our opinion, the cooperation of the Society with research centers of the University of Wrocław, which took place in 2009, is also worth mentioning, as it resulted in numerous joint activities and publications. A particular novelty is the scientific investigation of the phenomenon of passionate amateur genealogy in Poland, and recently also in other European countries.Among the activities of associations is the publication of periodicals, usually irregular, or annual, in nature. They are usually structured as scholarly journals, which can be seen from the composition of their authors, who include not only members of the organization, but also archive workers, scientists, and academics. We can mention here such titles as: „Parantele. Rocznik Śląskiego Towarzystwa Genealogicznego we Wrocławiu [Parantele. Yearbook of the Silesian Genealogical Society in Wroclaw]", modeled on the earlier „Zeszyty Śląskiego Towarzystwa Genealogicznego [Journals of the Silesian Genealogical Society]", or „Rocznik Lubelskiego Towarzystwa Genealogicznego [Yearbook of the Lublin Genealogical Society]". In February 2013, a new title appeared: „More Maiorum. Pierwszy Polski Periodyk Genealogiczny Online [More Maiorum. The First Polish Genealogical Periodical Online]". This monthly magazine filled a gap in the environment of genealogy enthusiasts and met with wide interest from the beginning. Importantly, it was created on the initiative of Alan Jakman, a high school student from Bielsko-Biala, and to this day can boast 77 issues, appearing regularly. The most important sections of the magazine include interviews with well-known genealogists, interviews with personalities of politics, culture, and science, descriptions of achievements, legal advice, and announcements.

An important niche in the popularization of one's own achievements are genealogical blogs, often kept very professionally and with journalistic fervor, revealing many secrets of ancestors. Among the initiatives, we can also see the organization of conferences where amateurs can meet well-known professionals and academics. Usually, such events take place on the occasion of subsequent anniversaries of the activity of a given society. However, from 2013 onwards. Opole Genealogists created annual meetings under the name of the National Genealogical Conference in Brzeg, which enjoy a hot response from the community. All this gives a picture of the wide activity of individual Polish genealogists and many regional associations.

Genealogy in Turkey

People with Turkish roots now live not only in Turkey but also in the post-Soviet republics of Central Asia: Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, Tajikistan, the western provinces of China, and the Caucasus. The scientific development of genetics since the 1950s has allowed it to use its methods to reconstruct genetic-genealogical links between communities inhabiting a significant part of Asia and to show migration routes of particular peoples. For this purpose, the relationships between the male Y chromosome, which is invariably inherited from the father by the son, and the mitochondrial DNA, inherited from the mother by the daughters, are studied. Over the generations, they have been subject to minor mutations, making it possible to identify relationships dating back many tens of thousands of years (Sykes, 2002, 2008). This seems to be very helpful in the study of people with Turkish roots.

In Turkey, genealogy is still not as widespread and professional as in Western European countries. Few historians offer assistance in conducting searches on the history of families. The genealogical activity on the Turkish Internet is equally insignificant.

The hope for genealogical adepts is that the government will make it easier for them to access state population registers. To this end, a portal https://www.turkiye.gov.tr/ was set up, where, as the authorities themselves assure, every citizen can obtain information about their ancestors up to the 19th century after logging in (BlogArti, 2018). This can especially help people of Turkish origin, who have been going to Germany in large numbers since the middle of the 20th century, to learn about their roots and to find distant relatives in their home country.

Genealogy in Italy

The Apennine Peninsula, being, next to Greece, the cradle of European civilization, seems to be directly predestined to create ancestral roots reaching deep into the past. Probably many aristocratic families that have preserved their estates and titles to this day would like to see their ancestors in the times of the ancient power of the Roman Empire. Of course, this is a practically impossible task, since the history of the wealthiest is lost in the darkness of the medieval city-states of the “Italian shoe”.

The danger of pathological ambitions to prove noble ties, as the Italians themselves point out, are unreliable heraldic-genealogical companies, which

prepare documents that supposedly prove their origin from higher social spheres. Thus, they feed on human ignorance and naivety, like antiquarians specializing in the sale of fake antiques. It is attractive for people with names converging with the largest families, such as Medici, Este, or Visconti, to show such ancestors. However, apart from the fantasy tree, there is no connection to the truth.

Remembering that for several centuries, until the second half of the nineteenth century, the territory of Italy was divided into many states, urban republics, grandiose principalities, ecclesiastical authorities, some cooperating with each other, others fighting each other for years. An important role was therefore played by the family ties of the richest nobility, the town patricians. During the Renaissance, the power of ancient knowledge was rediscovered, old sources were used, stored in vast archives, and since the 16th century we can speak of a wide development of genealogical research in the centers of northern Italy: in Bologna, Florence, Milan, and Venice. It was then that the first "modern" rules of notation and research methods were created. Unfortunately, this was also the time of falsifying documents, which in limited cases continues to this day.

As in other European countries, the key development of the science we are interested in took place in the 19th century. Sources were subjected to critical methods to detect false records. Still, however, genealogy was more concerned with the ancestors of the mighty, publishing heraldic publications and omitting topics related to the lower strata of society. It was only in the 20th century, when the Italian Republic abolished the privileges of the nobility and aristocracy, that the wider circle of Apennine Peninsula residents became interested.

Researchers indicate that southern regions have been keeping censuses of residents since the beginning of this century, similarly few northern localities, and some, such as the Kingdom of Sardinia or the Grand Duchy of Tuscany, did not introduce civil registers until the second half of the 19th century. Questions about the period before 1800 should be answered in parish books if any. Unfortunately, as a result of wars, fires, and other tragic events, the books were often destroyed or plundered. And even if the survivors are still kept in parish archives, it is usually difficult to get permission to inspect them.

Italian sources for genealogical research may vary considerably from region to region of origin. It is obvious that they are written in Latin and later in Italian, but there are passages in local dialects or, at the southern ends, in Greek or Sicilian (Jurczyk-Romanowska, Tufekčić, 2019).

A very good example of the activity of Italian archives in the area of popularization and making rich collections available for genealogical research is

the Antenati portal, *i.e.,* ancestors (http://www.antenati.san.beniculturali.it/). This website, run by the General Directorate of Archives, is a treasury of scans of sources found in 51 archives. Importantly, the number of documents is constantly increasing, and the portal itself is updated and modernized from time to time to make it even more user-friendly.

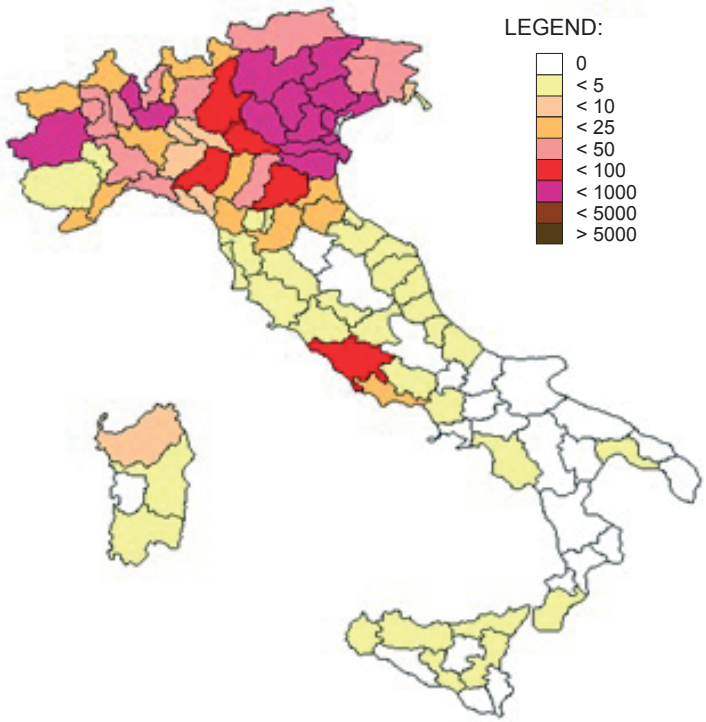


Figure 1. A map of the occurrence of the surname Zanella in Italy. Source: http://www.labo.net/.

For example, we have analyzed Italian genealogical sources to find ancestors of the popular Zanella name:

1. https://www.familysearch.org gives a result of 6,127 records for this name in Italy.
2. *e.g.*, item from 1534: Pietro Zanella, married in 1534 in Parma. Generated in 2011, a map of the distribution of this surname shows a very high density in northern Italy.
3. the searched state sources, mentioned by the Italian partners of our project, make available quite small quantities of metrics from the areas of northern Italy of interest to us, such as the State Archive in Como, which offers only residual registers of deaths.

This is probably due to the smaller development of the amateur genealogical movement in Italy than in Poland, or at least its popularity on the Internet. One may get the impression that only state institutions are engaged in providing access to, and building, source databases.

Seniors and genealogy

Małgorzata Nowaczyk, a Polish woman living in Canada, published her book *Poszukiwanie przodków* [*Search for ancestors*] in 2005. Genealogy for everyone, which has become a recipe for genealogy and a driving force for many adepts of this art. In one of her initial steps, she indicated that a beginner researcher should go for a conversation with the oldest members of the family, grandparents, and their siblings (Nowaczyk, 2015). Thus, she points to seniors as predestined persons to have the richest knowledge about the history of the family. After all, they knew their parents, grandparents, but also witnessed the adolescence of their children and grandchildren, so the spectrum of their consciousness is the widest. What is also important, the oldest ones most often have the most extensive contacts with further relatives, perhaps already neglected for years, but how much easier it is for them to renew their correspondence than to establish a new one for younger ones.

Thanks to genealogy, seniors can simply feel needed, as Ewa Jurczyk-Romanowska emphasized in her research, not only in the case of their own research and discover the secrets of the past, but also when someone from the younger generation undertakes the effort of "drawing" a family tree. This is related to the progressive exclusion of older people from family life and society, through a misunderstanding of their needs and a lack of time for them. Therefore, one of the tools to counteract alienation may be the interest in their genealogy. Permission to return mentally to the years of childhood, only familiar areas in oneself, to discover them, but also to pass on the knowledge about them to their descendants so that the memory continues and unites the family. Regional associations are working in this direction, offering numerous trainings for seniors on the basics of genealogy, showing the possibilities that lie dormant in old documents or photographs, their subsequent processing, and proposals for publication in the form of trees, tables, or family albums. At such meetings, participants learn how to use computers and simple graphic programs to create their own ancestors' arguments, as well as the possibilities of the Internet for genealogy (Jurczyk-Romanowska, 2018).

From the current *Learning Tree* project, which has resulted in this publication, we can deduce some interesting conclusions. During the last "work-

ing" classes in the Polish group, seniors spoke about their genealogical origins, the needs of their leaders, and the creation of the family tree itself. Some said that the desire to undertake research had appeared many years earlier, as a result of the loss of loved ones, when they helped to clean up the legacy of the deceased, but the lack of free time then, and perhaps insufficient knowledge about methods, resulted in not taking the initiative. Others mentioned grandchildren who created simple trees for school and listened to family stories with interest. Often the activities of the project participants ended with collecting souvenirs, documents, photos, and only during the classes could they see what to do with their materials. Many of the first ancestors' arguments, often very rich and numerous, were made during the project.

The Italian participants of the project rightly stressed that genealogy helps to get to know the history of the family, its connections and relationships, and through participation in classes, they could start talking about their ancestors and keeping them in memory. And the Ahnenblatt trees contributed well to sharing interests with younger family members in particular (FT, 67, IT)[4]. Especially touching moments were instigated by old photographs, which allowed us to think back to the past moments or see people who died years ago (GB, 60, IT; AS, 55, IT). There were also people who, for example, expected something more from the possibility of the presented computer program than just the presentation of several generations. They hoped that it would help them more in searching for further generations of ancestors (DP, 57, IT).

Similar issues were raised by Turkish seniors. Also, for them, the interest in the past of the family was important, even against the background of the general history, as one of the respondents emphasized, they could envision what events were witnessed by specific ancestors (NA, 58, TR). The skills acquired during the course brought satisfaction and ordinary joy not only to the participants but also to their families when they shared their family trees (SG, 57, TR).

The above examples show how universal genealogy is. Despite cultural, religious, and historical differences, the knowledge of one's loved ones and the preservation of their memory is an important element, especially in the consciousness of seniors, the custodians of the family past. It is also pleasing that modern digital possibilities offer new possibilities in this field and

[4] The statements of the participants were coded in the following way: XX, 00, and YY, where XX indicates the initials of the first name, 00 - the age of the respondent at the time of the interview, and YY - indicates the country of origin, i.e. IT - Italy, PL - Poland, TR – Turkey.

make it possible to reduce the distance between the oldest and the youngest generations.

Genealogical Competency

In the quantitative research conducted during the project, three groups of competencies emerged prominently, analogous to the three thematic modules identified in the scenarios, which we have provisionally named: (1) computer competence, (2) Internet competence, and (3) genealogical competence. At this point, it is appropriate to take a more detailed view of the genealogical competencies needed to conduct independent research. These skills can be divided into two groups: (1) analogical and (2) digital.

Analyzing the activities and interviews of participants already at the recruitment stage, we noticed that their motivations often strongly depended on the level of genealogical competence. People, so-called "old-timers", but also younger ones, who had no knowledge and experience about genealogy so far, showed an analogical approach to the topic, often using stereotypes or opinions of others. They expected tedious trips to parishes, necessary correspondence by mail, and/or conversations with the oldest members of the family, followed by the cataloging of this knowledge, often noted by hand, in binders, folders, and suitcases.

What was to be used in the laborious drawing of a family tree, pasting photos into family chronicles, or typing studies, to later make copies of them available to relatives.

It cannot be argued that the above skills are useless today. Despite the often-heard stereotype that everything will be available on the Internet, there are archival materials that will be available only in "analog" form for many years to come, *i.e.*, on the spot in the archives. Similarly, no video conference can replace a face-to-face conversation with the oldest members of the family. It is also often necessary to have deep historical, regional, or borderline knowledge of law and administration in order to solve the complex puzzles of the family past. However, we rightly noticed that the genealogy from the initial image of the participants ended with the dissemination of computers and the Internet.

From the beginning, computerization interested genealogist-amateurs in terms of facilitating their research, collecting data, making search results public, and exchanging ideas. Noteworthy among this group were also seniors who expanded their computer and Internet competencies, seeing incredible opportunities for their passion. Such seniors, with more or less developed digital competencies, even beginning, often accidentally, their first adventure in genealogy, have decidedly different, broader motivations.

He or she finds it easier to search for information with which to create family databases. He or she can use a variety of tools to generate family trees, often embellished with unique photographs. And the most persistent create family chronicles in book form.

New technologies in genealogy

As recently as a decade or so ago, an in-depth genealogical search would not have been complete without trips to often distant state and church archives, parish offices, or civil registry offices, where the good family researcher was at the mercy of officials or an untrustworthy priest. And if there was not enough time or resources for direct travel, many issues would be stuck waiting for the correspondence responses of the above-mentioned decision-makers. Of course, even when the "petitioner" had the honor of seeing the documents or books he wanted, he could only count on his own written notes.

Fortunately for many who have their roots in distant places, the progress of information technologies, especially the development of the Internet, made it easier to research. Everything to the extent that when the interested party is lucky enough to come from a less mobile family and the books from its village are digitalized, it can easily create an ancestor's story without moving from the computer screen.

This is made possible by a certain "revolution" that has taken place in the archival networks of many countries. Genealogical associations played an important role in this process by negotiating and co-creating new procedures for making archival materials available. Archives have provided funds for mass digitization of historical sources and their subsequent being made available on specially created portals. The first step is to select the most frequently used or valuable files. Among them, the main components are the materials used by genealogists: civil status books, metric books, population censuses. This is aimed not only at making the originals more widely available, but also at securing the originals, which no longer need to be issued directly to the researcher.

It should not be forgotten that the beginning of the great digitalization wave was marked by the work of genealogical volunteers, who, through various projects and their own financial means, had done it earlier on a smaller scale. They went not only to large archives but also to small parishes, with treasures that were inaccessible to many. Also, the aim was not to photograph subsequent pages in themselves, but to process them later in the form of searchable personal indexes, so the work was much more arduous and time-con-

suming at the same time. Imagine how good it is to sit down and look at the scans of the metric book, but isn't it better and faster to enter your name and find all the records from the book?

The above-mentioned possibilities can be seen on the websites of Polish, Italian, and other European countries. A less advanced situation occurs, among others, in Turkey, due to an earlier lesser interest and a later start. However, here, too, we can see the steps taken by the administration to make it easier for people to access the information needed to create family trees. Communication is facilitated by various social media platforms, discussion groups, or public forums. A place where beginners can get guidance and help from more experienced and knowledgeable people.

Chapter III

A PICTURE IS WORTH MORE THAN A THOUSAND WORDS[5]. FAMILY PHOTOGRAPHY AND ITS IMPORTANCE IN THE LIFE OF A SENIOR

Introduction

This is how Małgorzata Nowaczyk (2015) begins the story of her adventure with genealogy. It all started with photographs...

> I remember exactly what prompted me to begin my genealogical search. The reason was trivial, stemming from my innate pedantry. In December 2001 (...) I decided to complete my family photo albums. Whole piles of contemporary photos and plates were lying around in closets (...). When I finished arranging the photos of my children and travels in the albums, when I described all the binders with film, I was left with a box of old family photos. I collected them as a child (...) I really liked the old sepia-colored figures standing stiffly in front of the lens in old-fashioned clothes. And suddenly it turned out that I had problems with captioning those carefully preserved and emigrated pictures - I did not know who was in them or where they were taken. And my albums were to be described in detail in beautiful italics, they were to contain precise dates, maiden and family names... I felt like my ancestors were looking at me reproachfully from those pictures, that I didn't remember them, that they didn't care about me. This is not true. After all, I had drawn the first family tree of my father's family back in Poland, when I was thirteen years old. I could not leave these people in non-existence (Nowaczyk, 2015, pp. 7-8).

[5] Chinese saying.

Amplification

One of the reasons we take photographs is the need to preserve what we are currently experiencing. Photography has been treated as a source of cognition of social reality since its inception in 1839 (Łaguna-Raszkiewicz, 2016). Thanks to its invention, new seeing, and understanding of the world were enriched, although at first it was used only by artists (Piejko, 2008). It is worth mentioning that the object of its recording was, first of all, man and his actions. In the beginning, photography competed with traditional portrait painting but due to its speed and lower cost, it became more and more popular. It was, and still is, used to record important family events (christenings, weddings, funerals) (Sztompka, 2005). Photography "has specific social meanings and was created to 'represent' reality in terms of recalling, proving reality, and creating a specific hyper-reality" (Jędrzejewska, 2008, p. 40).

Nowadays, photography accompanies man every day. It has become a carrier of memories. It is now enriched by multimedia electronic means such as computers, notebooks, i-pods, cell phones with built-in cameras and camcorders, multimedia projectors, Internet, as well as webcams (Piejko, 2008).

The photographization of social life is a dynamic process. Nowadays, most of society has an album with family photos at home or a folder with photos of their loved ones on the computer. Family albums are "a selected collection subjected to multiple treatments, which has a representative function. The collection and preservation of photographs is an extension of the past into the present, with the present considered the center of memory, as Maurice Halbwachs proposed" (Piejko, 2008, p. 8).

Family photography is all pictures that document family life, starting from vacation pictures, through family celebrations, portraits, to pictures taken without a special occasion. In addition, these are also photos taken by professionals - in a photographic studio or outdoors (Piejko, 2008).

The very concept of family photography points to a specific social group, thus distinguishing it from other types of photography. It is worth mentioning that photographs show people who live with each other every day, we should also not forget about people who have already left this world and thanks to photographs we can recall memories about them. We may risk a statement that photographs are a strap that binds generations together. Recreating family history "strengthens the group, binds it together, and defines its nature by showing its strengths and weaknesses" (Piejko, 2008, p. 14).

Above all, family photos have great sentimental value. Every time you look through the albums, you can get deep into the history of the family. What is more, the photographs also show the emotions that people during had when

the photos were taken, thanks to which it is possible to try to recreate situations and empathize with experiences of the photographed people. Family photography undoubtedly brings people together and strengthens their sense of identity and belonging to a group.

It should be remembered that photographs, such as private photographs, "always refer to a certain meta-dimension, that is, temporality. Photographs are an extension or 'prosthesis of memory'. They allow us to preserve a specific moment in time by preserving a specific situation. By photographing, we create a specific image in the present for the future out of what will soon be the past" (Konecki, 2005, p. 44).

"Philosophers, cultural theorists, and aestheticians used to ask what images are. But it is more fruitful for the historian, folklorist, and ethnographer to seek answers to the question of what images do" (Morgan, Promey, 2001, p. 17). In the context of the *Learning Tree* project as a whole, it can also be said with certainty that the researchers seeking answers to the questions of what photographs do and what meaning they have for seniors included the project developers. Individual family members form emotional connections with family, home photographs. Their basis is the concept of image as representation. Building relations with the figure represented by means of photography is one of the most mysterious and fascinating dimensions of images. Making the absent present, keeping the moment and the person in the frame, recalling and emanating presence - these are questions about the double, unclear nature of the image, but most of all these are elements of the common experience of images that speak of their power and activity (Niedźwiedź, 2015). According to Anna Niedźwiedź, images transport viewers to other times and spaces, making the absent present, enabling impossible encounters: with dead ancestors, with never met relatives, with one's own grandmother smiling from a photo where she was an infant (Niedźwiedź, 2015). In and through photographs, the deceased can come alive, the unrecognized become recognizable and seemingly closer. To this day, family photography has retained the power to make the absent present and to build and sustain relationships with them. This way of the functioning of photography refers not only to images of living relatives but also to images of relatives from the past. Photographs immortalizing ancestors not only recall specific individuals from "times past" but also create contemporary family identities. Family genealogies, strongly based on photographs, are not only references to the past, but above all concretizations of that past in the present and in the descendants living today.

Photographs that construct contemporary family identities are very often established not only through their visual aspect but also through their

stories. It should be noted, however, that photographs are not just so many silent illustrations of these stories, but rather they participate in the stories and take an active part in telling them. Sometimes photographs create and generate family stories, most often they co-create and complement orally transmitted family anecdotes, stories, memories, entering into a kind of dialogue with them. Looking through photographs together, family meetings over, and with, pictures of ancestors, searching for the meanings of pictures and deciphering them, familiarizing oneself with family photographs is a space for creating, discovering, and repeating small home stories and histories (Niedźwiedź, 2015).

Viewing photos together can also activate autobiographical narratives, which can be especially important for seniors in their relationship with their grandchildren. Janina Labocha states that

> narrative structures appearing in autobiographical statements reflect not only individual perceptions of events, but also the shared experience of generations. From the way these events are perceived, a certain history emerges, a certain vision of the world and of oneself in this world. This history should be understood not as someone's individual experience, but as a certain knowledge modeling the world, shared by a certain social group. Autobiography understood in this way can be a source of knowledge about society for sociologists and historians (Labocha, 2000, p. 91).

Photographs "have an interesting performative function - taking photographs allows you to establish and maintain interpersonal relationships (...), they allow you to show those around you who you are, sometimes also 'who you are with'. Photographs are more obvious and convey in an instant what can only be described in many words" (Filiciak *et al*., 2010, p. 40). Media and pictorial self-presentation is a social practice and a structural norm that belongs to the obligatory and coercive elements of interpersonal relations, especially among the young generation (Bogunia-Borowska, 2012).

Private photographs were usually viewed by a narrow circle of people. These were photographs taken to commemorate specific events, close relationships, successes, and turning points in life, both family and professional. We use the past tense "viewed" here because of the fact that photographs may play a different role for seniors than for their grandchildren. In the analog era, personal photography, which other researchers also refer to as a family, amateur, and private photography, was primarily a means of creating autobiographical memories. Photos very often ended up in a family album or a gift box. These were believed to be the surest aid to recollection and evaluation of past years, although, according to Norwegian researcher Cynthia M. Stuhlmiller,

verbal narratives of memories always contain elements of imagination and imagery, projection (van Dijck, 2012).

Photographs, with their accompanying notes, names, dates of weddings, births, and funerals, are passed down from generation to generation and are increasingly used to construct elaborate family genealogies and family trees.

The value of photography as a personal tool lay in its support of memory: after all, without photographs of ourselves, we would hardly know what we looked like years ago. Photos of family and friends are visible reminders of history, inviting us to reflect on "what-was" (Barthes, 1996). Thus, personal photographs determine our autobiographical memory. Memories are not only recalled but also produced from photographs and never remain the same, even if the photograph seems to present an unchanging image of the past. Meanwhile, we use images not to preserve memory, but to reassess our past by considering what was, what is, and what will be (van Dijck, 2012).

The social significance and cultural impact of personal, family photography have grown exponentially throughout the past century. The importance of photography as a tool for recording family life has been described by Susan Sontag, indicating that "through photographs, each family creates its own chronicle written in portraits - a portable set of pictures that attest to the lives they share" (Sontag, 2017, p. 176). Through taking photographs and collecting them, individuals express their bonds and initiations within clans and groups, giving weight to aging and growing up. Sontag noted that cameras matched family life. Photography not only reflected, but was part of, family life, shaping a sense of belonging in individuals. A significant number of sociological and anthropological studies have been devoted to analyzing the relationship between taking, organizing, and displaying photographs and the construction of families, heritage, and bonds (van Dijck, 2012).

The *Learning Tree* project involved senior citizens who prepared souvenirs for their grandchildren, or more generally for future generations. At this point, it is also worth pointing out the change in the meaning of photography that has taken place over the last two decades. It is clearly visible that photography was something different for grandparents and something different for their grandchildren. Barbara Harrison, in her anthropological research on the connection between personal photographs and memory and narration, noted that the dominant function of photography has become one of self-representation rather than family representation (Harrison, 2007). Harrison's field research indicates a significant shift away from personal photography as a tool associated with memory and recollection towards photography as a form of identity formation. Photography is used less and less to remember

family life and more and more to affirm individuality and one's own connections (Harrison, 2007).

Since the 1990s, cameras have increasingly served as tools for conveying everyday experiences as distinct from ritual and ceremony. This is due in part to market-driven technological evolution, but according to cultural scholars, its cultural significance should not be underestimated. Observing today's generation of photography users, researchers see a gap between adults and teenagers who grow up surrounded by new, multifunctional communication tools. The seniors invited to participate in the *Learning Tree* project are part of a group that generally views photography as a superior memory tool, particularly in the context of building family life. Meanwhile, younger generations, the grandchildren of these seniors, use cameras and related tools for conversational purposes and to build connections with peers (van Dijck, 2012).

While the grandparents' and parents' generation invested time and effort in building material photo collections with an eye to the future, young people are interested not so much in presenting photos as objects but in sharing them as experiences. The rapidly growing popularity of camera phones is fueling this new communicative use of photography. Photos sent out by young people using their phones are used to convey short messages or simply emotions. The social significance of this type of photography is not to record reality and preserve memories, but to create bonds and connect. Grandparents used to sit on couches with their children, going through albums. Meanwhile, modern teens consider photographs to be temporary records rather than everlasting mementos.

These intergenerational differences in the meanings attributed to photographs seem obvious and, in light of the increasing processes of digital mediatization, are expected to grow. The *Learning Tree* project has shown that despite these different meanings, photography can be a bridge between generations, and using photographs to build a family tree can restore their importance as a valuable keepsake, even for digitized young persons, although they may not immediately appreciate their value. It may take years for them to look at the family tree prepared by their grandparents, recalling their relationships with the people captured in the photographs, to exclaim as Roland Barthes did:

> But since it is about the person - and not the thing - the obviousness of Photography gains another dimension. To see a photographed bottle, a sprig of ivy, a hen, or a palace - there is only reality involved. But the body, the face, especially of a loved one? Since Photography attests (and this is its essence) to the existence of such a person, I would like to find it total, that is, in its essence, "in itself," beyond mere resemblance, legally functioning or inherited. Here the flatness of Photography becomes more painful because it can only

answer my frantic desire with something inexpressible: something obvious (it is the principle of Photography) and yet unbelievable (I cannot prove it). That something is an expression. The expression cannot be decomposed into parts (the moment I can decompose it, I begin to prove or deny, that is, to doubt - I depart from Photography, which is inherently obvious, and obviousness is precisely that which refuses to be decomposed). An expression is not a schematic, intellectual collection of data, just as a silhouette. Nor is the expression a mere analogy - however far-fetched - like "likeness". No, expression is something extraordinary, leading from the body to the soul: to the little individual soul, called: *animula*, good in one, bad in another. In this way, I ran through my mother's pictures until I came to a cry, the end of all language: "This is it!". At first, there were a few unimportant photos that showed only her most primitive, legitimate identity. Later, the most numerous photos, in which I could read her "individual expression" (analogous, "similar" photos). Finally, the Warming House Photograph, in which I not only recognize (the word is too heavy) but much more: I find her here. A sudden awakening, beyond "similarity," a satori where words are of no use, a rare obviousness, perhaps the only one: "Just that, yes, just that and nothing else" (Barthes, 1996, pp. 190-191).

Analysis of seniors' statements about photography classes

The main purpose of the *Learning Tree* project was for seniors to create a family tree. To make it complete, it is a good idea to add photographs of family members to the family tree. This is an additional aspect that contributes to the visual presentation of the family tree. One of the workshop activities was photo editing. Educators taught seniors how to enter family photographs into a computer, and participants also learned the basics of photo retouching. This was a very useful class due to the fact that there were usually several family members represented in a single photograph. The seniors learned how to adjust the frames in order to insert their portraits into the family tree. The project enabled participants to develop technical skills in photo editing, which proved useful in further improving the exposure of photos and enhancing saturation. What is more, in the group of Polish seniors, the photographs were also used in short films which the seniors created during the following classes[6].

[6] These tasks were carried out only in Poland. This was due to the level of competence of the project participants. The recruitment conditions of project participants were the same, but the group of seniors from Poland showed higher competencies verified in the pre-test.

Digital Storytelling through short films was one of the parts of the project carried out in Poland. These short films were created from previously retouched photographs, among other things. The seniors primarily wanted to create keepsakes for posterity. DW (70, PL) wanted to create a gift for her grandson, GM (78, PL) prepared a show on the occasion of his mother-in-law's birthday:

> I collected these various images, I was so happy that I managed to collect 60 different subjects, and I wanted to make a 2-minute clip for my grandson (...) he's 3 years old, he's far abroad, he doesn't understand much yet, but actually apart from this tree I drew this one, I put children's drawings in there and maybe it will speak to this tree, on this tree I wrote Mom, Dad and him, well... a very simple message (DW, 70, PL).

> I was doing a show for my beloved mother-in-law's 90th anniversary, two months my wife and I were flying around on two laptops and gathering material because we had to put 90 years in there in probably 40 minutes. It was, listen, a crazy job and it was pictures, videos, beliefs, comments, etc. Hell of a job, but the effect... People were crying (GM, 78, PL).

From the statements, it can be inferred that the seniors were involved in creating videos. The message of such works was rather simple; seniors placed more emphasis on sentimental value, they had the opportunity to digitally record their memories. The desire to share their work with their loved ones, which will be passing on a piece of their biography to younger generations, was predominant here; DW (70, PL) wanted to pass on the story to her grandson while asking him to preserve the tradition:

> I remembered reading such a book to my daughter that still the sky will be blue, the tree green, and the sun yellow, and that even though many years will pass perhaps with a request to him that maybe one day he will start his own family, that still the sky will be blue, the tree green and the sun yellow (DW, 70, PL).

Difficulties during the project that the seniors pointed out were mainly the varying degrees of technical preparation of the participants. Some were already familiar with the basics of photo retouching such as AT (65, PL) citing:

> PhotoScape wasn't a problem because somewhere I was making presentations in Photoshop, for example, or in PowerPoint, I saw that there are all kinds of animations and that I can use them, that is in the circle of the nearest development and for someone who wasn't doing it, it can be just such a technical problem (AT, 65, PL).

She also mentions that this can cause anger in participants who are at a higher level and would like to start a new thread already. On the other hand, for those who are first exposed to the program, it can cause frustration because they cannot understand everything. The seniors were engaged in the project, were motivated to learn, and had a desire to grow. They pointed out that in the future there should be more exercises so that the material would be systematically repeated, as evidenced by the words of UG (65, PL):

> There weren't enough repetitive exercises to automatically memorize, because when we got home and couldn't use it, we practically died a natural death. We'd come to the next class and generally start over again right, there was no sequence, also that. Thank you (UG, 70, PL).

It is worth mentioning that at the beginning of the project the computer literacy level of the Polish participants was higher than that of the participants from the partner countries which took part in the project, especially the participants from Turkey. Therefore, seniors in Poland had additional tasks, such as the previously mentioned editing of short films.

The workshop activities were conducted in a group format, so regardless of the seniors' initial level of familiarity with the programs, everyone participated in the same activities. According to one of the participants, this type of work helps build motivation. Those who were lacking at the beginning tried to improve their level: "in a group, because we are more motivated in a group, right, because I see that a colleague knows something and I don't, so I'm more motivated, right I think that's why in a group" (AD, 79, PL*)*.

GM (78, PL) also emphasizes the value of group classes: "I think it's a group, a team effort to familiarize a broad forum with the various possibilities that there are such films, such possibilities, such programs" (GM, 78, PL).

UG (65, PL), meanwhile, emphasizes that a one-to-one approach should be taken into account in the future. This will ensure a smooth flow of information and learning:

> Such a precise and better understanding would be useful to (...) obtain such fluency in the program that we wouldn't stop and wait for someone every now and then because we don't know the truth so that this fluency would be maintained (UG, 70, PL).

The seniors pointed out that in building a family tree it is very important to reach out to reliable sources thanks to which one can trace one's ancestors*:* "It was a very good reflection because I understood the value of a good research and the importance of the sources: to recognize the good websites

and databases and to understand the importance of archives to know ancestors" (MA, 61, IT).

The photographs that were inserted into the participants' family trees made the trees richer. Moreover, by inserting portraits of their ancestors, future generations will be able to familiarize themselves with the profiles of their ancestors. This is quite an important aspect, as photos that were once developed often get lost and misplaced. Seniors also recognized this. Many of them had difficulties or could not find the photos of their ancestors*:* "Unfortunately, I had just some pictures available so I didn't have many options in their selection" (GB, 61, IT).

By creating family trees, the seniors were able to search old photos in their albums, coming across photos that had been forgotten and stored in some nook or cranny: "It was very nice! I have the pictures in my house but it's different to find and collect pictures together to create the genealogical tree. And I've discovered my parents! It was a nice feeling!" (AS, 55, IT).

When digital photography emerged in the late twentieth century, it set the stage for the possibilities of capturing, processing, storing, and presenting photos (Piejko, 2008). Today's technological development gives us the possibility to digitize analog film tapes, so it is easy to convert old films or cassette tapes into digital works. The same situation happens with photos, old photos can easily be scanned and saved on a computer. This makes it easier to store them.

Seniors in the class also learned how to save photos on the computer to the proper quality: "Personally, I don't want to use my pictures at this stage because it is difficult for me to find them. Also, we learnt the importance of size quality and resolution of pictures to upload in the application" (TF, 70, IT) or "Mostly I tried to choose all photos from my family album at home and then upload them onto PC" (SG, 57, TR).

The benefits of the seniors' participation in the project were undoubtedly personal development and the acquisition of new skills in computer use, especially in the area of graphic programs for processing photographs. The motivation to learn new things was even greater as the activities resulted in creating a keepsake for future generations.

Conclusion

Workshops on building a family tree using photographs can in a way confirm the family function of photography. Pierre Bourdieu referred to it, and Christopher Musselo developed it into four functions: strengthening the

community, initiating, and sustaining interactions between family members, presenting oneself, and documenting family life (Musselo, 1980).

The activities involving family photographs not only enhanced the computer skills of the seniors. It was a unique opportunity to look into the past in order to enrich the present. Family photographs and stories about them are present in the experiences and spaces of family worlds, stories about oneself and one's family. Old photos may be kept in albums; special ones are developed, framed, and displayed at home. It is worth realizing that pictures do not only function as objects, but first of all, they live in our thoughts and memory.

Krzysztof Konecki (2005) observes that photography taken amateurishly in the twentieth century illustrates time, both individual and family, and presents the continuum of an individual's memory, his or her way of anticipating the future and the passing of time (Konecki, 2005). The family photographs that the seniors used to decorate their family tree gain special value and meaning through the associated family narratives and stories of each participating senior. Reconstructing one's own history by working with a photograph, and being able to leave for posterity a record of one's personal history in the form of a photograph or a family tree, was a valuable experience for the participants and served as a thread connecting the past with the present.

Chapter IV

THE VIRTUAL WORLD IS WITHIN REACH[7]. ON MOTIVATION IN THE EDUCATIONAL PROCESS

Introduction

The modern world is all about ubiquitous informatization. A large part of life is moved to virtual space. Online banking, online shopping, and even e-government have become commonplace. Virtual doctor's appointments and online learning are also becoming more common. This shows how much of life functions in a computerized space. The inability to move in the ICT (Information and Communication Technology) area results in exclusion and can reduce the comfort of life. An example is a railway or airline ticketing system. By making an online purchase we can take advantage of discounts, search for the most beneficial connection for us, book a seat, *etc*., it is faster and much more comfortable than the traditional waiting in line at the ticket office (Jurczyk-Romanowska, Koszczyc, Jakubowska, Marcinkiewicz-Wilk, Gulanowski, Kabát *et al*., 2019).

Intergenerational differences

Young people, who are described as "digital natives" (Prensky, 2001), move freely in the world of new technologies because it is their natural environment. They grew up surrounded by computers and rampant technology. Young generations move in the virtual zone almost as efficiently as in the real one. It happens that ICT space becomes more important for them than the real world.

Seniors are called "digital immigrants", "digital foreigners", or even "digital aliens". The first group is those who try to use the resources of the virtual world

[7] Popular maxim.

through imitation. Prensky uses the term foreigners because seniors navigating ICT can be likened to people who are not familiar with the language or culture of the online environment (Prensky, 2001). The second group is those who make few attempts to use new technologies, who are driven by curiosity but at the same time are characterized by distance. They do not feel the need to use a computer or the Internet every day (Thomas, Thomas, 2006). The third group, on the other hand, is made up of people with no experience, and who have never had contact (or only very little) with virtual reality (Jurczyk-Romanowska, 2019). In seniors who are willing to learn about ICT (*e.g.*, using the web), quality of life tends to improve (Wolski, 2010). This is stated by one of the participants in the *Learning Tree* project "I came in as a blank slate. Open to everything that I would be shown, taught, and could use someday, and it was actually very cool because it awakened my interests" (UG, 70, PL). For this reason, it is important to motivate seniors to overcome barriers and fears associated with new technologies. The *Learning Tree* project shows how to motivate seniors to learn through their passion for genealogy.

Senior citizens' concerns in learning how to use computers and new technologies

Fear of a variety of difficulties associated with computers and ICT activities also appeared among seniors participating in the *Learning Tree* project. One of the participants of the course spoke about her fears directly: "I can only say that I don't think I could handle it at all because I think I am still from that generation that is afraid of technology, afraid of new things, and afraid to use it" (SW, 71, PL). As the research described by Ariel Wrona (2016) shows, the most common fear demonstrated by seniors undertaking ICT learning is the difficulty of having to use a specific vocabulary. This refers to the many linguistic borrowings that seniors are not familiar with. There was also a theme of lack of self-confidence in the aforementioned research. People over 55 may experience neophobia[8], understood as the fear of the new, the unknown. Seniors, whose dominant characteristic is experience and knowledge of life, encounter activities previously unknown to themselves. People are afraid of what is different; however, by rationalizing fears and anxieties, it is possible to learn new things every day (Riemann, 2005). The discomfort that is caused

[8] Neophobia is the phenomenon of feeling a strong fear of new and unknown things. In this article, it is understood as the fear of new technologies. The subject literature most often treats neophobia in terms of nutrition, but the term itself refers to anything new and unfamiliar.

by the awareness that younger generations may know more and have higher competence in certain areas, may cause an aversion to new technologies and even a defensive attitude (the need for independence will not be satisfied if someone has to help seniors in anything, *e.g*., the younger generation helping with the computer) towards the world and virtual reality (Ziółkowski, 2017). Margaret Mead refers to such a society as "prefigurative" because it is the younger generations who transmit knowledge to the older generations. The change from the traditional system makes it hard for adults to find their way in the world in which the younger generation function from the beginning of their lives (Tomczyk, Wąsiński, 2013).

Motivation of older people to learn how to use new technologies

The *Learning Tree* project assumes that an interest in genealogy will motivate seniors to engage in ICT activities. To understand why it is necessary to motivate seniors through various interesting activities, it is necessary to explain how needs are categorized. Theories of motivation deal with this issue. There are many theories of motivation, and they explain how people function in society in a variety of ways. Motivation theory is defined as a view of human nature; it helps to understand the world of "dynamic engagement" (Stoner, Freeman, & Gilbert, 1998). That is a world in which various institutions, initiatives, and projects operate through the engagement of participants.

The Polish Language Dictionary states that the term motivation means: "1. That which causes one to take some action or decision; 2. The justification for someone's action or decision" (Sobol, 2006). However, when reaching into the literature on the motivational process, it is described as: "(...) a process of mental regulation on which depends the direction of human activities and the amount of energy a person is willing to expend to realize a given direction. Thus, motivation is an internal process that determines the pursuit of certain goals" (Sobol, 2006). Etymologically, the word "motivation" comes from the Latin word *motus,* and the English word *move*, meaning to move from one place to another, to stimulate action, to set in motion (Kopaliński, 1999).

One of the possible approaches to define motivation is also to say that it consists of various phenomena, intentions, wants, desires, intentions, interest in some topic, concerns, *etc.* (Reykowski, 1977). This is such a broad description that Janusz Reykowski found a common denominator for all the terms mentioned - directional tendency. It is defined as a state of readiness

(conscious or unconscious, specified to a large or small degree) to take action to achieve some intended goal. A tendency, in this context, is otherwise called a motive (or a motivational process), and all motives together - **motivation** (Reykowski, 1977). Based on a statement from one of the *Learning Tree* participants, you can see how directional bias works in practice:

> I actually decided because I had been thinking for a long time... Somewhere it comes with age... The desire to create something like this as a remembrance for my next, posterity. And there was an opportunity, and I gladly took it (AT, 65, PL).

The motivation to act was the desire to create something as a memento for future generations.

Motivation is present in those who have not satisfied, at a sufficient level for themselves, the needs arising from existence. To explain: the motivation to act occurs when a certain deficiency appears. When a person perceives or feels a particular lack (need), he or she begins to strive to satisfy it. A project participant says: "I (...) wanted to say that (...), my colleagues, my friends' colleagues, those who do not actively participate either in the Universities or in the classes, feel that it is embarrassing to walk around with an old type of phone, or not to have mail" (BZ, 70, PL). In the participant's statement, we can see that seniors feel the need for new technologies. Right after the motives, there are activities that are strictly focused on satisfaction. An example is the statement of another participant: "Also, I'm a senior here, the oldest one present, so I couldn't keep up sometimes. And it irritated me a bit, I lost a bit, I was a bit impatient, trying to keep up with people much, much younger than me. But somehow I managed to do it (...)" (AD, 79, PL). The participant is satisfied that she is fulfilling her need. Meeting seniors' need to explore new technologies is not the easiest thing to do, as they may be accompanied by the neophobia mentioned earlier, which is hard to overcome.

Theories of motivation

Many theories of motivation can be found in the subject literature. One of the most famous, based on the hierarchy of needs, was developed in the 1940s by Abraham Maslow (1943). He became an inspiration for other researchers who refer to his concept in their publications, either citing it or criticizing it. His theory stems from the dynamics of desire satisfaction. If the physiological hunger present in the body is satisfied, new needs of a higher nature are created (Maslow, 2009). It is worth mentioning at this point that he claimed

that the hierarchy of needs is static. This means that if one has fulfilled a particular physiological need, he or she is only directed up the pyramid, which consists of physiological needs, and needs for safety, belongingness, love, esteem, and self-actualization, in turn.

Physiological needs - Physiological needs are dominant. This means that if there is an extreme situation in which the body is, for example, exhausted or acutely hungry, all its other needs will recede into the background.

Need for security - the feeling of security can be defined as a state in which there is no deprivation of stability, certainty, a sense of fear, or chaos. It is a situation that does not threaten the commonly accepted order. Just as in the case of chronic deprivation of physiological needs, in the situation of long-term insecurity, all higher necessities recede into the background (Maslow, 1943).

Need for belonging and love - the hunger for contact (Maslow, 2009) - when the above-mentioned needs are fulfilled, the most important for a person is the feeling of love and the possibility of fitting into some social group. There are a number of publications treating the consequences of frequent moving, displacement, not knowing one's roots, or exclusion from various social groups (friends, family, and even work). The same applies to giving and being given love. People who do not feel the need for physiological satisfaction and who know that they are safe, strongly seek contact with other people. The *Learning Tree* project helps to meet these needs. Participants interviewed for the *Learning Tree* project indicate that they continue to meet to continue their genealogical explorations despite the end of the meeting cycle. They feel a sense of belonging to the group they have formed during the course. They learn a lot about their ancestors, which also allows them to consolidate their identity.

Need for respect/recognition - according to Maslow (2009), every individual human has a firmly established need or strong, constant desire to biuld self-esteem nad be respected. At this level of the pyramid of needs, a person works to improve skills, relationships, competencies; strives for mastery in something to earn a certain title, and receives recognition, praise, or admiration. Fulfillment of the needs resulting from this level is also included in the *Learning Tree* course. Individuals who have the knowledge and practical skills to create a family tree on a computer and can use Internet resources can impress friends or family with their technical skills.

Need for self-actualization - this need is a need of the highest order. This does not mean that it is the most important need, but it only occurs when all other needs are met. Self-actualization and fulfillment in one's passion, such as genealogy, helps seniors to set goals and skillfully pursue them. It makes

them feel fulfilled and eager to move on. One of the course participants talks about the need for self-actualization that she wants to fulfill throughout her life: “In general I am from a family of learners, I did my studies (...) even when I retired, being retired, and various such other (...). My family knows that I am still learning something” (AD, 79, PL).

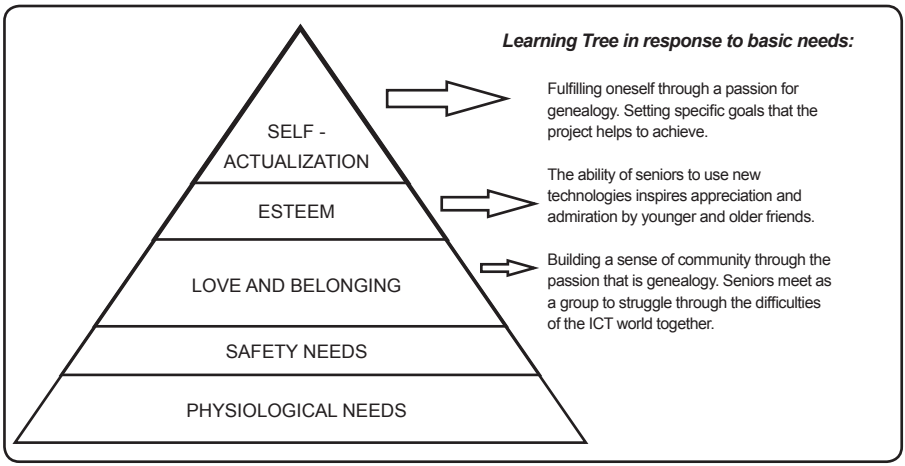


Figure 1. Abraham Maslow’s pyramid of needs and its use in the Learning Tree project. Source: authors’ study based on Maslow (2009).

All the mentioned needs are divided into a higher and lower order. The first three: physiological, safety, and belonging, are referred to as lower order, and the last two: respect/recognition and self-actualization, as higher-order (Piekarska, Piekarski, 2017). It is worth noting what changes in the behavior of seniors are initiated by new technologies because society often relies on stereotypes that are not reflected in reality (Piekarska, Piekarski, 2017). The *Learning Tree* project shows that seniors who want to learn new technologies socialize. Participants in the project encourage their friends, talk about their expanding networks, and motivate each other in deepening their ICT skills.

> [There are] those who don’t know or feel a bit inferior and I, for example, am the leader and I pull such people. I say (...) come here or here, I find out that there is some training in libraries. (...) I just keep on giving information. We need to think [about] the flow of information between young people, and technology, and us seniors (BZ, 70, PL).

This once again confirms that the quality of life of seniors increases through the use of new technologies (Kędziora-Kornatowska, Grzanka-Tykwińska, 2011).

Abraham Maslow, as a pioneer in the field of motivation, created the foundation for many future theories that, to a greater or lesser extent, relate to the pyramid of needs. The ERG concept, created by Alderfer, is a modified vision of that of Maslow. The difference Alderfer identified is the possibility that people may feel several types of needs in parallel. He segregated the levels of the pyramid into long-term, short-term, and occasional. This division describes areas such as:

E – existence - Necessities of existence, these include food, money, or shelter;

R – relatedness - The need for social relations, *i.e*., having an object of interest, acting in interpersonal relations, and wanting contact with another person;

G – growth - The need for personal development, here we can mention personal development, self-realization, striving for mastery in something (Crowder, Pupynin, 1993).

The groups of needs listed are similar enough that counterparts from Maslow's hierarchy can be matched. The distinctiveness of this theory focuses on the intensity of the need that elicits motivation. Also important, is the fact that Alderfer opposes the unidirectionality of need satisfaction. Regressive action may adversely affect one area and may enhance action in another area (Pawłowska, 2009; Poklek, 2012). If higher-level needs are unsatisfied, the motivation to fulfill lower-level needs intensifies (Crowder, Pupynin, 1993).

Another theory based on Maslow's research is Hertzberg's two-factor theory. Here he distinguishes the factors of motivation: external and internal (higher-order and basic). The first relates to possible dissatisfaction; that is, everything that can make people disappointed or disillusioned. They are often referred to as environmental stimuli, in which the problems that occur condition a toxic atmosphere and adversely affect the individual. In contrast, the second category focuses on the contradiction with the previous issue, satisfaction. The aspects mentioned here are those that are grounded in the innate qualities of human nature*, i.e*., development, satisfaction, recognition, *etc.* (Pawlowska, 2009; Poklek, 2012). In order to find their place in society, people strive for self-actualization and fulfilling the need for respect and recognition. This theory mainly refers to work as a profession, but the two-factor nature of the theory allows it to be used in the *Learning Tree* project. The developer believes that in order for motivation to occur (*e.g*., in pursuit of a genealogical passion), appropriate conditions must be created, and internal (basic) obstacles overcome (Crowder, Pupynin, 1993).

Motivations of seniors in the process of computer science education

Contrasting the terms “senior” and “new technologies”, it is worth considering the changes that are taking place in the postmodern world. They are related not only to the dynamically developing digital environment, dominating everyday life at almost every level, but also to the changes that affect entire generations of people living in the midst of the third industrial revolution.

One may get the impression that seniors are perceived as people who do not exist online *e.g.*, due to a lack of willingness and interest in the ICT topic. However, according to the CSO report the demographic situation of the elderly and the consequences of the aging of the Polish population in the light of the forecast for the years 2014-2050, people 65+ definitely come to the dominant position as an age category, and this situation, according to the forecasters’ predictions, is only expected to deepen (CSO, 2014). As indicated by “Information on the situation of older people” based on the research of the Central Statistical Office, in 2017 the number of people 60+ as a proportion of the entire population was more than 24%. Looking at the above situation unfolding on the Polish level, it is also worth referring to the problematic state of affairs and indicate how it looks from the perspective of two partner countries, which are Italy, and Turkey. Their positions can be described as dynamic and submitting to the prevailing realities. Both Italians and Turks declare a high percentage of introduction of new technologies to households. In Italy, this figure reached between 73% and 81% in 2017. On the other hand, in Turkey in the same year, according to a Eurostat study, access to devices that allow the use of the Internet was demonstrated by 50% of households. But when isolating Internet access alone, the figure already reached 81%.

The above-mentioned issues are broadly reflected in reality in the form of an increasing involvement of seniors in cultural life or education. One can mention here learning foreign languages or participating in the activities of the University of the Third Age. The participation of this age group is characterized by rather low educational activity, but it is important that their engagement in this sphere is constantly increasing. At the same time, it may condition the questions about the motivations in the process of learning of the elderly and the online activities undertaken by them. This can be confirmed by one of the voices of *Learning Tree* participants, who expressed his desire to learn in the following words:

> Yes of course I waited for this course for a long time cause I didn't know what a computer was and even the keyboard!!!! So, I started to use the keyboard and how to write a document how to use a mouse and the computer (GM, 62, IT).

After learning about the general characteristics of the motivational background, as well as its various aspects and multiplicity of theories, it is possible to make an attempt to select the most accurate concept of motivation adequate and correlating with the age of project beneficiaries and their needs, as well as consistent with the positions represented by their statements during the training. Restricting the analysis to the oldest people, it is worth taking into account their specific motivations and ways of using new technologies. Factors such as approach to learning, of which various barriers are also a part are often subjectively exaggerated to the rank of insurmountable difficulties, they can effectively complicate the learning process. However, by making the best possible efforts to consistently neutralize them, there is a chance for a simultaneous and lasting change in attitudes towards ICT among seniors. In practice, for the vast majority of seniors, taking their "first steps" in the field of new technologies with the additional support of an educator becomes a driving force for taking action and discovering their hitherto untapped potential.

Thinking about adult education, it is worth citing Malcolm Knowles, who detailed several substrates of motivation considered by adults. These include factors such as success, will, value, and pleasure. This should be related to situations where learning will bring specific benefits and gratifications to seniors, as well as pleasure. One Italian senior citizen described his experience during the course as follows:

> One important thing was that we as a group had the chance to discuss and decide suitable days for everyone and not wasting time but getting more benefits, because as we know, in life everyone has many duties and things to do, but in this way we selected the best days to fit everything and not lose our time (SA, 69, IT).

Also importantly, and somewhat included in the statement cited above, it is worthwhile for seniors to have a say in the content they will be learning, as well as to find its application valuable in practice (Kilian, 2015). However, it is often a clash of two extremes, and as a result, in research and opinion pieces we are confronted with reasons why seniors do not take advantage of the positive aspects that come from using ICT devices. These include, for example: incommensurate competences, lack of willingness to engage in getting to know the digital world, which comes under financial and technical issues, competence barriers, lack of perception of the sense of using new technolo-

gies, risks associated with the use of the network (Szmigielska, Bąk, & Hołda, 2012; Szmigielska, Bąk, & Jaszczak, 2012).

Meanwhile, the other extremity represents voices arguing for the benefits and situations that demonstrate the value of engaging in learning about what is new. In small steps, often through their personal successes in the area of new technologies, older people become motivated to delve deeper into this subject area. In the process of education, the voices of support from the trainees' closest environment also play an important role, which could be seen during the *Learning Tree* project, *e.g*., from a husband, son, daughter-in-law, or grandson *etc*. One participant mentioned*:* "I was actually encouraged to do the course by my husband, because I was going to try to find his father's genealogy" (DDW, 70, PL). The reasons for using new technologies are reflected in two levels, which are divided into extrinsic and intrinsic motivation. Extrinsic motivation is related, for example, to the family relationship, the purchase of equipment by loved ones, which is related to the pressure to start education in new technologies, motivated by the needs of, for example, the youngest members of the family (grandchildren). Changes in the rapidly developing society have also, to some extent, left their mark on seniors and imposed pressure to follow the development of new technologies *e.g*., by introducing computers to their workplace. Internal motivation included, for example, the desire to impress family members with acquired skills in a learning process often with mixed results (intergenerational grandparent-grandchild). An Italian *Learning Tree* participant describes his situation in brief as follows: "At home I have two computers. I told my sons to help me with practice at home but always we started a fight just to ask for help in how to open the computer! So, this course was very useful for me!" (GM, 62, IT). It can be seen that satisfying a growing interest in the area of new technologies consequently leads to an increase in participants' self-esteem. Seniors describing the activities they undertook and the benefits they derived from them mentioned situations such as:

— maintaining and developing relationships with family and friends, as well as establishing new relationships through the use of the communicators we have come to know;
— saving time in terms of access to information, thanks to open databases, news, the latest information;
— noticing the improvements of new technologies, filling their leisure time by translating them into everyday situations; here we can mention: editing and creating text, learning foreign languages, collecting and storing photos, watching videos, downloading audio books, online banking, online shopping, *etc*. (Szmigielska, Bąk, & Jaszczak, 2012).

The use of new technology also often involves making changes that are long-term in nature to seniors' lives. The devices they become familiar with simultaneously take care of their psychological comfort of engaging in various activities. This improves their sense of belonging, self-esteem, and also equips them with new skills that eliminates their sense of exclusion from society. One participant emphasizes how important it is to equip oneself with a new sense of awareness and critical thinking orientations when using Internet resources: *"*It was a very good reflection because I understood the value of good research and the importance of the sources: to recognize the good websites and databases and to understand the importance of archives to know ancestors*"* (MA, 61, IT). An additional aspect is the stimulation of cognitive processes through intellectual training that goes hand in hand with exercising the previously unknown possibilities of new technologies. Older people show commitment and willingness to discover the potential of the digital world. At the same time, they adapt to the conditions of the information society. They are pushing aside social exclusion by acquiring technical skills that they can use in various spheres of their lives. During mundane daily activities such as using e-mail, reading publications on the Internet, keeping in touch with family, or exploring discovered opportunities resulting from cognitive curiosity (Selwyn, Gorard, & Furlong, 2003). An Italian participant puts it in words: "My benefits was to get knowledge and confidence in how to use a computer" (FT, 59, IT). For such analyses, a division into two age groups is used, which aptly distinguishes changes in seniors' online activities. The more active group consists of seniors in the 50-64 age range, while the other group includes seniors over 65.

A high level of motivation is also associated with changes in attitudes towards self-development. In contrast to childhood, in adults this process is seen only as an opportunity that can, or cannot, be used, *i.e*., used or wasted (Wolski, 2010). Only personal involvement can determine the success of self-orientation, as an individual participating of his or her own free will in a certain process (often in a spontaneous way), which can bring clearly defined benefits involving self-creation (Wolski, 2010). Furlong gives three main reasons for seniors to use the web, which at the same time can become motivation for exploring and learning the digital world:

— the desire to be more productive and efficient,
— entertainment and keeping your mind active,
— a general desire to benefit from the Internet.

The willingness of seniors to enrich themselves with skills that enable them to operate new technologies can be related to various processes of aging. It is worth noting that the elderly person has a certain reserve of potential,

which, if well directed, may bring surprising results. Making decisions that will lead to discovering one's own predispositions to explore various, so far unfamiliar, areas (*e.g.*, ICT) can be characterized in the light of the concept of positive aging created by Robert D. Hill (2009). It emphasizes the possibility of maximum use of available effective resources in order to relatively facilitate entering the category of senior age and deriving from it the highest possible profits. Despite the not always favorable voices coming to the participants from the environment, they did not withdraw. On the contrary, they felt even more motivated by the perspective of possible benefits. As we can see in the statement of a Polish participant:

> I will say that yes, with some people they looked at me and said that you are from another planet and why do you need this and what is it for? And I say that you live here and now, and I hope that I will leave something behind for posterity so that they know from what trunk root they come (HB, 67, PL).

During the *Learning Tree* project's workshop activities, there was a desire to "stay current", a joy in mastering a new technique, and a recognition of its versatility and potential for use in other areas of life. Seniors continually mentioned younger family members whom they wanted to match in skill. They also saw time-saving benefits, such as the availability of information about family members or their place of origin to build a family tree. The possibility of refreshing old photographs by scanning them and using photo editing software was also important. Related activities with real results and practical applications, the smooth linking of the real world with the digital world, often played a key role and drove further activities. Project participants showed high enthusiasm that in this way they were able to leave a record. Their memory will live on in the form of a family tree, and the photographs stored with the new technology devices will not be destroyed. Distinguishing a few constant elements that emerge when considering the project and more or less overt motivations, several aspects can be highlighted.

Concerns before taking the course

Pre-course anxiety among seniors can be divided into several categories. Obvious age-related objective concerns such as physical limitations, slowed reaction time, possibly deteriorating mental condition, difficulty in learning what is new. We also find here a dismissive attitude of their environment to the need of teaching seniors, *e.g.*, by unqualified educators, which may be related to an inadequate educational offer or the inadequacy of convenient conditions

(Jurczyk-Romanowska, Zakowicz, 2015). A deeply advanced involution process may result in experiencing exclusion and a stereotypical approach to the education of this age group. People in the age of late adulthood struggle with the created image of seniors as a social group besieging old people's homes and queues to the pharmacy, with a fragile sense of self-esteem, reluctant to show manifestations of any forms of undertaken activity, and subjecting their lives to a certain passivity, discouragement, lack of willingness to show participation in social life through displacement by the young, dynamic generation. Through the prism of such a state of affairs, another category of barriers can be distinguished, which are subjective fears related to previous, unfriendly educational experiences, which may be associated with a sceptical attitude to learning, imbibing stereotypes and at the same time falling into a lack of self-confidence, fear of change, of failure, by violating the safety zone (Jurczyk-Romanowska, Zakowicz, 2015; statements of participants in the *Learning Tree* project: DDW, 70, PL; HB, 67, PL; GM, 62, IT; MA, 61, IT; FT 59, IT). This is a common mistake; however, this image is reproduced by the media, among others. It can clearly manipulate the perception and knowledge of older people and their real needs and possibilities. Despite the stereotypical approach, people who willingly undertake activities, both physical and those that allow for intellectual development, are not rare. Curiosity and the desire to prove to their younger family members that they are able and capable of learning something completely foreign to them far outweigh the fear of new technologies.

Overcoming these inconveniences and the internal battle, as well as taking the risk and participating, in this case, in the *Learning Tree* course, resulted definitely in the opposite of the above-mentioned voices:

> I'm not satisfied at all, I would like it to continue because what I've learned, these are the beginnings. Really. In my case, it's just a crawl, and in order to get to know these topics more deeply you need to continue, to master it..., to have it all in one finger (UG, 70, PL).

The objective educational environment of seniors in Poland has been changing in recent years, becoming more and more diverse. Policy initiatives are emerging, inspired by European Union policies to promote active aging as a lifestyle (Kozerska, 2013). This becomes evidence that the fight against fears can be won at the same time gaining, for example, new skills to move in the digital world, awakening cognitive curiosity, and expanding the group of older people interested in an educational offer adequate to their needs.

Motivations for taking a *Learning Tree* course

Numerous examples in the subject literature about the increasing number of activities undertaken by seniors as part of their local opportunities for development, as well as fostering their interests broadens social awareness, indicating that seniors also want to take advantage of the benefits of the new, dynamic reality enriched by ICT. When they reduce their fears to a minimum and make an attempt to get closer to the new generation of equipment and confront their fears with practice, seniors become susceptible learners, eager to acquire and expand the knowledge that is systematically conveyed to them in a convenient way.

The motivation of the seniors to participate in the project needed to be characterized by high determination. In the group of people participating in the workshops, one could notice the need to specify interests, the desire to focus the attention of the educator, inquisitive questions, and the drive to complete as many tasks as possible. One participant mentioned: "I might add, for example, I missed such documents in the form of notes that I could bring home and revise. When the classes were such that I had a person to help me, it went better" (BZ, 70, PL).

Participants' motivation tended to increase, especially if they found the topic of the workshop attractive and relevant to their cognitive needs. This generated requests for additional notes or examples that would facilitate independent work and improvement of skills acquired during the workshop (DDW, 70, PL; HB, 67, PL; GM, 62, IT; MA, 61, IT; FT, 59, IT).

The importance of the external environment

As mentioned above, *Learning Tree* participants were highly motivated. However, it is worth noting that in addition to the supportive attitudes, some of the participants also had to deal with unfavorable comments questioning the validity of their participation in the project. In the course of the project participants noticed that their motivation was growing along with their involvement in particular workshops. They shared their experiences during the classes, saying: "My interest grew with each meeting, and I did not expect that it could be so cool and altogether simple" (UG, 70, PL), and:

> Actually, I decided to do it, because I've been thinking for a long time... It comes with age, the desire to create something like this as a souvenir for the next, for posterity, and there was an opportunity, and I gladly took it. I want to say that my interest also grew with time (AT, 65, PL).

The activities were characterized by an atmosphere full of kindness and enthusiasm on the part of the participants. The seniors coped increasingly well with their initial fear of new technologies, and completed the tasks in a creative and imaginative manner. As a result of their diligent participation in the workshops, they were able to continue building the family tree in their homes on their own. The seniors repeatedly emphasized their desire to repeat the material on their own and to continually practice the skills they had learned: "Well, I was a little apprehensive about working at home" (BZ, 70, PL); "Well I guess we all support you here because I think we all went through it in our own way" (UG, 70, PL).

The seniors participating in the Learning Tree project also experienced moments of heartbreak and moments of doubt, but not enough to cause them to drop out. When sharing their emotions on the forum with other participants, they admitted that curiosity outweighed the momentary elements of frustration. The following statements indicate this: "Whereas neither photography nor film interests me at all. And I simply turned off from these classes. I just came out of curiosity"(BZ, 70, PL); "Besides, I am a senior citizen here, the oldest one, so I couldn't keep up sometimes. And it irritated me a little bit, I lost a little bit, I was a little bit impatient trying to keep up" (AD, 79, PL). This motivated the educators to look for new, alternative ideas on how to run their classes.

It is worth pointing out that all participants who initially declared their participation in the course persevered to the end of the training. As the seniors themselves later admitted, they were particularly interested in the possibility of preparing a family tree. In the words of one of the participants: "Well, and now I'm still trying to collect, because I'm having a christening on the first day of Christmas and maybe I'll manage to make such a small tree from this youngest descendant, too" (DDW, 70, PL).

Seniors floated a variety of visions regarding the presentation of their own ancestry. The possibilities offered by photo editing software and the application for creating a family tree surprised them. They were delighted to be able to protect their photos against the passage of time and to know that any of their descendants would be able to regularly add to their family tree in the future. Thanks to this, the workshop participants felt that the memories of them and their roots would not be forgotten. Summarizing their participation in the project, the seniors also noticed a certain change in the attitude of their friends, which they associated with a greater approval of new technologies in their everyday life:

> I just wanted to say in a word that people from my colleagues, my friends' colleagues, those who do not actively participate either in Universities or in classes, feel that it is disgusting to walk around with an old type of phone or not to have mail (BZ, 70, PL).

The attitudes presented by the project participants have undergone visible changes. In the beginning seniors were distrustful, full of fears and anxieties, limited by barriers both objective, related to age, and subjective, resulting from their own beliefs. During the training, they gained confidence and with time they became educators in their environment.

Conclusion

Adults who are active in the field of computer science education show motivation to acquire knowledge. Efforts made lead to participation in various training courses, workshops, but also self-study. Activities of this type will provide benefits that will lead to satisfying the needs of different levels of the pyramid from Maslow's theory (Malewski, 1998). Sometimes learning needs are awakened as new skills are acquired, as illustrated by the statement:

> I was expecting something completely different. That is, I expected to learn how to search the Internet to find my roots, and I expected only that. On the other hand, it was a surprise for me that we got into the film from the very beginning (AD, 79, PL).

Although there are many theories of motivation, most of them are based on A. Maslow, as discussed earlier. The pyramid theory, often considered to be incomplete, finds its justification in the case of the *Learning Tree* project. Seniors who engage in ICT activities fulfill their higher-order needs, but also some of their lower-order needs, as indicated in Figure 2. Hertzberg's theory of satisfying internal needs indicates that in order for motivation to arise, even for learning, there must first be an external stimulus. The *Learning Tree* participants, even if they were motivated by someone else, ultimately made the decision to participate in the course on their own.

Each objective perceived as the desired outcome is conditioned by a specific behavior that becomes a motive, which is in turn triggered by a specific stimulus. There is no doubt that such a mechanism has a real-world application, as could be observed during the *Learning Tree* project in the perspective of the attitudes represented by seniors: "With this course I had the chance to learn something basic and also something more than the program itself" (SA, 69, IT).

Chapter V

THE SAME, YET DIFFERENT[9]. THE DEMOGRAPHIC PROFILE OF SENIOR CITIZENS AND THE SCALE OF DIGITAL EXCLUSION IN THE PARTNER COUNTRIES

One of the features differentiating the individual partner countries of the project is their territorial location. Geopolitical location shapes culture (including religion), customs, tradition, history, nature of political dependencies and affiliations, as well as social and legal norms. All this translates into a way of understanding the world and a readiness to participate in the change of the direction and dynamics of the processes taking place, favoring the polarization of space or the division of the world into the "center" and the "peripheries", analyzed in the geographical, economic, and social (socio-cultural) contexts. Geographical peripheries are

> areas located in the marginal zone of certain territorial structures, *i.e.*, at a significant distance from the center. In the economic dimension, inclusion in the periphery is determined by the location outside the area of the highest economic activity and a low value of indicators determining the level of social and economic development. *Peripherality* in the social area is manifested by passivity, lack of participation in the creation of social reality, which is created by the center (Bajerski, 2008, p. 160):

the center produces values and symbols, while the periphery passively assimilates them. Economic and social peripherality threatens to exclude the changing world from mainstream life. The challenge for contemporary societies is to function in a virtual reality. Correcting it means counteracting digital exclusion (peripherality), which limits inclusion into the mainstream of events on both a macro and micro scale.

[9] Popular maxim.

Table 1

General data presenting each of the three countries of the project

Selected categories	Poland	Italy	Turkey
National area (in km²)	312 679 km²	302 073 km²	783 562 km²
Population status	38.4mln.	60.59mln.	79.81mln
Average life expectancy	77.4	83.6	76.5
Average age	41.9	45.7	33.1
Fertility index	1.36	1.12	2.02
Feminization index	106.6	106.1	99
Percentage of people over 60 years of age	16.8%	20.0%	8.6%
City population	60.6%	69.4%	74.8%
Employment rate	54.0%	59%	45.7%
Unemployment	3.8%	11.2%	13.8%
Post-productive age population	24.2%	34.8%	12.3%
PKB USD per capita	16 639.7 USD	35 391.7 USD	15 026.7 USD
Religion	Roman-Catholic	Roman-Catholic	Muslim
Capital city	Warsaw	Rome	Ankara
Location	Europe	Europe	Europe (3%), Asia

Sources:
https://pl.tradingeconomics.com/turkey/unemployment-rate; https://pl.tradingeconomics.com./turkey/indicators; https://businessinsider.com.pl/twojepieniadze/praca/bezrobocie-w-europie-kwiecień-2018-r-dane-eurostatu ot7z9pt.

Poland is a country located in Central and Eastern Europe, on the southern coast of the Baltic Sea. It borders Germany to the west, the Czech Republic and Slovakia to the south, Ukraine, Belarus, Lithuania, and Russia to the east. The size of the territory occupied by Poland (312 679km²) places it on the ninth place among European countries, and in terms of population (38.4 million) in the eighth place. It is a parliamentary republic with the capital in Warsaw and since 01.05.2004 a member state of the European Union. Poland is a homogenous country, with few minorities: according to the 2011 census, membership of a minority was declared by slightly more than 1% of its population (Stryjski, 2016). The most numerous of them are Germans, Belarusians, Ukrainians, Roma, Russians, Lemkos and Lithuanians. In recent years, immigration from Ukraine has been increasing: the number of Ukrainians living and working in Poland has reached 1.3 million. Within 5 years they have become the most numerous group of foreigners who came to work (Gazeta Prawna, n.d.). Christianity is the dominant religion - the vast majority of Poles are Catholics. The average age of Poles is 41.6 years, and their average life expectancy is 77.4 years. Detailed analyses show a steady

quantitative growth of the 20-64 age group and 65 years and above (currently 62.5% and 16.4% respectively), with a simultaneous decrease in the population in the group of young people - below 20 years of age (19.6% in the total population of this country). Women make up almost 52% of the total population: 107 per 100 men. There is a negative natural growth rate. 60.6% of Poles live in urban centers, while only one city - Warsaw (the capital of the country) – has a population in excess of one million. Attention should be drawn to the stabilizing urbanization rate resulting from the weakening of the trend of rural population to move to larger urban centers, characteristic of the second half of the 20th century. The population density in Poland is 124 persons/km². The economic development shows the consequences of the borders from the period of the Partitions of Poland, favoring its contractual division into Poland "A" and "B" (Bajerski, 2008, p.159). The economic condition of the country is evidenced by the values of GDP per capita. In 2017, it was USD 16,639.7, with a slight increase. Only 61.7% of Poles of working age are economically active. Analyses of employment in the basic sectors of the economy indicate that 15.8% of the working population works in agriculture, 30% in industry and 54.2% in services[10]. In December 2018, the registered unemployment rate reached 5.9% (Ministerstwo Rodziny i Polityki Społecznej, 2019).

According to studies, poverty and/or social exclusion threatens 21.9% of the country's citizens. Another of the significant problems is the continuing unequal access to high-quality education, determined by the place of residence in the administrative division into urban-rural areas (Pilch, 2002; Szymański, 2004). According to the Demographic Yearbook 2018, 26.4% of Poles have higher education: 21.5% of men and 30.9% of women (in 2011, 22.7% of city dwellers had higher education, while 10.3% of rural dwellers had higher education) (Kamińska, 2016). In terms of amounts spent on education per capita, Poland is in the final position in the list of EU Member States: the average for the EU is 1.4 thousand euro per capita, while in Poland the amount is 582 euro (GUS, 2018). A systematic increase in the level of digitalization of households is noticeable, which is measured both by their access to the Internet and access to equipment enabling them to use it. The increase in the number of people systematically using the Internet is accompanied by a decrease in the number of people who have never been connected to the Internet. According to the research conducted by the CBOS, two-thirds of adult Poles (66%) use the Internet at least once a week (browsing the Internet, e-mail, instant messaging). Over the last few years, the number of users has remained basically constant.

[10] *cf.*Google.com/search?q=struktura+zatrudnienia+w+Polsce+w+trzech+działach+gospodarki&tbm=isch&source=univ&sa=x&ved=2ahukwj168CckaDkA.

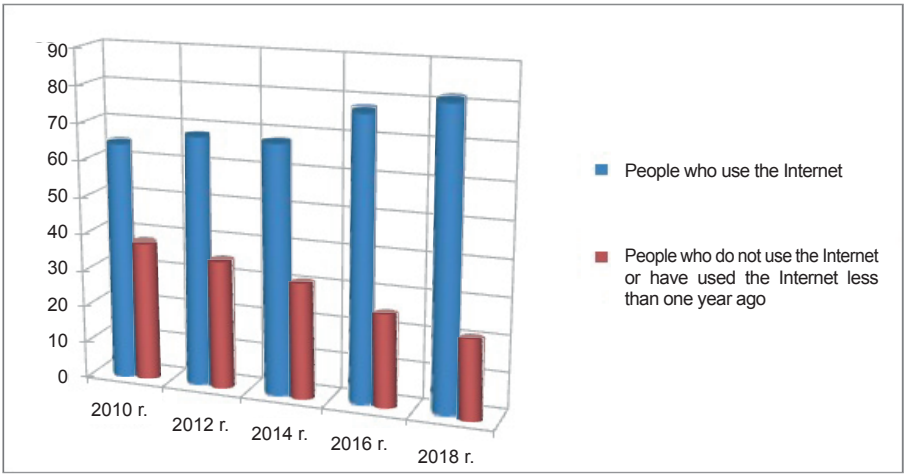


Figure 1. Nature of Internet use. Source: own elaboration based on Eurostat surveys - 2018.

Online presence is determined primarily by age. “The use of the Internet is common among the youngest respondents, aged 25-34. The vast majority of respondents aged 35-44 and two-thirds aged 45-54 are also online. Nearly half of Poles aged 55-64 and three-quarters of the oldest (aged 65 and over) remain offline” (Feliksiak, 2018, p.1). The probability of using the Internet increases professional activity, although the more frequent presence of employed people than non-working persons on the Internet may also result from the fact that the former group is younger and the latter older.

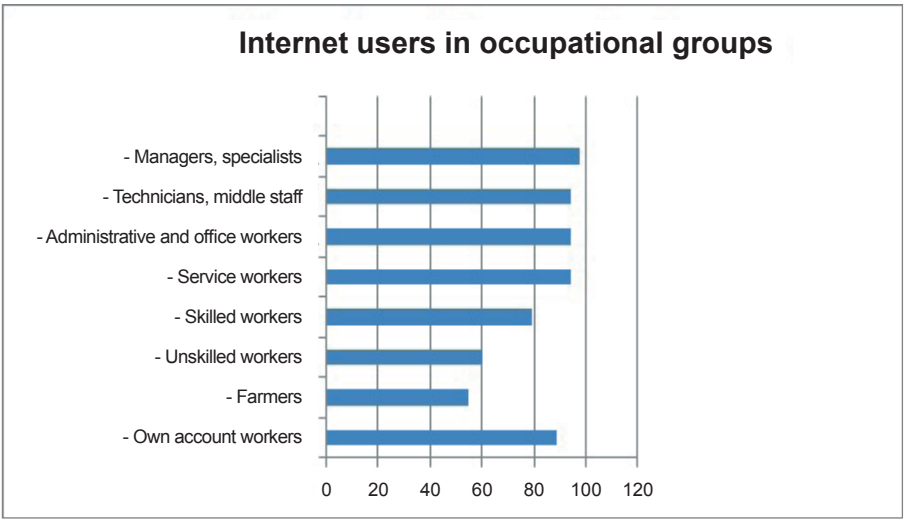


Figure 2. Professional groups of Internet users. Source: M. Feliksiak, Using the Internet. CBOS Research Communication, nr 62/2018, p. 3.

The rarest of all professional Internet users are farmers and unskilled workers. The role of education in this form of activity grows with age. In the group of people between 55 and 64 years of age, apart from the influence of education, the influence of gender is also noticeable. In this age group, men with basic vocational education, secondary or higher than women with such education are more likely to be connected to the network. Generally, among the general population, men are more often Internet users (69%) than women (63%) (Feliksiak 2018, p.1).

Table 2

Conditions of using the Internet of Poles

Age groups						Education					Substantive situation			Place of usual residence			Gender	
18-24	25-34	35-44	45-54	55-64	65 & <	P	L	V	S	H	B	A	G	RA	T/S.T	C	M	W
100	96	83	67	51	25	20	98	52	76	92	39	54	77	56	70,6	84	69	63

Source: own elaboration based on M. Feliksiak "Using the Internet". Announcement from Research No. 62/2018, CBOS, p.2-4. Abbreviations: education: P - elementary, L - lower secondary, V- vocational, S - secondary, H - higher; material situation: B - bad, A- average, G - good; gender: M - men, W - women; place of residence: C - metropolises, T./S.T. - small towns and cities, RA - rural areas.

Assuming that age is the most important factor determining the online presence, the results of the analysis of activity for the group of adults and older adults (55-74 years of age) who, according to the declarations, have ever used the Internet are presented below.

Table 3

Socio-demographic features and Internet activity

Adults and older adults who have ever used the Internet																
Individual years of the 21st century.					Age groups				Education 55-74			Gender 55-74		Place of residence 55-74		
'10	'12	'14	'16	'18	45-54	55-64	65-74	55-74	P	S	W	M	W	C	T/S.T	RA
65	68	72	78	82	84	63	40	54	15	54	92	53	54	88	83	75

Source: own elaboration based on Eurostat survey - 2018. Abbreviations explanations: P - primary education, S - secondary education, W - tertiary education, M - men, W - women, C - metropolises, T/S.T - towns and small towns, RA - rural areas.

Apart from a systematic increase in the number of adult Internet users in particular years, in the case of Poland, a clear correlation between this type of activity and age and the level of education is noticeable. At 82%, the share of the total number of Poles using the Internet in 2018, the percentage share of representatives of particular groups decreases with age. In the oldest group - 65-74 years of age, 40% of its representatives declare Internet activity; the highest percentage of people who have never used the Internet was registered here (60%), while in the 45-54 age group these values amounted to 84% and 16% respectively. Also, the level of education is a factor clearly differentiating the Internet activity of older adults. Focusing here on adults aged 55-74, it should be noted that 15% of those with primary education are active on the Internet, while in the case of adults with higher education, this figure rises to 92%. Neither gender nor place of residence seem to play a significant role in the case of this group of seniors. A small difference is noticeable in the level of involvement of city dwellers - especially large ones (88%), compared to the activity of rural areas residents (75%), but it does not seem to be significant. Based on the Eurostat survey of 2017, it can be concluded that the most important motives for giving up the use of the Internet were: lack of need - interest in this form of activity (12%) and lack of digital skills (10%). High costs of connection and equipment (devices) were an obstacle for 3% of the respondents at that time, while fears regarding privacy and security were an obstacle for 1%.

In the part ending the description of Poland as a partner country, one can still refer to the quality of social capital. The low level of social trust attracts attention - about half of Poles do not trust people they do not know, and a similar number believe that business partners should not be trusted. Trust is placed only with people from the circle of the closest family and friends, which in many cases prevents cooperation (both in business activity and in activities for the benefit of their community) and translates into a lack of comfort and sense of community with the surrounding people. The level of public trust is one of the lowest in Europe (Rostkowski, 2019). The low level of political and civic involvement is also notable (Batorski, 2015, pp. 314-354).

Italy, the second partner, is a country located on the Apennine Peninsula, in the southern part of Europe. Within its borders, there are two enclaves: San Marino in the north of the country and the Vatican in Rome. Closed from the north of the Alps, this part borders with France, Switzerland, Austria, and Slovenia. From the west, south, and east it is surrounded by the waters of several Mediterranean Sea basins: The Ligurian Sea, the Tyrrhenian Sea, the Ionian Sea, and the Adriatic Sea. The size of the occupied territory (302

073 km²) places it on the seventh position in the group of EU Member States, and the population (60.5 million) gives it the sixth position among them. Italy is a parliamentary republic, with the capital city of Rome. Apart from Rome, Milan and Naples are cities with more than one million inhabitants. It is an almost homogeneous country in terms of ethnicity: 96% of the population are Italians. Among the few minorities are Sardinians, Friuls, Tyroleans, French, Slovenians, Albanians, Arabs, Bosnians, Serbs, Poles, and others. The dominant religion is the Roman Catholic religion, to which 87.8% of Italians belong, while 12.4% are religious minorities, among which dominate Muslims, Orthodox, and Pentecostals. For years, illegal immigration has been a problem for the Italian Government. Every year, thousands of immigrants arrive from China, Africa, Turkey, India, the Philippines, and Albania. Recently, a large influx of people from Iran, Afghanistan, and Iraq has been registered. In 2007, the Italian government estimated that there were more than one million Muslims living in the country. The average age in Italy is 45.1 years and the average life expectancy is 83.6 years. The picture of the age structure is formed by three age groups: below 20 - 18.1%, between 20 and 64 - 58.3% and 65 or more - 23.6% of the total population of the country. According to the indications of the feminization rate, there are 106 women per 100 men. 66.8% of the population lives in cities. There is a systematic decrease in the urbanization rate: the relocation of Italian city dwellers to the suburbs tends to increase. The average population density is 198.4 people per km² and is very uneven. Strong population concentration occurs in the Padan lowlands, on the coast of the Apennine Peninsula, especially in the regions of Rome and Naples (500 persons/km²); the interior of the southern peninsula, the higher Alps and the interior of Sardinia and Sicily (less than 50 persons/km²) are sparsely populated. GDP per capita is USD 35 391,7 (*PKB per Capita–lista krajów*, n.d.). However, it is pointed out that around 30% of Italians are at risk of poverty and social exclusion (Polona Christiana, 2018). 42% of the working-age population of this country is economically active. According to Eurostat data, the employment rate is 58.4%. 4.2% of the population work in agriculture, in industry 30.7%, and in-services 65.1%. The unemployment rate in Italy is 11.2% (Owczarzak, 2006). In line with the challenges posed by the modern reality of postmodernity, in Italy there is a steady increase in household access to the Internet and in the equipment that can be used to connect to it. While in 2009, 53% and 56% of Italians signaled access to computers and the Internet, in 2017 these values increased to 81% and 73% respectively. This is conducive to a steady increase in the number of people systematically using the Internet, with a commensurate decrease in the number of those who have never been active on the Internet.

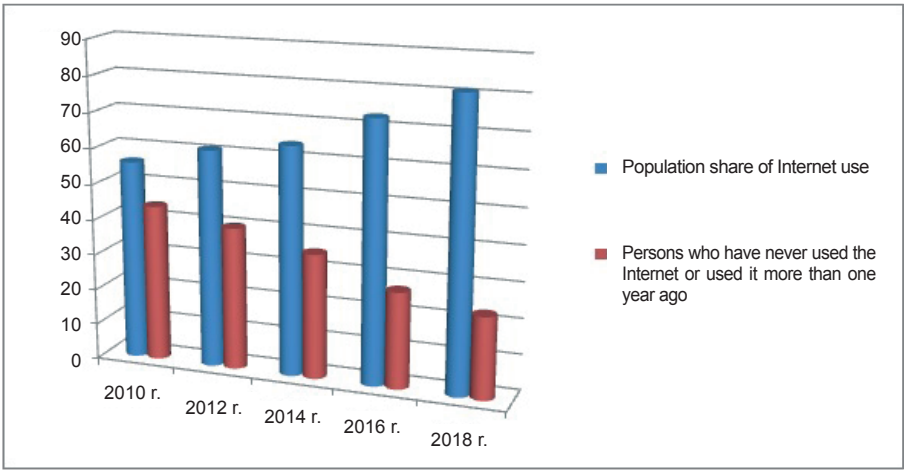


Figure 3. Internet activity of Italians. Source: own elaboration of Eurostat survey results - 2018.

Analyses of factors determining specific decisions, similarly to Polish analyses, were based on data concerning adults (55-74 years old) who have ever used the Internet.

Table 4

Socio-demographic characteristics and Internet activity

People who have ever used the Internet	Individual years					Age groups				Education 55-74			Gender 55-74		Place of residence 55-74		
	'10	'12	'14	'16	'18	45 -54	55 -64	65 -74	55 -74	P	S	W	M	W	C	T/S.T	RA
Italy	56	61	67	73	81	85	72	45	60	42	80	91	66	54	83	79	79

Source: own study based on Eurostat survey results - 2018. Abbreviations explanations: P - primary education, S - secondary education, W - tertiary education, M - men, W - women, C - metropolises, T./S.T. - small towns and cities, RA - rural areas.

The analysis of Italians' experience in the area of digitalization reveals significant growth dynamics in the number of people using the Internet between 2010 (56%) and 2018 (81%). At the same time, there is a decrease in the level of activity in this area regulated primarily by age, followed by the level of education. Thus, adults - Internet active Italians - are more often men in the 45-54 age group, having secondary and tertiary education. The relation to the place of residence is rather insignificant. It should also be noted that

the highest number of people declaring a total lack of experience in working with computers was recorded (54%) in the 65-74 age group. The 45-54 age group had 14% of such indications, while the 55-64 age group had 27%. This reinforces the belief that age plays an important role as a factor responsible for the level of Internet involvement of adults. Other reasons for the low level of involvement in this area by Italians include lack of digital skills (8%), lack of interest in the Internet (5%), or too high connection and equipment costs (3% each).

Turkey, the third partner in the project, is almost entirely located in Asia Minor. Only 3% of the country's surface area lies in Europe (south-eastern Europe). The Asian and European parts are separated by the Bosporus and Dardanelles and the Marmara Sea between them. The European part borders Bulgaria, and Greece, the Asian part borders Syria, Iraq, Iran, Azerbaijan, Armenia, and Georgia. It is surrounded by the Black Sea to the north, the Aegean Sea and the Marmara Sea to the west, and the Mediterranean Sea to the south. It is a parliamentary republic with the capital city of Ankara. Turkey is not a member of the European Union (it belongs to the group of OECD countries), but has been supported by the European Commission under the ERASMUS plus Program. It is a relatively homogeneous country in terms of nationality and religion. 70-75% of the population of this country are Turks: the largest minority are Kurds, followed by Crimean Tatars, Arabs, and Armenians. 99.8% of the total declared as Muslims (0.2% are Orthodox). In recent years, the country has been struggling with the consequences of the migration crisis caused by the mass influx of immigrants from areas threatened by war and economic deprivation.

Almost 80% of the country's citizens live in modern urban environments, 35% live in the eight cities with more than 1 million inhabitants. The largest are Istanbul, Izmir, Bursa, Gaziantep, and Konya. The urbanization rate shows an upward trend, which is supported by the Turkish belief that a city is a place where living conditions are better and access to civilization gains is easier. The population density in Turkey is 105.7 people per km². The quantitative distribution in the three age groups is as follows: 32.4% of the population is under 20 years of age, 59% between 20-64 years of age and 8.6% are Turks over 65 years of age. A negative feminization rate is recorded here: this means that there are 99 women per 100 men. Compared to the highly developed countries of the European Union, Turkey shows a significant delay in socio-economic development, and the wealth index of the country measured by GDP per capita amounted to 15.026,7 USD in 2018 (*Turcja - PKB per capita*, n.d.). According to a study carried out by the Centre for Economic and

Social Research of a private university in Istanbul, Bahcesahir, in 2016, 30% of the country's population faced extreme poverty (rp.pl, 2018). The main economic sectors in Turkey (2016) are agriculture, which employs 25.2% of the total working population, industry (energy, construction) - 19.5% and services (trade, tourism, transport, telecommunications, and banking) - 48% (Georgijew, 2017). A serious problem is the situation of women in Turkey; although depending on the region it is different (women in metropolitan areas have the same rights as women in the European Union), Turkish women living in peripheral regions of the country are discriminated against and their personal freedom is clearly limited (a problem particularly visible in the eastern parts of the country) (Niedziela-Melniczek, 2014, p. 455). The employment rate of women in the Turkish labour market is estimated at around 18% in urban areas and 37% in rural areas. Meanwhile, the employment rate of men in both urban and rural areas is 73%. On average, 25% of women in Turkey work in the labour market, but the trend is downwards.

> Turkish women do not hold managerial positions and their salaries are 40% lower than those of men. They do not have the right to benefit from the facilities of the social system (sickness benefits, maternity leave, health insurance). In the group of entrepreneurs, there only 12.5% of women, (in other OECD countries this figure is at the level of 25%). Only 0.9% of women in Turkey are employers (Niedziela-Mielniczek, 2014, p.455).

The level of education of the society in this country (from 26 to 64 years of age) is lower than in other OECD and EU countries. Secondary education is held by 26% of the Turkish population (average in OECD countries - 31%). The rate of people aged 30-34 with higher education in 2011 was 18% for women and 15% for men, while in the European Union as a whole it was: 39% for women and 30% for men. The percentage of people aged 25-64 who continue their education throughout their lives in Turkey in 2012 was 3.2%, while in the EU the percentage was 9% in 2012. The level of public spending on education in Turkey, measured as a percentage of GDP in 2011, is 3.7%. The problem is the illiteracy rate of 13% (Niedziela-Mielniczek, 2014, p. 452).

Based on the Eurostat (2017) survey on the level of digitization of households in this country, it was found that 81% of households declared Internet access and 50% declared Internet access to devices allowing its use. Compared to data recorded in previous measurements, where the values were 30% and 33% respectively, one can indicate a dynamic growth in both areas. The increase in the number of households having Internet access measured over several years is accompanied by a decrease in the number of people who have never participated in this form of activity.

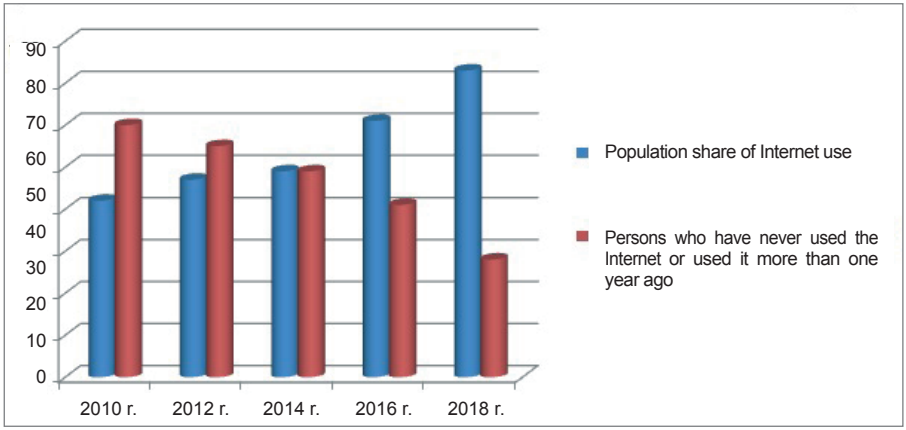


Figure 4. Turks' Internet activity. Source: own study of Eurostat survey results - 2018.

As in other partner countries, age is a key determinant of online activity: in the last three months preceding the survey of the Turkish Statistical Office (ICT 2017), 70% of the 16-24 age group and 5% of the population aged 65 and over declared an online presence. This digital gap is even more pronounced for age-related gender: only 2% of the population of women aged 65 and over declared using the Internet in the previous three months (Autyn, Capraz, 2018). In this case, the reasons for diversity should be seen not only in age or socio-economic status, emphasizing the difficult situation of poor and elderly people as the most isolated from the virtual world, but also in cultural conditions. Turkish data on online participation of older people (Autyn, Capraz, 2018) confirms and complements the results of the Turkish Internet Activity Survey presented by Eurostat.

Table 5

Socio-demographic features and Internet activity of Turks

Average in individual years of the 21st century					Adult age groups				Education 55-74			Gender 55-74		Place of residence 55-74		
'10	'12	'14	'16	'18	45-54	55-64	65-74	55-74	P	S	W	M	W	C	T/S.T	RA
42	47	54	61	73	63	41	19	33	22	73	90	42	25	*	*	*

Source: own study of Eurostat survey results - 2018. Explanations of abbreviations: P - primary education, S - secondary education, W - tertiary education, M - men, W - women, C - metropolises, T./S.T - small towns and cities, RA - rural areas.

They show that Turkey has the highest growth rate in the area of online activity compared to other partner countries. Over the eight-year period

from 2010 to 2018, it increased by 31 percentage points, while in Poland it increased by 17 percentage points and in Italy by 25 percentage points. Apart from age (the highest activity is recorded in the youngest group of adults - 44-45 years old - where it reaches 63%) and education (persons with higher education almost four times more often - 90% than those with primary education - 22%, are active online), as factors confirming their role in determining Internet activity, a clear gender impact is noted: in the 55-74 age group, men (42%) are online almost twice as often as women (25%). The Digital News Report 2015 survey showed that in the final week preceding the survey, 88% of Turks were active in the network just over half of the population declared using online news, while the average for the 18 countries (taken into account in the analysis of the project referred to above) was 80%. 67% of this group said that they use social media primarily as a source of information about what is happening in the world and in the country. This is due to the low level of Turkish trust in the traditional media (45% of respondents said they could not trust the majority of official media coverage). The Internet law in force in Turkey since 2014 has allowed the blocking of entire websites, not just pages, by court order. Since 2007, the blocking of social networking sites in Turkey has already taken place seven times. The reasons for blocking access to the platforms were based on "inflammatory" or offensive content (Dogramaci, Radciffe, 2015).

The results of the measurement of Turkish social capital showed that few people are associated with voluntary groups for common purposes, and few people read magazines. The level of trust in the government is high. Turkish society shows strong nationalist tendencies, attachment to tradition and religion. A total lack of trust in other nationalities is declared by about 30% of citizens (Niedziela-Mielniczek, 2014).

Partner countries in the face of postmodern challenges - Italy, Poland, and Turkey in the context of Europe

The above characteristics of individual countries have made it possible to reveal characteristics differentiating them from the partner country, which favors the analysis of phenomena and problems typical of the modern world, taking into account the level of advancement of measures to prevent the digital exclusion of older people.

The overall conclusion is that both Italy and Poland are the Member States of the European Union. Turkey's future membership as a candidate country to a united Europe is conditioned by the fulfillment of the Copenhagen economic criterion of 1993. "This criterion emphasises that a country applying for EU membership must have a functioning market economy, able to face competitive pressure and market forces within the EU" (Niedziela-Mielniczek, 2009, p. 75). Therefore, in the analyses carried out in the subsequent parts of the study, the situation of partner countries will be compared both to the situation of EU countries and to the situation of European countries in general. Starting with the demographic issue, it should be noted that Turkey has the highest population and also occupies the largest territory. The highest population density is recorded in Italy. While in Turkey the urbanization rate shows an upward trend, in Poland it is stabilized, while in Italy there is an outflow of population from the largest cities to the suburbs. The structure of employment in all partner countries shows that the direction of change is consistent with the changes defining postmodernity. In Italy, the process of servitization of the economy - as one of the characteristics of the information society - is advanced and here its parameters are the highest. Nevertheless, both in Poland and Turkey there is a steady increase in the number of people in the economy. If the possibility of active adaptation to the challenges of the information society is to be measured by the level of education of its citizens, it turns out that the most favorable parameters for the group of adults (25-64 years old) are achieved by Poland, while the weakest by Turkey, which still faces the problem of illiteracy.

Table 6
Adults with education below the level of upper secondary education (age 25-64) - 2009

Adults with upper secondary education below the level of upper secondary education				
	Poland	Italy	Turkey	European Union
Lower secondary school	0.5	12.6	62.3	8.4
Secondary school	12	45.7	71.8	28

Source: www.eksperci bolonscy.org.pl.

The educational distance recorded between countries is shown in the figure below.

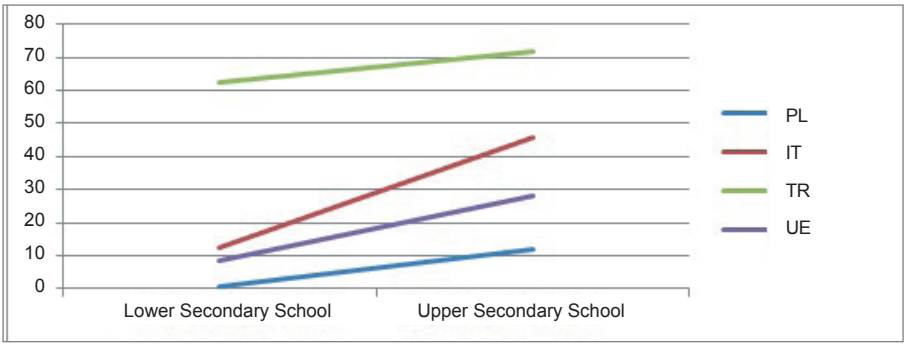


Figure 5. Adults with lower secondary education attainment level I and II (age 25-64). Source: www.ekspercibolonscy.org.pl.

Characteristic of highly developed societies in European countries, the ageing process of the population was registered in each of the three partner countries. While in the European Union people aged 65 and over constitute 19.4% of the total population, in Italy the percentage of this age group is 22.3% and in the EU countries it is the highest. Italy is ahead of Greece with 21.5% and Germany with 21.2% (Tracz-Dral, 2018, p.13), while in Poland it is 16.5% of the total population, *i.e*., below the EU average. Turkey is home to 8.3% of people over 65 years of age. The age structure of each country is shown in the figure below.

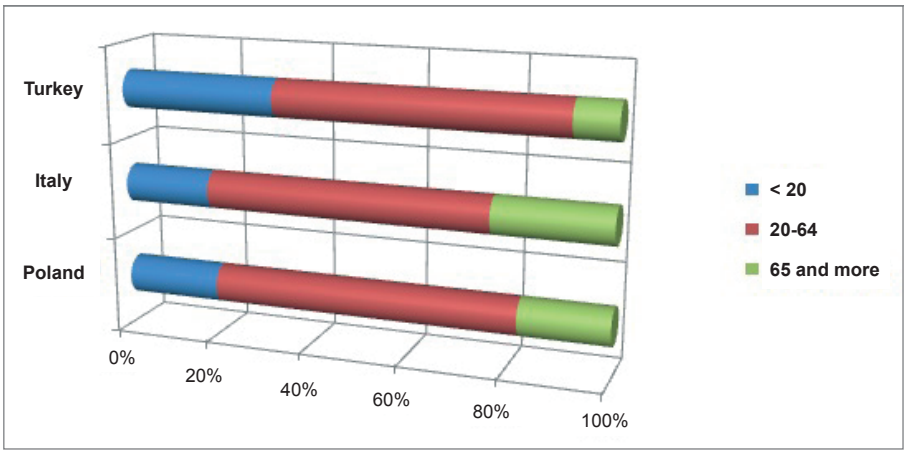


Figure 6. Age structure of the population in each partner country. Source: www.populationof.net/pl/turkey/; https://www.populationof.net.pl/poland.

The comparison of the average age of the inhabitants of Poland (41.6 years) and Italy (45.1 years) with the average age of the inhabitants of Turkey (32.8 years) and the data concerning the percentage of particular

age groups in the demographic structure of each country (the graph above) allows the perception of Turkish society as relatively young. However, people aged 65 and over are among the fastest-growing age groups in Turkey. According to the Turkish Statistical Institute (ICT, 2017), between 2012 and 2016, the number of older people in Turkey increased by 17.1% (Autyn, Capraz, 2018).

The consequences of the ageing process of modern societies are a complex problem for the economy, and its causes include a negative birth rate, including a low fertility rate (measured by the number of born children per woman of childbearing age: 15-49 years) and the life expectancy of the population. In two countries, the fertility rate parameters are lower than the EU average (2.1), which means that Poland (1.48) and Italy (1.31) are significantly below the generation replacement rate (Tracz-Dral, 2018)[11]. In Turkey, the fertility rate was the highest, slightly above the European average (2.2). Consequently, it has a negative impact on the demographic dependency ratio, measured by the level of support provided by the working-age population to the old (or young) and means the number of people of working age for every person aged 65 and over. In the European Union, this ratio is 29.9%, which means that three people in employment are employed per one person, not in employment. In Italy, it is 34.8%, in Poland 24.2%, in Turkey 12.3%[12]. An important consequence of demographic ageing of the population (apart from those of an economic nature) is the increasingly frequent living alone of older people (the so-called "singularization of old age") and feminization of ageing, which results from the fact that the feminization rate is differentiated on the basis of age. To illustrate this process on the example of the situation in Poland, it should be pointed out that in the total population of this country women constitute almost 52%. Among the population under the age of 48, there is a numerical predominance of men - in 2017. There were less than 97 women per 100 men in this age group. In turn, for the group of people aged 48 and more, the feminization rate was almost 125, while in the oldest age groups (70 and more) there were 174 women per 100 men on average. This is the effect of longer life expectancy of women (Tracz-Dral, 2018). The growing population of elderly people has difficulties with assimilation and adaptation to technological development. This poses a number of challenges for individual countries related to planning and shaping policies in the area of educational and social activity of older people in order to counteract their

[11] With an EU average of 2.1, the highest fertility rates were recorded in France (1.9) and the lowest in Malta (1.26) (Tracz-Dral, 2018).

[12] *cf.* https://ec.europa.eu/eurostat/statistics-expla-ined/index.php?title=Population_structure_and_ageing/pl.

exclusion not only from the labor market but also from public and social life. The possibility of functioning in the information society is connected with its digitalization[13], for which both access to modern information technologies and the ability to use them are crucial. Focusing on the first aspect, it should be emphasized that the analysis of the level of digitalization of each of the three partner countries of the project (presented against the average for the European Union countries), measured by the reach of the Internet and the number of households connected to it, indicate that in each of them, there is a systematic increase in access to the above.

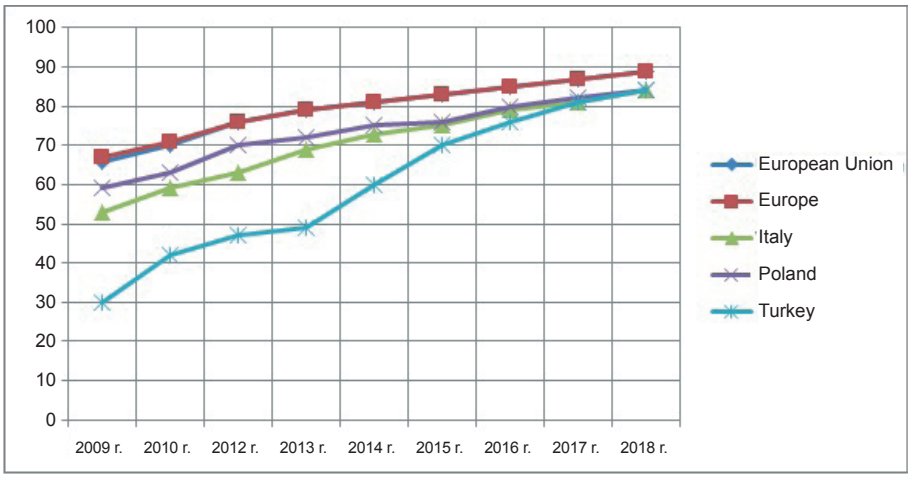


Figure 7. Households' Internet access over the years in selected countries. Source: own calculations based on Eurostat survey results - 2018.

Each of the surveyed countries also registers a more or less dynamic increase in the number of households having access to a computer as a tool enabling them to use the Internet.

Households' access to broadband Internet (in 2018 it reached 83% in Italy, 79% in Poland and 82% in Turkey, with an average of 86% in the 28 EU countries) has made a desktop computer not the only tool that has made it possible to get in touch with the world online. It is also possible to connect to it using tablets, smartphones, mobile phones, notebooks, and other mobile devices, such as multimedia or game players, e-book readers, and smart

[13] This can range from the installation of a computer to the use of a whole host of devices that are connected in various scenarios and serve specific purposes: "These can range from smartphones or tablets to complex server or cloud infrastructures and even countless sensors placed in the enterprise and constantly monitoring its needs", source: https://ceo.com.pl/marcin-rojek-czym-jest-cyfryzacja-79635.

watches. Their diversity and access to them is an indicator of both the civilizational/economic condition of the country and its level of digitization. This does not mean, however, that access to certain devices translates directly into their use to connect to the Internet.

Table 7

Households' access to the Internet and computer (desktop or portable)

Internet access to households (I) and computer (C) in individual years	2009		2010		2012		2015		2017	
	I	C	I	C	I	C	I	C	I	C
European Union (28)	66	68	70	74	76	78	83	82	87	84
European Countries	67	69	71	76	76	79	83	82	87	84
Italy	53	56	59	65	63	67	75	73	81	73
Poland	59	59	63	69	70	73	76	78	82	82
Turkey	30	33	42	44	47	50	70	51	81	50

Source: own calculations based on Eurostat 20.
Note: I - Internet, C - computer.

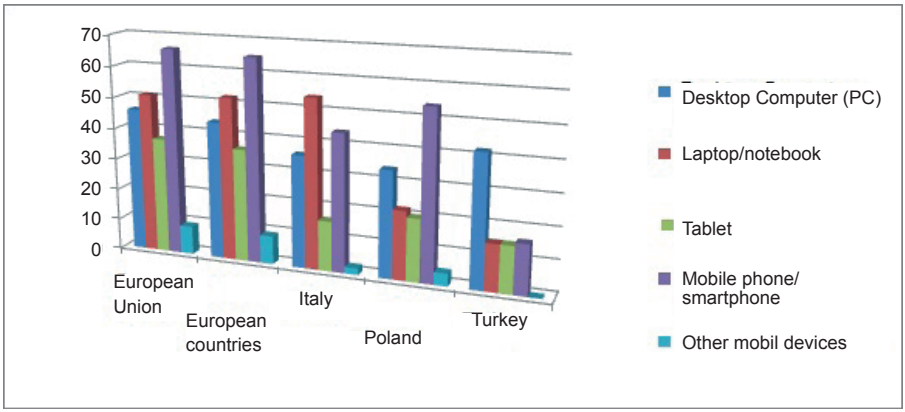


Figure 8. Widespread connectivity to the Internet through specific tools. Source: own calculations based on Eurostat 2016.

According to a Turkish survey in 2015, 30% of the total Turkish population had smartphones, while 28% of mobile users had more than one phone (Dogramaci, Radcliffe, 2015), but their percentage share of Internet access was half as high as in the previous year. Nevertheless, the ability to use particular equipment is conducive to an increase in the activity of people using the Internet, measured by the frequency of logging onto the Internet. Attention is drawn both to the systematic increase in the frequency of contact with the world using the Internet and the distance Turkey has overcome in achieving European standards in the area of digitization.

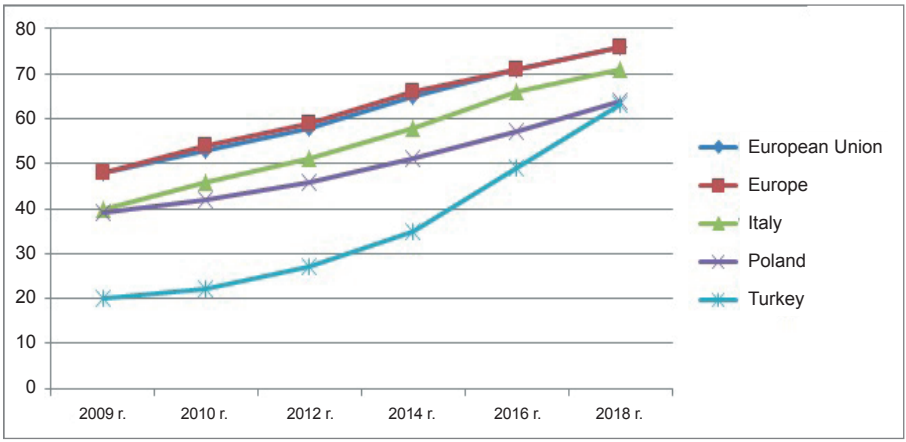


Figure 9. People who use the Internet at least once a week. Source: own study based on Eurostat studies - 2018.

Despite positive statistics on the level of digitization of each of the three countries, they are not exempt from the problem of digital exclusion of specific groups of citizens. In 2018, a significant part of their population had never used a computer or the Internet: in Italy - 19%, in Poland - 18%, in Turkey - 27%, with the average for the European Union countries - 11% and for all European countries - 11% (Eurostat, 2018). This problem applies especially to adults (over 50 years of age), among whom there is a clear correlation between online activity - or rather lack of it - and age: the higher the age group, the lower the level of activity. Analyzing the above on the example of EU countries, it should be noted that while in the 45-54 age group, 12% of its representatives have never used a computer and 8% have never used the Internet, in the 65-74 age group, the percentage increases to 40% in the first category and to 37% in the second. This means that partner countries are much less advantageous in comparison with the European Union (Table 8).

A detailed analysis of the factors determining the presence on the Internet allows us to formulate more general conclusions on the conditions of the Internet activity of individuals or groups. First of all, age and education are the most important factors determining online presence. The older the age group and the lower the level of education, the less is the online activity (Table 9).

Table 8

People who have never used a computer or the Internet

Country	Adults who have never used a computer				Adults who have never used the Internet			
	Age groups				Age groups			
	45-54	55-64	65-74	55-74	45-54	55-64	65-74	55-74
European Union (EU)	12	23	40	30	8	19	37	27
European Countries (EC)	13	12	42	31	7	18	37	26
Italy	29	41	67	53	14	27	54	39
Poland	21	39	62	48	16	37	60	46
Turkey	59	78	90	82	37	59	81	67

Source: own study based on Eurostat studies - 2018.

Table 9

Using a computer to connect to the Internet (at least once a week)

Using a computer at least once a week	Country average in 2018	Age groups			Education			Place of residence			Gender		Position in the labour market for the age of 25-64	
		45-54	55-64	65-74	P.	S.	T.	C	T/S.T	RA	M	W	active	Unemployed
EU (28)	76	86	72	52	41	67	90	86	83	78	66	61	74	47
EC	76	87	73	52	41	73	90	86	82	80	67	61	73	46
IT	71	77	60	34	32	67	82	75	71	71	54	44	65	43
PL	64	73	50	30	10	41	84	82	76	67	42	42	68	41
TR	63	59	37	16	19	65	85	-	-	-	37	22	44	30

Source: own calculations based on Eurostat studies - 2018. Abbreviations explanations: P - primary education, S - secondary education, T - tertiary education, M - men, W - women, C - metropolises, T./S.T. - small towns and cities, RA - rural areas.

The more frequent presence in the Network of younger age groups recorded in many studies results both from the fact that by participating in the process of compulsory education their representatives have continuous (daily) contact with the Internet, and its frequency further increases social activity, including presence in social networks and the type of benefits resulting from the above. In groups of adults (45-54 years of age), a frequent online presence is supported by both professional works, including its specificity, and the need to activate oneself on websites enabling one to be present in various areas of everyday life (*e.g.*, e-interviews, e-payments, e-shopping, e-offices). Also, the activity in social networks is not insignificant. A presence

on the Internet is also connected with the position of an individual in the labor market, revealing that employed people (25-64 age group) use the Internet much more often than unemployed people. The unemployed, on the other hand, are most often a group of people with a low level of education and low IT competences: groups of people with higher education are much more likely to declare their presence on the Internet. Neither gender nor infrastructural factors determine the above to the same extent as age and education, although limitations in access to broadband Internet, resulting from the place of residence and the quality of infrastructure, may shape online activity.

The accuracy of the observation on the role of age and the level of education in determining presence on the Internet is confirmed by the analysis of data on the frequency of Internet calls made using a smartphone or mobile phone.

Table 10

Connections to the Internet from a smartphone or mobile phone

Internet connections via smartphone or mobile phone													
Countries	Average for countries in 2018	Age groups				Education			Gender		Place of residence		
		45-54	55-64	65-74	55-74	P	S	T	M	W	C.	T/S.T	R.A.
European Union	67	67	48	28	39	23	40	65	42	37	72	66	59
European Countries	67	67	50	29	41	24	45	65	44	38	72	65	62
Italy	39	35	24	11	18	11	24	34	20	16	42	39	36
Poland	47	37	20	9	16	2	14	41	16	16	57	47	39
Turkey	64	53	33	13	26	17	57	74	32	19	*	*	*

Source: own calculations based on Eurostat studies - 2018; Abbreviations explanations: P - primary education, S - secondary education, T - tertiary education, M - men, W - women, C - metropolises, T/S.T - towns and small towns, RA - rural areas, * - lack of data.

As in previous analyses, there is a clear correlation between the age of a potential Internet user and the level of declared activity on the Internet. In the case of older people, however, it should be remembered and considered that the continuous development of new technologies may additionally limit their activity: apart from the lack of competence and slower perception and "taming" of subsequent devices to their own needs than in the case of young people, health barriers appear, *e.g.*, poor sight, poor memory, worse manual dexterity, worse hearing, which constitute a barrier preventing the use of new technologies (tiny, barely noticeable, hardly visible buttons), weakening the motivation to learn and learn to use them. Age is also associated with an

economic problem, which in the case of age-related household singularization or the emigration of the younger generation for work and parents without financial support, may constitute a significant barrier to access to the Internet and/or its supporting devices. However, according to numerous studies, "the lack of new technologies in households is mainly related to a lack of motivation, while financial and technical factors, such as lack of Internet access in a given building, are of little importance" (Jurczyk-Romanowska, 2019, p. 20). It turns out that many people do not log onto the Web even when they have access to it at home (Kaczmarek, 2013, p. 73). Eurostat surveys (2017) confirm that in each of the three countries, the most common reasons for giving up online activity (including access to the Internet and devices enabling access to it) is lack of motivation (the need to function on the Internet) and a lack of digital skills.

Table 11
Reasons for not being active on the Network

Data from 2017 %	High merger costs %	High costs of equipment %	Possibility to access the Internet outside the household (e.g. at work) %	There's no need for that, lack of motivation %	Lack of digital competence %	Privacy and Security Concern %	Other reasons
EU	3	3	2	6	6	1	2
European countries	3	3	2	5	4	1	1
Italy	3	3	3	5	8	1	1
Poland	3	3	0	12	10	1	3
Turkey	5	5	2	11	13	1	0

Source: own study with the use of Eurostat surveys - 2017.

Especially in the cases of Poland and Turkey, the number of indications in these two areas exceeds the Italian indications and the average for the EU and other European countries. Their interrelation seems obvious: a lack of digital skills determines the motivation to take any action in this area. On the other hand, it seems possible that the lack of needs (motivation) related to computer use or online presence weakens the need to acquire specific competencies.

The high costs of connecting and purchasing the equipment needed to operate the Internet, and the fear of privacy and security in cyberspace as barriers to Internet activity, although they have been registered, do not seem to be significant.

Older people in the Network - competencies and areas of activity

Digitalization of social space is a fact confirmed not only by a wide range of Internet services but also by the resulting increase in the activities of private persons and enterprises in areas such as e-jobs, e-health, e-services, and e-government. The role of Internet access and the ability to “move” in the modern world is evidenced by the areas of activity of Internet users. The example of the European Union Member States (Eurostat, 2018) shows a steady increase in interest in the use of e-services over a period of several years.

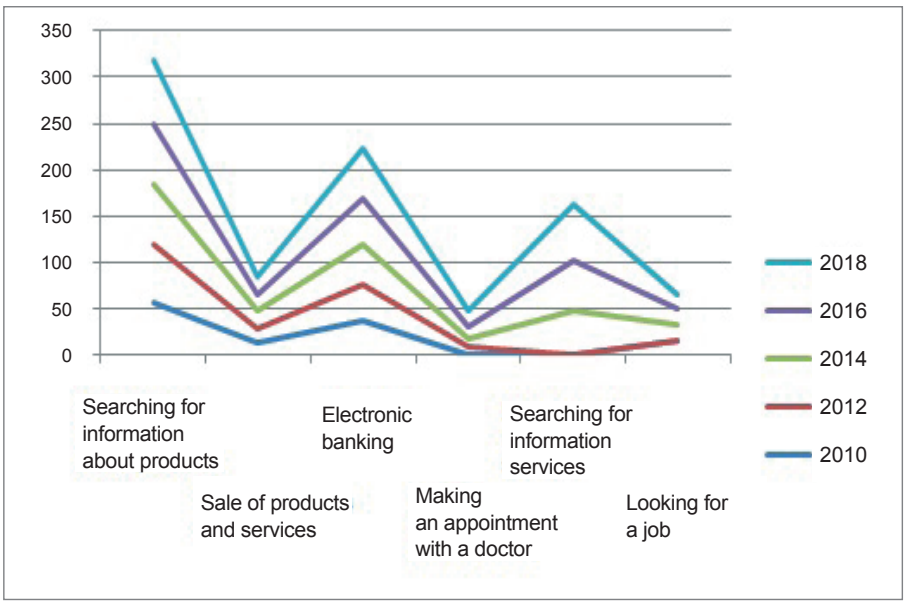


Figure 10. Increased online activity in selected areas of social life. Source: own calculations based on Eurostat - 2018.

A more detailed overview of the areas of online activity in the field of services for the partner countries, showing their situation in comparison with other European countries, is presented in the table below.

The information reality causes a situation that the use of new information technologies or the Internet is no longer associated only with convenience or improvement of the quality of life, but is increasingly necessary for full participation in the life, and in society (Kaczmarek, 2013). Limited access to information and communication technologies, including lack of ability to use

Table 12

Online activity areas

Online activity areas %	European Union	European countries	Italy	Poland	Turkey
Searching for information on training courses	32	34	25	18	21
Use of Internet Mail	73	74	57	61	32
Phone conversations	42	41	35	34	49
Social networks	56	52	46	50	60
Goods and services information	70	70	40	64	48
Information services	61	59	39	60	44
Electronic banking (e-banking)	54	54	34	44	28
Searching for teaching materials	14	14	11	9	3
Ordering doctor's appointments	17	19	9	10	25
Online voting	9	9	6	4	5
Entertainment (playing, listening to music, watching movies)	69	69	59	58	61
Job search	17	17	13	12	6
Sale of goods and services	19	20	8	14	15

Source: own study based on Eurostat studies - 2018.

Internet resources, translates into differences in quality and frequency of participation in everyday aspects of society. Thus, staying out of the reach of the Internet (offline) by older people will not only deepen their social isolation but also threatens the loss of their autonomy and independence. Dominik Batorki points out, however, that people who declare that they have no contact with the Internet are not "cut off" from the Internet. To a certain extent, they have contact with the Internet and use it through other family members when they ask them to find the information they need about goods or services, to send messages, to play a movie, *etc*. They also ask for information about the Internet (Batorski, 2015).

Based on the analysis of the areas of activity in the network of older people, we can distinguish those that are more popular with older people and those that are not. The highest parameters are achieved by those areas of Internet activity that do not expose participants to unforeseen costs (not only economic ones), or consequences related to omission or misunderstanding of the terms of use in the so-called "small print". It is important for older people to have access to information (about goods and services, current events, health), entertainment, and leisure activities (listening to music, watching films, e-mail contact, *etc*.). The least active are in the area of job search (which most often justifies the fact that for formal reasons this area of activity is beyond their sphere of interest), education (downloading

educational materials, participation in courses) and civic and political participation (voting via the Internet, on-line consultations on civic issues). The latest Eurostat survey (2014) on online interpersonal contacts shows that older people are less willing and rarely interact online with other people in order to play online together. In both the preferred and less preferred forms of online activity of older people, attention is drawn to the often-emphasized relationship between age and the level of involvement in specific activities. Also, important here is the level of education, which should be connected not only with the competencies of the Network participants but also with the type of motivation to be active. Although, as in previous analyses, the relationship between gender and the level of online activity is also revealed here (men are more active than women in the 55-74 age group), searching for health information is more often the domain of women than men (except for Turkey).

Table 13

Adult Internet activity areas

Internet activity of the age group 55 – 74. Type of action taken	Countries	Age groups				education			gender		Place of residence		
		45-54	55-64	65-74	55-74	P	S	T	M	W	C	T/S.T	RA
Searching for information about goods and services (2015)	E. Union	72	59	43	52	29	56	80	55	49	73	69	65
	Europe	73	61	42	53	29	62	80	56	49	73	67	67
	Italy	43	33	16	25	14	37	50	31	20	43	39	39
	Poland	65	43	24	35	6	35	70	36	34	70	66	57
	Turkey	36	20	8	16	8	41	60	22	10	*	*	*
Sales of goods and services (2018)	E. Union	19	12	7	10	5	11	16	13	8	20	20	18
	Europe	20	13	8	11	5	14	17	14	8	20	19	20
	Italy	8	4	2	3	2	5	6	5	2	8	8	8
	Poland	11	5	2	3	0	3	11	5	2	19	14	10
	Turkey	9	4	1	3	1	9	14	4	2	*	*	*
Internet consultation on any topic (2015)	E. Union	44	31	20	26	9	27	56	31	23	50	46	35
	Europe	45	33	20	27	10	32	57	32	23	51	48	39
	Italy	37	26	11	20	8	32	51	24	16	41	38	34
	Poland	23	15	7	12	1	9	42	13	11	39	26	24
	Turkey	13	5	2	4	1	11	31	6	2	*	*	*
Electronic Banking (2018)	E. Union	56	44	30	38	19	39	66	41	34	58	54	49
	Europe	57	45	31	39	19	44	66	43	34	59	51	52
	Italy	38	27	15	22	10	33	50	28	16	37	33	29
	Poland	43	27	13	21	2	18	58	22	21	57	47	30
	Turkey	21	11	3	8	2	21	48	13	4	*	*	*

Internet activity of the age group 55 – 74. Type of action taken	Countries	Age groups				education			gender		Place of residence		
		45-54	55-64	65-74	55-74	P	S	T	M	W	C	T/S.T	RA
Travel and Accommodation (2017)	E. Union	45	36	24	31	13	32	59	34	28	48	41	33
	Europe	46	37	25	32	13	38	60	35	29	50	42	37
	Italy	28	20	9	15	6	23	45	18	12	32	25	23
	Poland	20	11	6	9	0	7	36	10	9	35	23	12
	Turkey	7	4	1	3	1	8	26	5	1	*	*	*
Software Downloads (2015)	E. Union	19	13	8	11	3	11	25	16	7	26	23	17
	Europe	20	14	8	12	4	13	26	17	6	27	24	19
	Italy	13	9	3	6	2	11	19	10	3	17	17	15
	Poland	6	3	1	2	0	1	10	3	2	15	11	8
	Turkey	4	1	1	1	0	2	11	2	0	*	*	*
Job Search and/ or Application Sending (2017)	E. Union	15	7	1	4	2	5	7	5	4	20	16	13
	Europe	14	7	1	4	2	5	6	5	4	20	16	14
	Italy	11	4	0	2	1	4	4	3	2	14	13	12
	Poland	8	3	1	2	1	2	5	2	2	15	14	8
	Turkey	2	0	0	0	0	1	2	1	0	*	*	*
Search for health information (2018)	E. Union	54	44	33	39	21	42	61	37	41	56	51	46
	Europe	54	45	33	40	22	47	62	39	41	56	50	46
	Italy	40	30	17	25	14	36	47	25	24	37	34	33
	Poland	50	36	23	31	6	30	63	27	34	56	49	39
	Turkey	37	22	9	17	8	44	66	21	13	*	*	*
Arranging an appointment with a doctor (2018.)	E. Union	18	14	10	12	6	12	23	13	12	22	16	12
	Europe	20	16	11	14	7	14	25	14	13	25	17	14
	Italy	12	8	4	6	3	10	13	7	6	11	9	8
	Poland	10	6	3	5	0	3	16	4	5	17	8	4
	Turkey	18	11	4	8	3	22	38	11	5	*	*	*
Participation in professional networks (user profile creation) (2017)	E. Union	13	7	2	5	1	4	13	6	3	12	12	8
	Europe	12	6	2	4	1	4	12	6	3	16	11	8
	Italy	8	5	1	4	1	5	12	5	2	11	8	7
	Poland	6	3	1	2	0	1	8	3	2	15	10	6
	Turkey	1	0	0	0	0	1	4	0	0	*	*	*
Participation in online consultation or vote on civil or political issues (2017)	E. Union	9	6	5	6	2	5	14	6	5	11	8	6
	Europe	9	7	5	6	2	6	14	7	5	11	8	7
	Italy	5	5	2	4	2	5	13	4	3	7	6	6
	Poland	3	2	1	2	0	1	9	2	2	8	4	1
	Turkey	3	2	1	1	0	4	8	2	1	*	*	*
Publication of opinions on civil or political issues via websites	E. Union	11	7	5	6	3	6	12	7	5	14	11	9
	Europe	11	7	5	6	3	7	11	7	5	13	11	9
	Italy	11	8	3	6	3	9	15	8	5	14	12	12

Internet activity of the age group 55 – 74. Type of action taken	Countries	Age groups				education			gender		Place of residence		
		45-54	55-64	65-74	55-74	P	S	T	M	W	C	T/S.T	RA
(blogs, social networks) (2017)	Poland	5	3	2	3	0	2	11	3	3	12	8	4
	Turkey	8	5	1	3	1	11	20	5	2	*	*	*
Playing and/or downloading games, listening to music, or watching TV (or movies streamed over the Internet) (2018)	E. Union	22	15	11	13	11	14	15	11	15	31	29	25
	Europe	23	16	11	14	11	16	17	12	16	31	29	27
	Italy	19	10	6	8	7	11	11	8	9	22	19	20
	Poland	9	6	4	5	1	5	8	5	5	20	19	15
	Turkey	12	7	3	6	3	17	15	7	5	*	*	*
Playing and/or downloading games, listening to music, or watching web TV and/or movies (2018)	E. Union	68	51	34	44	27	45	68	47	41	74	70	63
	Europe	69	52	33	44	28	48	66	47	40	74	68	64
	Italy	60	42	21	33	21	44	57	37	28	62	58	57
	Poland	48	29	16	24	5	22	54	25	22	67	59	50
	Turkey	45	25	10	20	11	48	66	25	15	*	*	*
Reading Web-based news services/ newspapers/ Magazines (2017)	E. Union	62	50	34	43	21	46	72	47	38	66	59	55
	Europe	60	49	33	42	22	49	72	47	37	64	56	53
	Italy	41	35	16	26	13	40	64	32	21	44	38	35
	Poland	58	41	23	34	6	33	74	37	31	68	61	54
	Turkey	35	18	7	14	6	43	68	20	8	*	*	*
Playing online games with other people (last measurement 2014)	E. Union	7	3	2	3	2	3	4	3	3	14	13	9
	Europe	7	4	2	3	2	3	4	3	3	14	13	10
	Italy	5	3	1	2	1	3	4	2	2	9	8	7
	Poland	2	1	1	1	0	1	1	1	1	9	7	6
	Turkey	4	1	1	1	1	4	6	2	1	*	*	*
Political and/or civic participation (e.g., online voting) (2017)	E. Union	15	10	7	9	4	8	19	10	8	19	15	12
	Europe	15	11	7	9	4	10	19	11	8	19	15	13
	Italy	13	10	4	8	4	11	22	9	6	17	14	14
	Poland	6	4	3	4	0	3	14	4	3	15	10	5
	Turkey	9	5	2	4	1	12	21	5	2	*	*	*
Search for/ download educational materials (2017)	E. Union	12	7	3	5	1	4	14	6	4	17	13	11
	Europe	11	7	3	5	1	4	14	6	4	17	12	11
	Italy	8	6	2	4	0	6	20	5	4	13	11	10
	Poland	7	3	1	2	0	1	11	3	2	14	8	6
	Turkey	1	1	0	0	0	1	4	1	0	*	*	*
Any educational activity (2017)	E. Union	16	10	4	7	2	6	19	8	6	24	18	15
	Europe	16	9	4	7	2	6	18	8	6	23	17	15
	Italy	15	9	2	6	1	9	28	7	5	18	16	14
	Poland	8	3	1	2	0	1	12	3	2	17	10	7
	Turkey	2	1	0	1	0	1	5	1	0	*	*	*

Internet activity of the age group 55 – 74. Type of action taken	Countries	Age groups				education			gender		Place of residence		
		45-54	55-64	65-74	55-74	P	S	T	M	W	C	T/S.T	RA
Watch TV or streaming movies over the Internet (2018)	E. Union	58	43	28	36	21	37	60	40	32	66	62	54
	Europe	59	43	26	36	21	39	58	41	31	67	61	55
	Italy	53	36	17	28	17	38	51	32	24	57	52	52
	Poland	40	23	12	19	4	17	47	21	17	58	50	41
	Turkey	41	22	8	17	9	39	59	21	13	*	*	*

Source: own calculations based on Eurostat 2014, Eurostat 2015, Eurostat 2016, Eurostat 2017, Eurostat 2018; Abbreviations explanations: P - primary education, S - secondary education, T - tertiary education, M - men, W - women, C - metropolises, T./S.T. - small towns and cities, RA - rural areas; * not available.

The place of residence of adults, divided into metropolises, cities, small towns, and villages, indicates some dependencies, but most often they are so insignificant that the impact of lifestyle (rural vs. urban) seems more likely than infrastructural limitations. The image of the activity of older people is based on analyses of the types of activities undertaken with the use of computers, including their diversity.

Table 14

Types of computer-aided activities of adults

Types of computer-assisted activities of adults Eurostat-2013	Average for countries		Age groups				Education 55-74			Gender 55-74		Place of residence 55-74		
			45-54	55-64	65-74	55-74	P	S	T	M	W	C	T/S.T	RA
People who used the search engine	UE	75	76	59	37	49	25	56	86	55	45	80	76	69
	EC	76	78	60	37	50	26	62	86	56	44	80	76	73
	IT	62	61	44	20	33	15	60	80	41	25	66	61	56
	PL	64	60	37	18	30	5	29	76	31	28	72	65	57
	TR	47	28	13	5	10	3	43	71	16	5	-	-	-
Persons who have sent messages from an e-mail box with attached files	UE	65	62	46	29	39	17	43	77	44	34	71	65	57
	EC	65	64	48	29	40	17	49	76	46	34	71	65	60
	IT	55	53	37	16	27	10	53	74	35	20	60	55	49
	PL	50	39	24	11	19	1	17	64	20	18	61	50	41
	TR	29	14	5	2	4	1	18	46	7	2	-	-	-
Persons who have posted online messages to chat rooms, newsgroups, or discussion forums	UE	38	27	14	6	11	4	11	23	12	9	42	37	32
	EC	35	25	13	5	9	5	10	20	12	7	39	35	30
	IT	38	30	15	5	11	4	20	30	14	8	42	38	35
	PL	41	24	13	5	10	1	9	31	10	10	46	41	37
	TR	20	7	3	1	2	1	10	18	3	1	-	-	-

Types of computer-assisted activities of adults Eurostat-2013	Average for countries		Age groups				Education 55-74			Gender 55-74		Place of residence 55-74		
			45-54	55-64	65-74	55-74	P	S	T	M	W	C	T/S.T	RA
People who have used the Internet to make telephone conversations	UE	33	27	19	11	16	6	17	34	18	14	38	32	27
	EC	32	26	19	11	15	7	17	32	17	13	37	31	27
	IT	31	25	16	6	11	4	20	35	14	8	35	31	27
	PL	28	21	14	7	11	2	11	32	11	11	36	30	21
	TR	9	4	1	1	1	0	6	12	2	1	-	-	-
People who have used peer-to-peer file sharing to share videos, music, etc., are not allowed to share their files with others.	UE	14	8	4	2	3	1	2	8	4	2	17	13	11
	EC	14	8	4	1	3	1	2	8	4	1	17	13	10
	IT	15	10	5	1	3	1	5	11	5	1	18	14	13
	PL	14	4	2	1	1	0	1	5	2	1	19	12	10
	TR	10	3	1	0	1	0	3	6	1	0	-	-	-
People who have set up a website	UE	10	7	4	2	3	1	3	9	4	2	12	9	8
	EC	10	7	4	2	3	1	3	9	4	2	12	9	8
	IT	11	9	4	2	3	1	5	12	4	2	12	10	10
	PL	6	2	1	1	1	0	0	4	1	0	9	5	4
	TR	2	1	0	0	0	0	1	2	0	0	-	-	-

Source: own calculations based on Eurostat studies - 2013. Abbreviations explanations: P - primary education, S - secondary education, T - tertiary education, M - men, W - women, C - metropolises, T./S.T. - small towns and cities, RA - rural areas.

The conclusions from the above-mentioned lists allow us to formulate the thesis that the computer is used by older people to search for information, send e-mails, less frequently to participate in discussion groups, or participate in "chat". Moreover, the type of preferred activity is related to the level of difficulty and motivation to perform the task. For a complete picture of the digital activity of older people, the number of tasks performed by the group presented in the table above should be traced.

Basic observations from the analysis of the presented data support the conclusion that the intensity and diversity of computer and Internet activity (CIL) is primarily age-related. In addition, the following factors play an important role in the senior group: education and gender. The size of the settlement of the place of residence is not a differentiating factor. This leads to the conclusion that with age the diversity of activities undertaken on the Internet decreases, which may indicate the attachment of older people to previously known procedures or may be a sign of "neophobia" (fear of new solutions). This phenomenon concerns people with lower education and women to a greater extent. It creates target groups of recipients of potential educational activities in the field of ICT.

Table 15

Computer activity intensity of older people in the context of the number of activities carried out

Types of computer-assisted activities of adults Eurostat-2013	Average for countries	Age groups				Education (55-74)			Gender (55-74)		Place of residence (55-74)			
		45-54	55-64	65-74	55-74	P	Ś	T	M	W	C	T/S.T		RA
People who have not carried out any of the following activities	UE	2	2	3	3	3	3	4	2	3	3	2	2	2
	EC	2	2	3	3	3	3	4	2	3	3	2	2	2
	IT	1	1	0	1	0	0	1	0	1	0	1	1	1
	PL	2	3	3	1	2	1	3	2	2	3	2	2	2
	TR	1	1	1	0	1	0	3	3	1	0	-	-	-
People who have done 1-2 of the above activities	UE	30	40	36	26	32	19	38	43	33	30	30	31	31
	EC	32	43	38	26	33	19	43	46	35	31	31	32	34
	IT	19	26	23	12	18	10	33	34	22	15	19	19	19
	PL	23	34	23	12	19	4	21	34	20	18	23	23	23
	TR	27	20	10	4	8	3	34	50	13	4	-	-	-
People who have done 3-4 of the activities listed above	UE	35	31	22	12	17	7	19	37	20	15	38	35	31
	EC	34	30	21	11	17	7	19	34	20	14	37	34	31
	IT	28	26	17	7	13	5	24	35	16	10	30	29	25
	PL	32	25	15	6	12	1	10	40	12	11	35	35	28
	TR	15	6	2	1	2	0	8	16	2	1	-	-	-
People who have done 5-6 of the above-mentioned activities	UE	12	7	3	1	2	0	2	7	3	1	15	11	9
	EC	12	6	3	1	2	1	2	6	3	1	14	11	9
	IT	15	10	4	1	3	1	5	11	4	1	17	14	13
	PL	10	3	1	1	1	0	1	4	1	1	15	9	7
	TR	5	1	0	0	0	0	2	5	1	0	-	-	-

Source: own calculations based on Eurostat 2013. Abbreviations explanations: P - primary education, S - secondary education, T - tertiary education, M - men, W - women, C - metropolises, T./S.T. - small towns and cities, RA - rural areas.

Digital competence and ICT learning opportunities in the partner countries

The activity understood here as work with a computer and activity in the Network is largely determined by IT competencies. They are defined as “the ability of an individual to use a computer to discover, create, and communicate information in order to participate effectively in the context of family, school, workplace, and society in general” (Sijko, 2014, pp.11-12). In the research reports available in the literature, the CIL (Computer and Information Literacy) construct consists of seven aspects, divided into two categories:

Category 1: Information collection and management (including 1.1 Knowledge and understanding of how to use a computer; 1.2 Receiving and evaluating information; 1.3 Managing information); **Category 2:** Creation and exchange of information (including 1.3.1: 2.1 Transforming information; 2.2 Creating information; 2.3 Sharing information; 2.4 Handling information securely) (Sijko, 2014).

What level of competence do older people have? In attempts to answer this question, subjective assessments of adult Internet users were used, as well as the nature of the tasks they performed.

Table 16

Subjective assessment of digital competence

country	generality	Age groups				Education (55-74)			Gender (55-74)		Place of residence (55-74)		
		45-54	55-64	65-74	55-74	P	S	T	M	W	C	T/S.T	RA
1. digital competence at a general level - low													
UE	10	10	10	8	9	8	10	8	9	9	*	*	*
EC	10	10	10	8	9	8	10	8	9	9	*	*	*
IT	15	15	11	6	9	6	13	13	10	8	*	*	*
PL	12	13	12	6	10	3	11	10	10	9	*	*	*
TR	8	7	4	2	4	2	11	8	4	3	*	*	*
2. Digital competence at primary and secondary level													
UE	29	24	15	7	11	3	10	30	14	9	34	29	23
EC	29	23	14	6	11	3	11	28	14	8	34	28	24
IT	19	16	10	3	7	1	11	23	10	4	22	19	17
PL	19	10	5	1	4	0	2	19	4	4	27	17	14
TR	19	6	3	1	2	0	5	18	3	1	-	-	-
3. Digital competence at a higher level													
UE	56	54	39	24	32	10	34	69	38	27	61	57	48
EC	57	55	40	24	33	10	39	69	39	27	62	56	52
IT	44	42	30	12	22	6	36	63	28	16	48	42	39
PL	44	32	19	8	15	0	10	55	17	13	55	43	36
TR	28	12	6	2	4	0	11	38	7	2	-	-	-

Source: own study based on Eurostat 2016; Abbreviations explanations: P - primary education, S - secondary education, T - tertiary education, M - men, W - women, C - metropolises, T./S.T - towns and small towns, RA - rural areas, * - no data.

The trend towards high scores of one's own competencies in using the Internet is clearly noticeable: the number of people declaring to have higher IT skills is many times higher than the number of people indicating low levels. Neither age, nor education, significantly differentiates between low grades, while high grades of competencies - their number is clearly related to age and, in the 55-74 age group, to education. At each of the three levels of competence, age determines the subjective assessment of one's own abilities:

the older the age groups, the lower the frequency of trust in what one can do. Gender and place of residence also play a role here: men significantly more often highly evaluate their knowledge (skills) than women, while older inhabitants of large cities (city) more often (and sometimes even significantly more often) than older inhabitants of rural areas, declare their ability to use the Internet at a higher level. Analyses of digital competencies also take into account the frequency of performing specific activities by particular groups of people using a computer. The results are presented in the table below.

Table 17
Computer-aided activities

Partner countries 2016		Copy and move files %	Cut and paste tools to duplicate or transfer information to the screen %	Use basic arithmetic formula to add, subtraction, multiplication or divide numbers in a spreadsheet	Compress files %
European Union (28)	Average for population	82	64	44	39
	16-29	80	89	65	58
	45-54	57	62	41	35
	55-64	42	38	29	23
	65-74	24	27	15	11
European countries	Average for population	82	67	45	41
	16-29	80	91	66	61
	45-54	58	65	42	37
	55-64	42	41	31	25
	65-74	24	29	15	13
Italy	Average for population	49	56	36	34
	16-29	72	85	58	56
	45-54	48	55	43	32
	55-64	36	29	23	21
	65-74	15	17	8	7
Poland	Average for population	51	50	36	26
	16-29	84	88	68	35
	45-54	39	39	25	9
	55-64	23	18	14	4
	65-74	10	10	6	1
Turkey	Average for population	37	36	20	21
	16-29	63	65	35	38
	45-54	18	17	9	8
	55-64	8	5	4	4
	65-74	2	2	1	1

Source: own study based on Eurostat 2016.

Attention is drawn both to the quantitative distance between specific age groups (young persons vs. seniors) in terms of performing the indicated activities using a computer and to the difference between the parameters obtained in the three partner countries and the results for the population of the European Union. The results of the 16-29 age group are twice as high for the average calculated for the population of a given country and often many times as high as the results obtained by older age groups. Secondly, if the results were to be treated as a real indicator of competence, the conclusion would be that there is a significant digital divide between the European Union and Italy, Poland, and Turkey, to the disadvantage of the latter. The involvement of older people in specific activities in computer work and the relevant competencies, although in each country they are determined primarily by age, give the impression that cultural and/or economic factors specific to each of them play an additional role in this respect. All this not only directs attention to the need, but also to the digital education opportunities of the older cohort of society.

Adult education in ICT in the partner countries

According to research results published by Jurczyk-Romanowska *et al.* (2019), which show older people's attitudes towards Internet activity, a significant number of seniors want to be active on the Internet; they also want to acquire skills or broaden them. Below are examples of implemented digital education of adults in each of the partner countries:

Italy

According to ISTAT (Italian National Statistical Institute), digital illiteracy in this country is still high, especially among the elderly. This fact is conducive to focusing attention on the problem of adult education. Many public and private institutions implementing the European and national agendas promote a campaign for digital literacy. One effective method is the "intergenerational learning model" where young people from secondary schools and adults can work together. An example is a project implemented in Florence's libraries: young people aged 14-18 are teaching computer and Internet use. For people over 60, these courses are free of charge and repeated. The subject of "studies" are the basic activities and concepts: from turning on the computer, through the use of text processing software, to web browsing and e-mail. Municipalities, associations, and foundations also organize free courses for older people. An example is the "Fondazione Mondo Digitale", which has a network throughout Italy. The foundation's project "Grandparents on the Net.

All young people at the Post Office" is one of the projects aiming at the digital education of older people. It aims to train older people to use the Internet and to familiarize them with the latest communication technologies. Starting from January 2016, the project covered the entire territory of Italy. Training based on the intergenerational learning model took place in computer rooms of 30 schools, in all capitals of the regions and in the following cities: Catanzaro, Caserta, Mantova, Pisa, Asti, and Treviso. Its initiatives have two objectives: to support the active life of the third generation and to facilitate the inclusion of citizens in the transition from traditional to the digital economy, gradually closing the digital divide in the country. The program covered basic aspects of using a personal computer, knowledge of programs, and opportunities offered by the Internet, with particular emphasis on online services: access to information, health services, access to e-government, electronic payments, and online shopping. In addition to the above examples, ICT courses for adults are also organized in Italy, but their availability is related to the costs incurred by the participants.

Turkey

The concept of adult learning expressed in many complementary programs gained support in Turkey much later than in Europe. The focus on the organization of "cut and sewing courses" was therefore discontinued, indicating the need to prepare - especially older people - for full participation in the digital world. Competences in ICT education can be acquired through public education, non-formal education, and lifelong learning. The variety of initiated actions in this area is increasing, but still, the entire burden of education (including financial education) rests on the shoulders of individuals. Although many courses and activities are offered (offers of private and government organizations), public education, available in every part of the country, is helpful in solving problems. An example of an institution dealing with adult education in Turkey is the Practical School for Girls, which provides informal education for adult women. There are also a number of specialized courses. The largest institution organizing them is the "Hem Institutions". There are 935 branches in the entire country, where informal education is organized without any costs for its participants[14]. Some universities are also involved in adult education by offering online materials and education in the field of information and communication technologies[15]. Courses on ICT usage are also available on YouTube, and online. However, it seems that they can

14 *cf.* https://www.meg.gov.tr/earged/earged/Yetiskin_Egitimi.pdf

15 *cf.* https://acikders.ankara.edu.tr/course/view.php?id=4194 and https://ebs.pau.edu.tr/bilgigoster/Program.aspx?lng=1&dzy=3&br=19&bl=48&pr=385

be attended by adults who already have a certain level of competence in computer and Internet use (Autyn, Capraz, 2018). In addition, there are at least three public education centers in Turkey providing courses for people over 65: the Ataşehir Public Education Centre, the Public Education Centre, and the Evening Vocational High School (Kadiköy Halk Eğitim Merkezi ve Akşam Sanat Okulu) and the School Centre for Public Education (Kadiköy Bostanci). With the participation of older people studying there, research is being carried out to diagnose the digital needs of older people (Autyn, Capraz, 2018).

Poland

Educational activities targeted at seniors in Poland aimed at reducing digital exclusion are included in the Government Programme for Social Activity of Older Persons 2014-2020, which has been mandatory in Poland since 2013 (Jurczyk-Romanowska, 2019). The offer of education, training, and further education for seniors in Poland is quite rich. Training offers are prepared both by public entities (Third Age Universities, operating at public universities, Senior Citizen Clubs financed by local government units), non-profit organizations (foundations, associations, societies), and private companies (private care facilities, Third Age Universities organized at private universities. The widest and most coherent offer is attributed to Third Age Universities, where older people are included in the lifelong learning system. There are about 400 such institutions in Poland. The most common method of educating older people is a lecture combined with discussion. It may have a monographic, cyclical, interdisciplinary, and course character. Apart from computer courses, the curricula also includes foreign language learning, which is to facilitate both learning how to navigate the Internet and use e-mails, as well as improve the actions taken. The aim of informal education is to provide courses in practical skills: on some of them, seniors learn about advanced, modern technologies encountered in everyday life. Third Age Computer Academies offer courses in computer and Internet use. In this respect, an important role is played by non-governmental organizations, which implement a number of training courses financed from EU programs (in particular Erasmus+).

Conclusion

Older people are a group significantly exposed to the phenomenon of social marginalization. Seniors' chances of winning the competition between generations for social or aid benefits, the right to participate in social life, and

access to consumption of goods are significantly limited. The most important reasons for the above include deteriorating health conditions, feelings of loneliness, limited mobility, sedentary lifestyle, the poor material situation of the majority of seniors, absence from social life, lack of intergenerational dialogue, lack of proper social policy towards the elderly, and finally digital exclusion (Rokicki, 2016). “Although the most frequent cause of social exclusion is age and poverty and their implications, not all the old and poor are excluded and not all the excluded are the elderly and poor. Other reasons may also include gender, education, or place of residence” (Rokicki, 2016, p.190). The aging of contemporary societies is becoming an increasingly serious challenge for the social policy of states functioning in post-modern informational reality. The potential of elderly people by pushing them - often against their own will - into the periphery of social life has been neglected. Digital education in the information society may be an opportunity for those who still want to be active and will contribute to shaping the sense of responsibility and conscious engagement in the processes taking place in the dynamically changing world. However, the problem remains of the readiness of older people to participate in education. Analyses of the age structure of adults participating in the education system contained in the Eurydice Report show that in 2009, people from older age groups participated in formal educational programs much less frequently than young adults (25-34). On average across the European Union, 13% of people aged 25-34 participated in formal education, while in the 35-54 and 55-64 age groups there were only 5% and 2% respectively.

Table 18

Participation of adults in formal and informal learning

Participation of adults in formal and informal education (age 25-64) - 2009				
	PL	IT	TR	UE
Formal education	5.5	4.4	2.3	6.2
Informal education	18.6	20.2	12.8	31.5

Source: www.ekspercibolonscy.org.pl.

Statistics on the analysis of adult participation in non-formal education look slightly better, but even here the interest in education decreases with age, reaching the lowest level in the oldest groups. A low level of involvement of older people in education (readiness to be active in the field of formal or in-formal education) may constitute a serious obstacle to the expected results of educational programs which, in their assumption of digital exclusion, prevent this age group from being excluded.

Revision of the hitherto applied program solutions in the field of education (not only digital education) of the elderly seems to be a necessity. Potentially prepared educational proposals should include both improvement and expansion of the offer and adaptation of the learning process (learning) to the individual needs of particular groups and individuals, regardless of the level of their qualifications. It is important to develop effective information, counseling, and motivational strategies encouraging older people to develop and improve their basic skills (reading, writing, numeracy) and digital skills. Finally, to broaden and develop teachers' competencies to teach skills that enable older people to make effective use of information and communication technologies. Apart from the often emphasized need to shape hard competencies, attention should also be focused on soft competencies: not only the ability to use the Internet and work with a specific device but also shaping beliefs strengthening the motivation to function on the Internet: it is not true that "the Internet is only for young people", it is not true that "I cannot learn, and it is too late for learning", it is not true that "the Internet is a waste of time" (Autyn, Capraz, 2018), with simultaneous shaping of the belief in the conveniences resulting from the use of the Internet (being up-to-date, independent), its social values (reducing the feeling of loneliness), and other benefits - not only individual ones - which translate into the high quality of social capital (civic and political activity, *etc*.) of the contemporary digital world.

Chapter VI

THE PURPOSE IS THE REASON YOU TRAVEL, AND THE PASSION IS THE FIRE THAT LIGHTS THE WAY[16]. EFFECTIVENESS OF LEARNING TREE TRAINING IN THE LIGHT OF QUANTITATIVE ANALYSIS

Didactic and research objectives of the *Learning Tree* project

Research on the effectiveness of *Learning Tree* training was conducted as a quasi-experiment. The research involved 36 senior citizens from the partner countries: Poland (11 participants), Turkey (10 participants), and Italy (15 participants). During the recruitment process for the project, the seniors were asked about their interests and competencies in the area of genealogy (see Chapter II of this book for analogical genealogical competencies). The premise of the project was to utilize an interest in genealogy as a motivation to undertaking computer and Internet training.

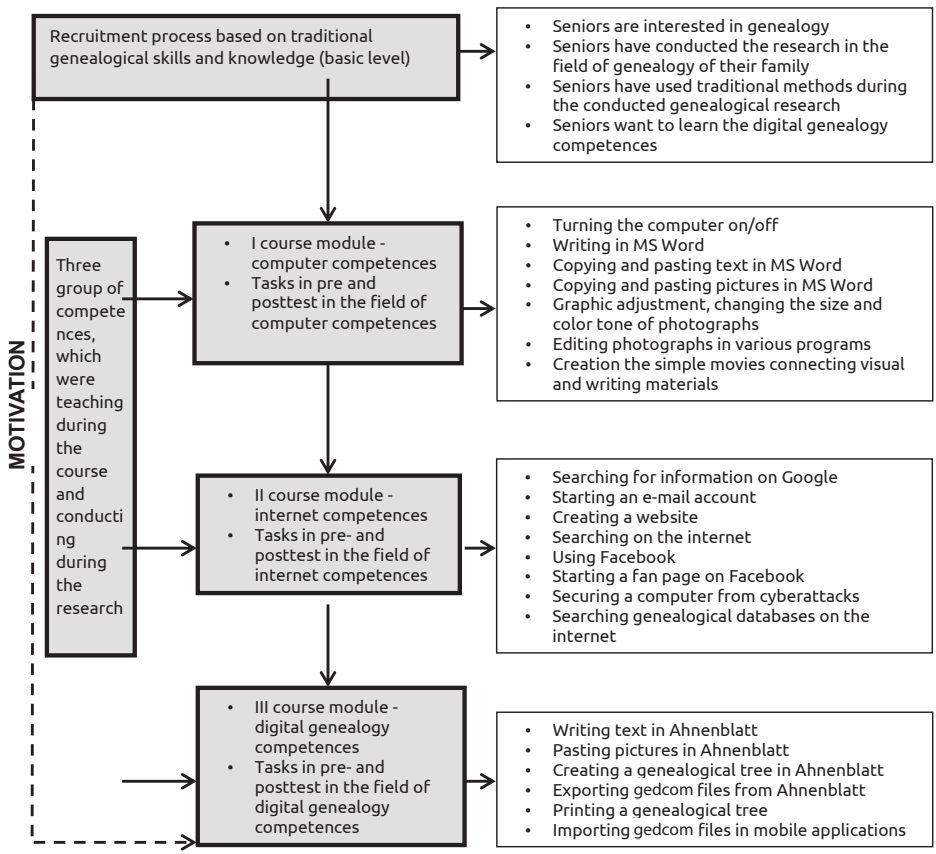
The course created for the project comprised 32 teaching hours, delivered in three thematic modules. The aim of the first module was to develop computer competencies (see chapter V of this book). Module two focused on Internet competencies (see chapter V of this book). The first two parts of the course laid the foundations for module three, which developed the participants' digital genealogical competence (see chapter II of this book). A detailed syllabus with scenarios can be found in the appendix of this book. All scenarios are equipped with different sets of tasks designed for course participants. In addition, assignments with a higher level of difficulty dedicated to more advanced participants were also prepared. The content of these

[16] Anonymous. Source: https://swiatcytatow.pl/cytaty-o-pasji/.

tasks included working with photography and creating digital family stories. The course program was implemented in spring 2019 in each of the partner countries.

The course was preceded by an organizational meeting during which the level of computer, Internet, and genealogical (digital) competence of the seniors joining the training was checked. This was done using pre-tests covering 20 topics connected thematically to the training program. Similarly, after the course, an additional meeting with the project beneficiaries was organized during which the level of their computer, Internet and genealogical (digital) competencies were checked. For this purpose, a post-test was used, which covered the same topics as in the pretest.

The diagram below presents the learning and research model that was created for the *Learning Tree* project.



Picture 1. A didactic and research model. Source: authors' own study.

Statistical analysis was then performed on the data from the pre-tests and post-tests conducted among the project participants. Differences between pre-test and post-test were described in tables by arithmetic means (given with standard deviations) between the first and second measurements of individual variables (skills) and their three summary indices (C, I, G). The significance of these differences was determined using non-parametric procedure for dependent sample. The Wilcoxon Signed Ranks Test is the non-parametric equivalent of the Student's t-test. The use of a non-parametric test was based on the fact that most of the variables revealed distributions significantly different from the normal distribution (deviations from normality consisted of strong asymmetry of distribution - skewness coefficients > 2.00). Z statistics calculated for ranked differences in paired values of pre-test and post-test measurements determined statistical significance (p-value). Differences between pre-test and post-test were defined as significant when the *p-value* was less than 0.05.

Results of the study

As a result of the study, statistically, significant gains in competence were observed in all areas studied (computer, Internet, and digital-genealogical).

Table 1

Differences between pretests and posttests in terms of three competences

Measure	N	Mean	Std. Dev.	Min.	Max.	Significance of differences [1]
Level of the computer competences						
Pre-test	36	14.53	6.281	7	30	Z = -5.234; p = 0.000
Post-test	36	26.00	5.404	17	35	
Level of the Internet competences						
Pre-test	36	11.94	3.794	7	21	Z = -5.234; p = 0.000
Post-test	36	21.39	6.587	9	33	
Level of the digital genealogical competences						
Pre-test	36	7.08	2.454	6	18	Z = - 5.205; p = 0.000
Post-test	36	18.08	5.925	7	28	

Source: authors' own study.

Note: [1] Significance determined by non-parametric Wilcoxon Signed Ranks Test.

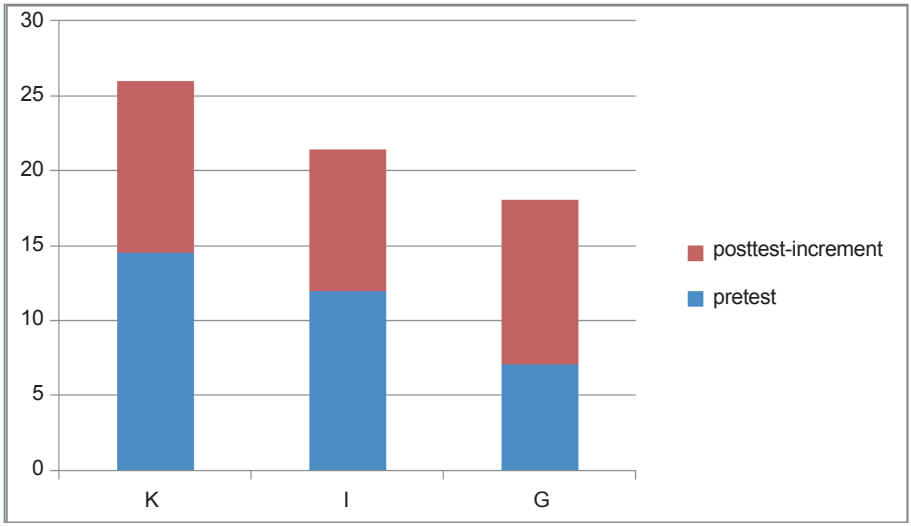


Figure 1. Increment in the area of studied competences tested by means of pre- and post-tests. Source: authors' own study.

According to the assumed teaching and research model, computer competencies included the following:

— Turning the computer on/off;
— Writing in MS Word;
— Copying and pasting text in MS Word;
— Copying and pasting pictures in MS Word;
— Changing the size of photographs;
— Graphic adjustment, changing the color tone of photographs;
— Editing photographs in various programs.

Within these competencies, the highest standard deviation was observed in the pre-test area (6.281, see Table 1), which may be dictated by the large discrepancies in the basic computer-related skills with which the seniors entered the project. Regardless of the initial level of competence exhibited by the study participants, statistically, significant gains in competence were observed in this area. Online competencies included:

— Searching for information on Google;
— Starting an e-mail account;
— Creating a website;
— Searching genealogical databases on the Internet;
— Using Facebook;
— Starting a fan page on Facebook;
— Securing a computer from cyberattacks.

These competencies show the lowest (although still statistically significant) increase in competencies acquired as a result of the *Learning Tree* project. This is not a surprising finding, given that one of the main motivations for learning to use a computer in the countries studied is the desire to use the Internet (see chapter V of this book). Therefore, seniors participating in the study had a fairly high level of competence in this group. Based on the analysis of EUROSTAT data, it should also be noted that we use the Internet through various devices, especially smartphones, for this purpose. Therefore, education in this area was often based on using analogies to the already known principles of cell phones.

The third area explored was digital genealogical literacy, which included:

— Writing text in Ahnenblatt;
— Pasting pictures in Ahnenblatt;
— Creating a genealogical tree in Ahnenblatt;
— Exporting gedcom files from Ahnenblatt;
— Printing a genealogical tree;
— Importing gedcom files in mobile applications.

This was the area with the lowest level of initial competence of the seniors. At the same time, the lowest indication of the standard deviation allows us to conclude that the level of competence of the seniors was most similar in this group. Also in this area, a statistically significant increase in the competence of the study participants was observed.

Analyzing in detail the competencies of the seniors in the entire study sample, it should be noted that a statistically significant increase was observed in each issue covered by the pre-and post-test. This is presented in Table 2, as well as in Figures 1 and 2.

Table 2
Differences between pre-test and post-test in the entire survey sample (N=36)

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
1 - Turning the computer on/off	36	3.42	1.57	1-5	4.64	.68	3-5	-3.720	.000
2 - Writing in MS Word	36	2.47	1.42	1-5	4.08	.77	3-5	-4.720	.000
3 - Copying and pasting text in MS Word	36	2.06	1.29	1-5	3.89	.89	2-5	-4.873	.000
4 - Copying and pasting pictures in MS Word	36	1.72	1.16	1-5	3.53	1.11	1-5	-4.994	.000
5 - Changing the size of photographs	36	1.78	1.07	1-5	3.39	1.08	1-5	-4.874	.000

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
6 - Graphic adjustment, changing the color tone of photographs	36	1.67	.89	1-4	3.33	1.09	1-5	-5.176	.000
7 - Editing photographs in various programs	36	1.42	.73	1-3	3.14	1.12	1-5	-5.167	.000
8 - Searching for information on Google	36	2.81	1.41	1-5	3.92	1.18	2-5	-3.835	.000
9 - Starting an e-mail account	36	1.94	1.19	1-5	3.47	1.21	1-5	-4,855	.000
10 - Creating a website	36	1.14	.35	1-2	2.14	1.31	1-4	-3.589	.000
11 - Searching genealogical databases on the internet	36	1.50	.84	1-4	3.31	1.01	1-5	-4.879	.000
12 - Using Facebook	36	2.06	1.17	1-5	3.19	1.35	1-5	-4.213	.000
13 - Starting a fan page on Facebook	36	1.25	.55	1-3	2.78	1.40	1-5	-4.592	.000
14 - Securing a computer from cyberattacks	36	1.25	.50	1-3	2.58	1.20	1-5	-4.627	.000
15 - Writing text in Ahnenblatt	36	1.11	.40	1-3	3.33	1.09	1-5	-5.174	.000
16 - Pasting pictures in Ahnenblatt	36	1.11	.40	1-3	3.08	1.10	1-5	-5.034	.000
17 - Creating a genealogical tree in Ahnenblatt	36	1.17	.51	1-3	3.36	.90	2-5	-5.224	.000
18 - Exporting gedcom files from Ahnenblatt	36	1.19	.47	1-3	2.81	1.19	1-5	-4.685	.000
19 - Printing a genealogical tree	36	1.31	.62	1-3	2.81	1.41	1-5	-4.506	.000
20 - Importing gedcom files in mobile applications	36	1.19	.47	1-3	2.69	1.41	1-5	-4.235	.000
K - Computer competences	36	14.53	6.28	7-30	26.00	5.40	17-35	-5.234	.000
I - Internet competences	36	11.94	3.79	7-21	21.39	6.59	9-33	-5.234	.000
G - Digital genealogy competences	36	7.08	2.45	6-18	18.08	5.92	7-27	-5.205	.000

Source: authors' own study.

Note: N= number of cases, M = mean, SD = standard deviation, Min-max = minimum-maximum range, Z = Z coefficient for Wilcoxon signed ranks test based on negative ranks, p = significance level.

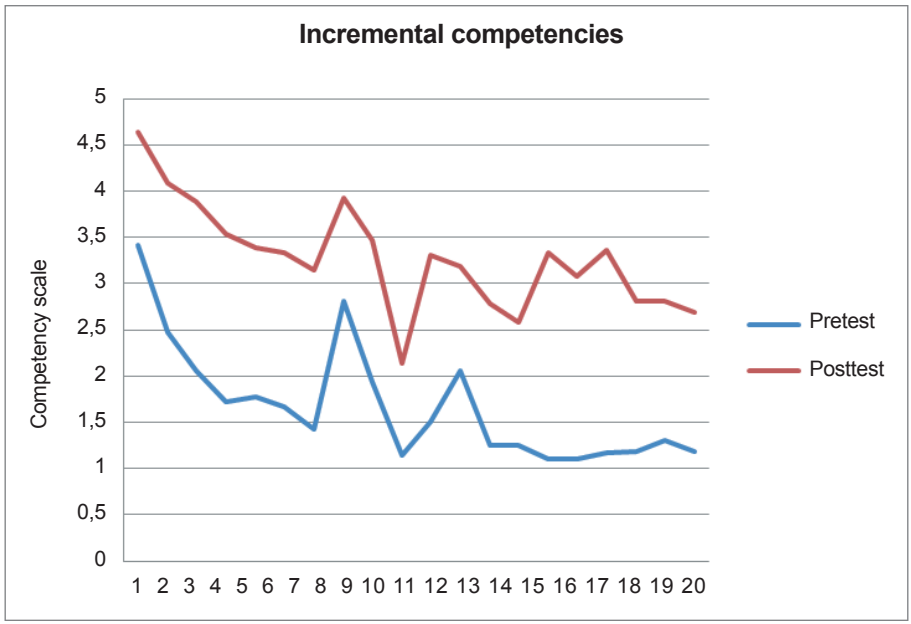


Figure 2. Illustration of competence growth in single issues verified by pre- and post-test. Source: authors' own study.

However, an analysis of the results by country shows that a statistically significant increase in all analyzed competencies is only observable in Turkey (*cf*., Table 5, Figure 5). This is probably due to the lowest competencies declared by the participants of the study in the pre-test, a systematic and diligent approach to the training process, as could be observed during the project. This is also confirmed by the analysis of the level of computer and Internet competencies conducted within the EUROSTAT survey (see chapter V). The relatively low level of computer and internet competencies in the Turkish population may encourage them to take advantage of free training opportunities to acquire such competencies. On the other hand, seniors participating in the study from Poland, and Italy, at the time of starting the project, on the one hand, already had some computer and Internet competencies, therefore these two categories included skills for which no statistically significant increase was observed. In the group of Poles surveyed, these include: Turning the computer on/off, Starting a fan page on Facebook, Securing a computer from cyberattacks (Table 3). On the other hand, among the Italians surveyed, we can mention such competencies as Searching for information on Google, Creating a website, Using Facebook, Importing gedcom files in mobile applications (*cf*. Table 4). Within the base competencies - such as the ability to turn the computer on and off (Q.1),

searching for information on Google (Q.8), or often used while using a smartphone, such as using Facebook (Q.10) the respondents from the above countries scored high in the pre-test, indicating that they had already used these skills before the training. On the other hand, no statistically significant increase in the competencies of setting up a Facebook page (Q.13), protecting a computer against cyber-attacks (Q.14), creating a website (Q.10), or importing *gedcom* files to mobile applications (Q.20), can be explained by the high level of difficulty of the tasks, as well as a certain selectivity in the choices made by project participants, probably dictated by the usefulness of the acquired competences. Research participants in these areas did not have high competencies at the time of joining the project, as evidenced by the pretest indications. At the same time, they did not significantly raise their competencies during the training, as evidenced by the post-tests (*cf*. Figure 3 and Figure 4). Taking into account the fact that all research subgroups were provided with the same program, it can be concluded that seniors from countries with higher availability of computer training and higher basic skills are more critical, selective, and pragmatic about the training program offered to them. They independently decide to engage in a specific area of training, while foregoing opportunities to acquire competencies they find too difficult (*e.g*., securing computers against cyber-attacks) or less useful (*e.g*., creating their own website). Such selectivity is not observed among respondents from Turkey, who approached the entire training process with similar commitment. This may be explained by the smaller training offerings, as well as a lesser understanding of the pragmatic aspect of the content offered during the training

As far as the third group of competencies is concerned: digital genealogical - a statistically significant increase of competencies was observed in all of the studied groups (except for the competence of importing *gedcom* files to mobile applications in Italy). This area was a complete novelty for most of the participants, who learned it only during the project. Based on the previous interest in genealogy declared by the seniors at the recruitment stage, while learning new things, they complemented their skills in areas where they had some experience in using computers and the Internet (in the case of Italy and Poland) or acquired completely new competences in this area, as was the case with Turkish seniors.

Table 3

Differences between pre-test and post-test in the Polish survey sample (N=36)

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
1 - Turning the computer on/off	11	4.64	.674	3-5	4.91	.302	4-5	-1,342	.180
2 - Writing in MS Word	11	3.27	1.555	1-5	4.64	.505	4-5	-2.392	.017
3 - Copying and pasting text in MS Word	11	2.82	1.537	1-5	4.45	.688	3-5	-2.456	.014
4 - Copying and pasting pictures in MS Word	11	2.09	1.375	1-5	3.82	1.168	1-5	-2.539	.011
5 - Changing the size of photographs	11	1.73	1.272	1-5	3.64	1.027	1-5	-2.714	.007
6 - Graphic adjustment, changing the color tone of photographs	11	1.45	.820	1-3	3.36	1.120	1-5	-2.836	.005
7 - Editing photographs in various programs	11	1.09	.302	1-2	2.91	.944	1-4	-2.873	.004
8 - Searching for information on Google	11	3.73	1.272	1-5	4.82	.405	4-5	-2.232	.026
9 - Starting an e-mail account	11	2.91	1.578	1-5	4.45	.688	3-5	-2.539	.011
10 - Creating a website	11	1.18	.405	1-2	2.09	1.136	1-4	-2.060	.039
11 - Searching genealogical databases on the internet	11	1.82	.982	1-3	3.82	.603	3-5	-2.694	.007
12 - Using Facebook	11	2.09	1.300	1-5	3.00	1.612	1-5	-2.058	.040
13 - Starting a fanpage on Facebook	11	1.00	.000	1-1	1.73	1.272	1-5	-1.841	.066
14 - Securing a computer from cyberattacks	11	1.09	.302	1-2	1.82	1.168	1-5	-1.897	.058
15 - Writing text in Ahnenblatt	11	1.00	.000	1-1	4.00	.894	3-5	-2.969	.003

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
16 - Pasting pictures in Ahnenblatt	11	1.00	.000	1-1	3.55	1.214	1-5	-2.850	.004
17 - Creating a genealogical tree in Ahnenblatt	11	1.00	.000	1-1	4.00	.632	3-5	-3.022	.003
18 - Exporting gedcom files from Ahnenblatt	11	1.00	.000	1-1	3.27	.905	2-5	-2.971	.003
19 - Printing a genealogical tree	11	1.00	.000	1-1	2.73	1.348	1-5	-2.555	.011
20 - Importing gedcom files in mobile applications	11	1,00	,000	1-1	3,00	1,183	1-5	-2,825	,005
K - Computer competences	11	17.09	6.410	10-30	27.73	4.901	17-34	-2.943	.003
I - Internet competences	11	13.82	3.995	7-19	21.73	4.052	17-30	-2.936	.003
G - Digital genealogy competences	11	6.00	.000	6-6	20.55	3.560	13-26	-2.943	.003

Source: authors' own study.

Note: N= number of cases, M = mean, SD = standard deviation, Min-max = minimum-maximum range, Z = Z coefficient for Wilcoxon signed ranks test based on negative ranks, p = significance level.

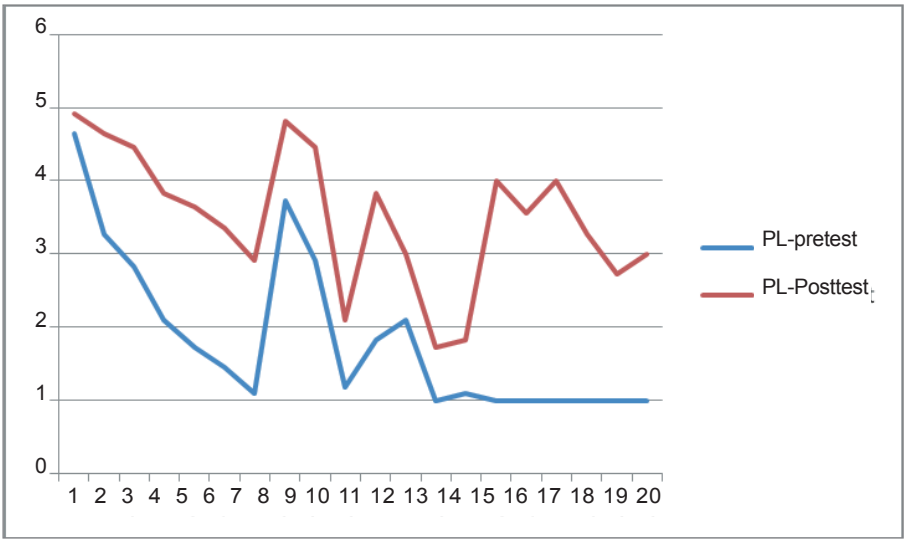


Figure 3. Illustration of competence growth for the Polish sample in individual subjects verified by pre- and posttest. Source: authors' own study.

Table 4

Differences between pr-test and post-test in the Italian study sample (N=36)

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
1 - Turning the computer on/off	15	3.07	1.831	1-5	4.47	.834	3-5	-2.36	.018
2 - Writing in MS Word	15	2.33	1.447	1-5	3.53	.743	3-5	-3.03	.002
3 - Copying and pasting text in MS Word	15	1.67	1.175	1-5	3.13	.640	2-5	-3.31	.001
4 - Copying and pasting pictures in MS Word	15	1.47	.990	1-4	2.80	.862	2-5	-3.40	.001
5 - Changing the size of photographs	15	1.87	1.125	1-4	2.73	.961	2-5	-2.97	.003
6 - Graphic adjustment, changing the color tone of photographs	15	1.67	1.047	1-4	2.73	.961	2-5	-3.56	.000
7 - Editing photographs in various programs	15	1.40	.737	1-3	2.60	.910	1-4	-3.49	.000
8 - Searching for information on Google	15	2.40	1.502	1-5	2.87	.915	2-5	-1.54	.124
9 - Starting an e-mail account	15	1.33	.617	1-3	2.33	.724	1-4	-3.22	.001
10 - Creating a website	15	1.00	.000	1-1	1.13	.516	1-3	-1.00	.317
11 - Searching genealogical databases on the internet	15	1.40	.910	1-4	2.47	.743	1-4	-2.96	.003
12 - Using Facebook	15	1.73	1.163	1-4	2.40	.632	1-3	-2.14	.032
13 - Starting a fan-page on Facebook	15	1.20	.561	1-3	2.40	.632	1-3	-3.28	.001
14 - Securing a computer from cyberattacks	15	1.20	.561	1-3	2.33	.724	1-3	-3.15	.002
15 - Writing text in Ahnenblatt	15	1.13	.516	1-3	2.47	.640	1-3	-3.27	.001
16 - Pasting pictures in Ahnenblatt	15	1.13	.516	1-3	2.33	.724	1-3	-3.14	.002

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
17 - Creating a genealogical tree in Ahnenblatt	15	1.13	.516	1-3	2.53	.516	2-3	-3.39	.001
18 - Exporting gedcom files from Ahnenblatt	15	1.20	.561	1-3	1.80	.775	1-3	-2.46	.014
19 - Printing a genealogical tree	15	1.20	.561	1-3	1.80	.676	1-3	-2.71	.007
20 - Importing gedcom files in mobile applications	15	1.20	.561	1-3	1.47	.640	1-3	-1.08	.279
K - Computer competences	15	13.47	6.812	7-28	22.00	4.293	18-33	-3.41	.001
I - Internet competences	15	10.27	4.008	7-21	15.93	3.634	9-22	-3.41	.001
G - Digital genealogy competences	15	7.00	3.140	6-18	12.40	3.135	7-18	-3.30	.001

Source: authors' own study.

Note: N= number of cases, M = mean, SD = standard deviation, Min-max = minimum-maximum range, Z = Z coefficient for Wilcoxon signed ranks test based on negative ranks, p = significance level.

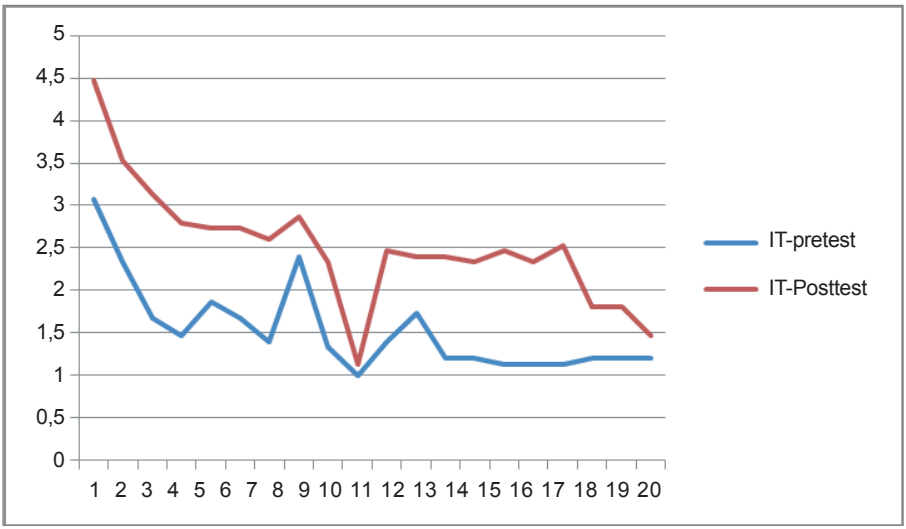


Figure 4. Illustration of competence gains for the Italian sample in single issues verified by pre- and posttest. Source: authors' own study.

Table 5

Differences between pre-test and post-test in Turkey survey sample (N=36)

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
1 - Turning the computer on/off	10	2.60	1.075	1-5	4.60	.699	3-5	-2.724	.006
2 - Writing in MS Word	10	1.80	.789	1-3	4.30	.483	4-5	-2.877	.004
3 - Copying and pasting text in MS Word	10	1.80	.789	1-3	4.40	.516	4-5	-2.859	.004
4 - Copying and pasting pictures in MS Word	10	1.70	1.160	1-4	4.30	.675	3-5	-2.848	.004
5 - Changing the size of photographs	10	1.70	.823	1-3	4.10	.738	3-5	-2.848	.004
6 - Graphic adjustment, changing the color tone of photographs	10	1.90	.738	1-3	4.20	.632	3-5	-2.970	.0003
7 - Editing photographs in various programs	10	1.80	.919	1-3	4.20	.919	3-5	-2.848	.004
8 - Searching for information on Google	10	2.40	.966	1-4	4.50	.850	3-5	-2.694	.007
9 - Starting an e-mail account	10	1.80	.632	1-3	4.10	.738	3-5	-2.859	.004
10 - Creating a website	10	1.30	.483	1-2	3.70	.675	2-4	-2.859	.004
11 - Searching genealogical databases on the internet	10	1.30	.483	1-2	4.00	.816	2-5	-2.871	.004
12 - Using Facebook	10	2.50	.972	1-4	4.60	.516	4-5	-2.850	.004
13 - Starting a fan page on Facebook	10	1.60	.699	1-3	4.50	.527	4-5	-2.850	.004
14 - Securing a computer from cyberattacks	10	1,50	,527	1-2	3,80	,919	2-5	-2,859	.004
15 - Writing text in Ahnenblatt	10	1.20	.422	1-2	3.90	.994	3-5	-2.877	.004
16 - Pasting pictures in Ahnenblatt	10	1.20	.422	1-2	3.70	.823	3-5	-2.877	.004
17 - Creating a genealogical tree in Ahnenblatt	10	1.40	.699	1-3	3.90	.568	3-5	-2.877	.004
18 - Exporting gedcom files from Ahnenblatt	10	1.40	.516	1-2	3.80	.789	3-5	-2.848	.004

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
19 - Printing a genealogical tree	10	1.0	.789	1-3	4.40	.699	3-5	-2.831	.005
20 - Importing gedcom files in mobile applications	10	1.40	.516	1-2	4.20	.632	3-5	-2.972	.003
K - Computer competences	10	13.30	4.900	8-23	30.10	3.035	26-35	-2.807	.005
I - Internet competences	10	12.40	2.011	10-17	29.20	3.521	21-33	-2.814	.005
G - Digital genealogy competences	10	8.40	2.171	6-13	23.90	2.885	19-28	-2.812	.005

Source: authors' own study.

Note: N= number of cases, M = mean, SD = standard deviation, Min-max = minimum-maximum range, Z = Z coefficient for Wilcoxon signed ranks test based on negative ranks, p = significance level.

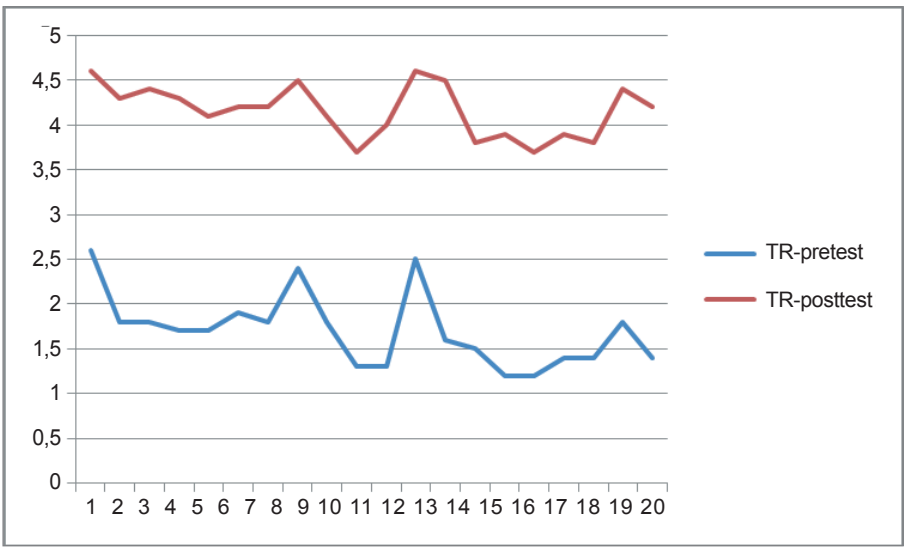


Figure 5. Illustration of competence gain for the Turkish sample in single issues verified by pre- and posttest. Source: authors' own study.

Based on the comparison of pre-tests in the surveyed groups, we can conclude that the level of verified competencies before entering the project was comparable, especially in the area of digital and genealogical competencies (Figure 6). Only in the group of Polish seniors surveyed can we observe higher indications in the area of switching on and off the computer (Q.1) and searching for information on Google (Q.8).

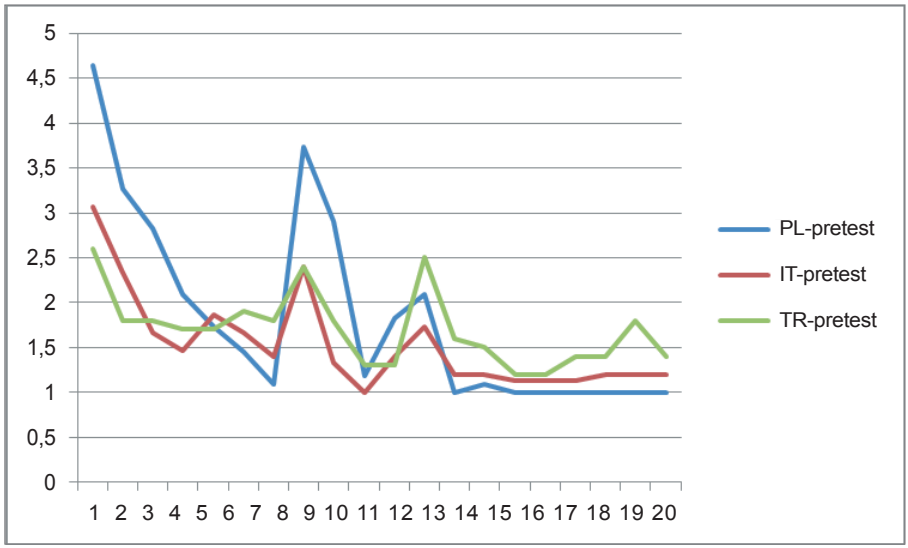


Figure 6. Competency level of seniors in all three partner countries studied by pre-test. Source: authors' own study.

Based on the comparison of the post-tests, a balanced score can be observed in the Turkish group, with simultaneous discrepancies in individual competencies among the Polish, and Italian, seniors surveyed (Figure 7).

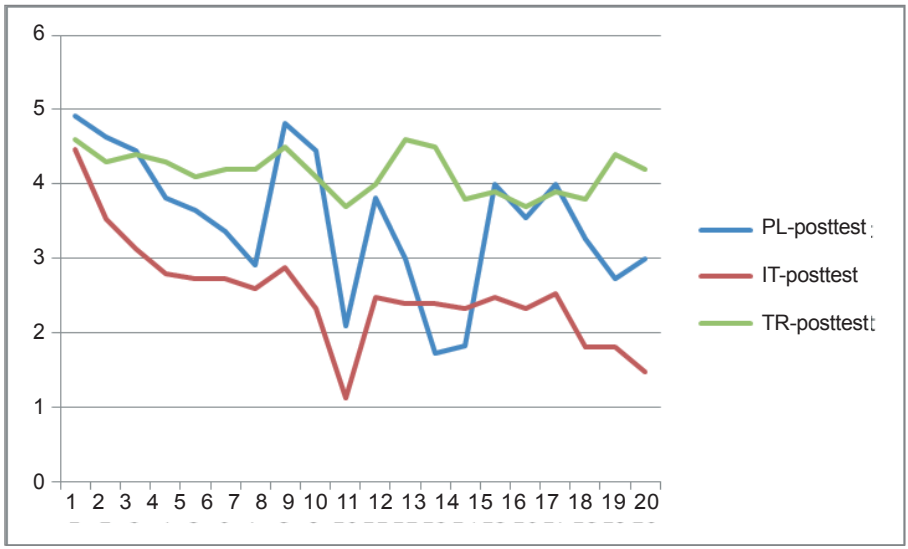


Figure 7. Competence level of seniors in all partner countries as measured by post-test. Source: authors' own study.

The graphs presented below allow for comparison of the growth of particular competencies in each of the three areas analyzed: computer (Figure 8), Internet (Figure 9), digital-genealogical (Figure 10). Moreover, the indications in particular countries were referred to the whole population of the surveyed.

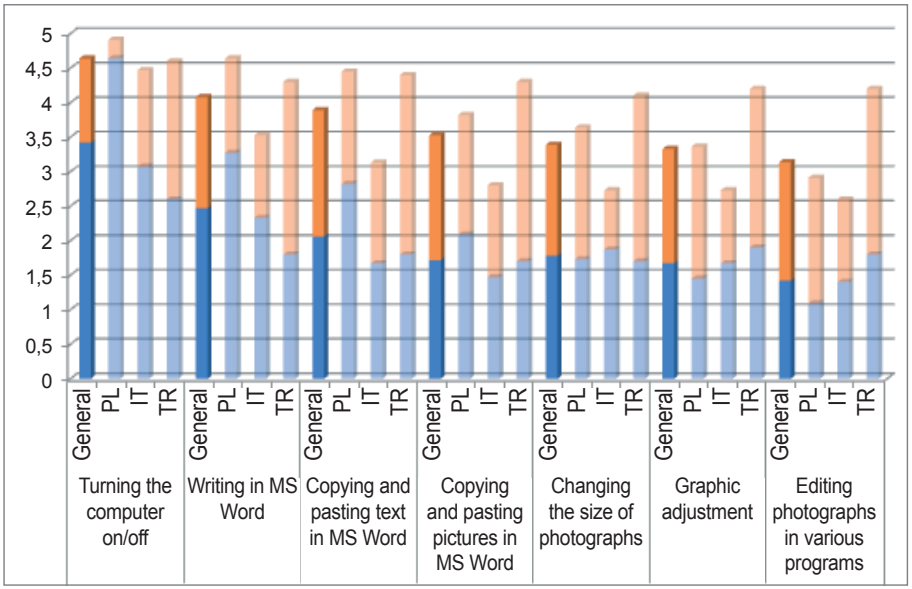


Figure 8. Comparative analysis in computer competencies. Source: authors' own study.

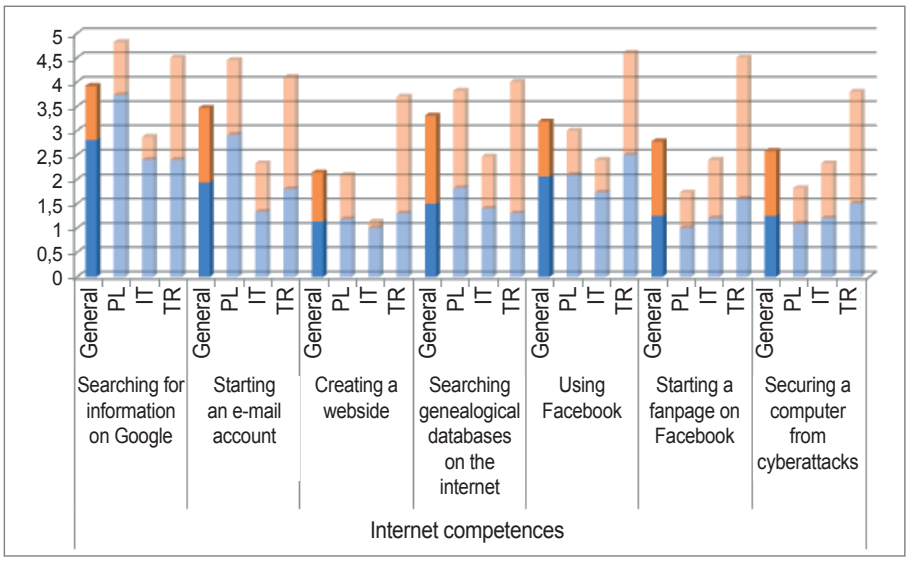


Figure 9. Comparative analysis in the Internet competencies. Source: authors' own study.

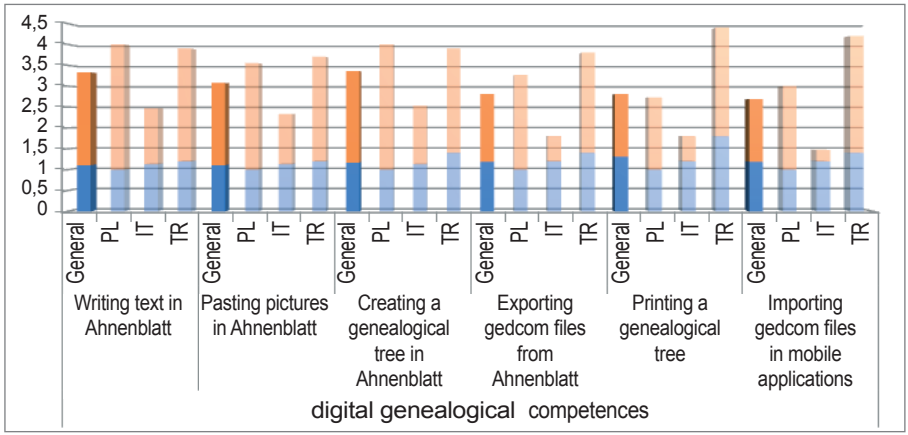


Figure 10. Comparative analysis in digital-genealogical competence. Source: authors' own study.

A comparison between men and women who took part in the *Learning Tree* project was added to the discussion on competence development as a result of participation in the project. It is worth noting that in both groups the results in all areas were statistically significant. Both women and men who took part in the project acquired new competences in each of the twenty indications analysed (Tables 6 and 7, Figure 11 and 12).

Table 6

Differences between pre-test and post-test in the entire sample of women included in the study (N=36)

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
1 - Turning the computer on/ off	25	3.68	1.464	1-5	4.76	.597	3-5	-3.090	.002
2 - Writing in MS Word	25	2.64	1.411	1-5	4.16	.746	3-5	-3.886	.000
3 - Copying and pasting text in MS Word	25	2.08	1.441	1-5	4.04	.935	2-5	-4.079	.000
4 - Copying and pasting pictures in MS Word	25	1.60	1.155	1-5	3.56	1.193	1-5	-4.241	.000
5 - Changing the size of photographs	25	1.84	1.143	1-5	3.44	1.083	1-5	-4.015	.000

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
6 - Graphic adjustment, changing the color tone of photographs	25	1.60	.913	1-4	3.40	1.118	1-5	-4.346	.000
7 - Editing photographs in various programs	25	1.28	.614	1-3	3.04	1.136	1-5	-4.262	.000
8 - Searching for information on Google	25	2.96	1.457	1-5	4.12	1.130	2-5	-3.194	.001
9 - Starting an e-mail account	25	2.00	1.258	1-5	3.56	1.227	1-5	-3.,968	.000
10 - Creating a website	25	1.04	.200	1-2	2.04	1.274	1-4	-2.980	.003
11 - Searching genealogical databases on the internet	25	1.52	.823	1-3	3.40	.913	2-5	-4.102	.000
12 - Using Facebook	25	1.92	1.187	1-5	3.24	1.393	1-5	-3.795	.000
13 - Starting a fanpage on Facebook	25	1.16	.374	1-2	2.68	1.492	1-5	-3.767	.000
14 - Securing a computer from cyberattacks	25	1.20	.408	1-2	2.48	1.295	1-5	-3.777	.000
15 - Writing text in Ahnenblatt	25	1.04	.200	1-2	3.36	1.186	1-5	-4.336	.000
16 - Pasting pictures in Ahnenblatt	25	1.00	.000	1-1	3.04	1,098	1-5	-4.260	.000
17 - Creating a genealogical tree in Ahnenblatt	25	1.08	.277	1-2	3.36	.907	2-5	-4.421	.000
18 - Exporting gedcom files from Ahnenblatt	25	1.08	.277	1-2	2.88	1.166	1-5	-4.058	.000
19 - Printing a genealogical tree	25	1.24	.523	1-3	2.76	1.480	1-5	-3.761	.000

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
20 - Importing gedcom files in mobile applications	25	1.20	.408	1-2	2.84	1.463	1-5	-3.775	.000
K - Computer competences	25	14.72	6.413	7-30	26.40	5.462	17-35	-4.375	.000
I - Internet competences	25	11.80	3.663	7-19	21.52	6.494	9-33	-4.376	.000
G - Digital genealogy competences	25	6.64	1.287	6-11	18.24	5.960	7-28	-4.376	.000

Source: authors' own study.

Note: N= number of cases, M = mean, SD = standard deviation, Min-max = minimum-maximum range, Z = Z coefficient for Wilcoxon signed ranks test based on negative ranks, p = significance level.

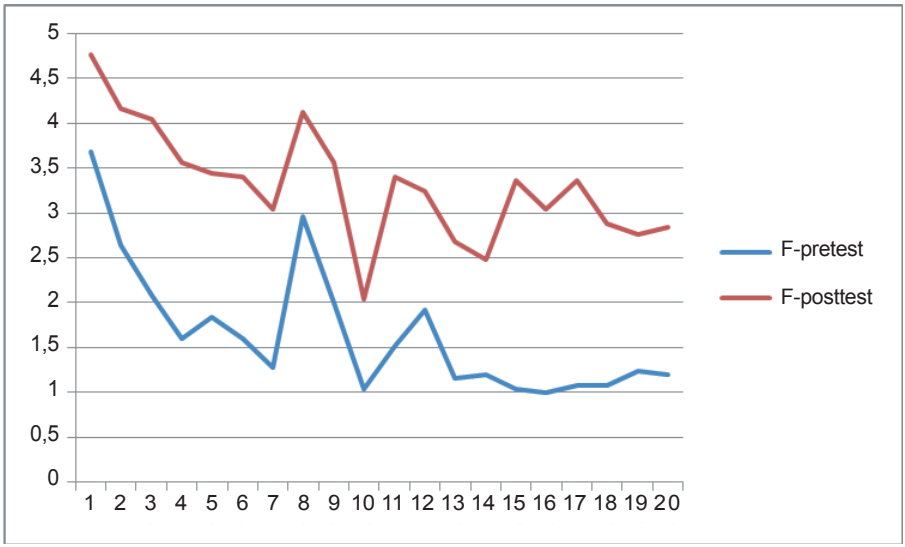


Figure 11. Increase of computer, Internet, and digital-genealogical competence in the studied group of women (F). Source: authors' own study.

Table 7

Differences between pre-test and post-test in the entire sample of men included in the study (N=36)

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
1 - Turning the computer on/off	11	2.82	1.722	1-5	4.36	.809	3-5	-2.209	.027

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
2 - Writing in MS Word	11	2.09	1.446	1-5	3.91	.831	3-5	-2.751	.006
3 - Copying and pasting text in MS Word	11	2.00	.894	1-3	3.55	.688	3-5	-2.754	.006
4 - Copying and pasting pictures in MS Word	11	2.00	1.183	1-4	3.45	.934	2-5	-2.724	.006
5 - Changing the size of photographs	11	1.64	.924	1-3	3.27	1.104	2-5	-2.848	.004
6 - Graphic adjustment, changing the color tone of photographs	11	1.82	.874	1-3	3.18	1.079	2-5	-2.879	.004
7 - Editing photographs in various programs	11	1.73	.905	1-3	3.36	1.120	2-5	-2.994	.003
8 - Searching for information on Google	11	2.45	1.293	1-5	3.45	1.214	2-5	-2.232	.026
9 - Starting an e-mail account	11	1.82	1.079	1-4	3.27	1.191	2-5	-2.859	.004
10 - Creating a website	11	1.36	.505	1-2	2.36	1.433	1-4	-2.121	.034
11 - Searching genealogical databases on the internet	11	1.45	.934	1-4	3.09	1.221	1-5	-2.694	.007
12 - Using Facebook	11	2.36	1.120	1-4	3.09	1.300	1-5	-1.786	.016
13 - Starting a fanpage on Facebook	11	1.45	.820	1-3	3.00	1.183	1-5	-2.701	.007
14 - Securing a computer from cyberattacks	11	1.36	.674	1-3	2.82	.982	1-4	-2.724	.006
15 - Writing text in Ahnenblatt	11	1.27	.647	1-3	3.27	.905	2-5	-2.911	.004
16 - Pasting pictures in Ahnenblatt	11	1.36	.674	1-3	3.18	1.168	1-5	-2.751	.006
17 - Creating a genealogical tree in Ahnenblatt	11	1.36	.809	1-3	3.36	.924	2-5	-2.842	.004

Variables	N	M_1	SD_1	Min-max$_1$	M_2	SD_2	Min-max$_2$	Z	p
18 - Exporting gedcom files from Ahnenblatt	11	1.45	.688	1-3	2.64	1.286	1-5	-2.414	.016
19 - Printing a genealogical tree	11	1.45	.820	1-3	2.91	1.300	1-5	-2.558	.011
20 - Importing gedcom files in mobile applications	11	1.18	.603	1-3	2.36	1.286	1-4	-1.982	.047
K - Computer competences	11	14.09	6.252	7-23	25.09	5.412	18-34	-2.940	.003
I - Internet competences	11	12.27	4.245	7-21	21.09	7.106	13-31	-2.938	.003
G - Digital genealogy competences	11	8.09	3,936	6-18	17.73	6.117	9-28	-2.848	.004

Source: authors' own study.

Note: N= number of cases, M = mean, SD = standard deviation, Min-max = minimum-maximum range, Z = Z coefficient for Wilcoxon signed ranks test based on negative ranks, p = significance level.

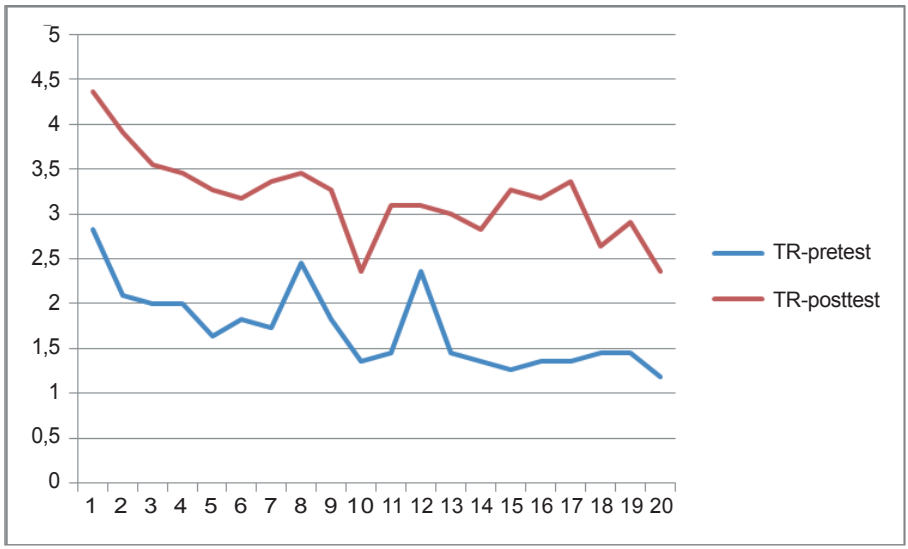


Figure 12. Increase of computer, Internet, and digital-genealogical competence in the studied group of men (M). Source: authors' own study.

Cross-group comparisons showed no significant differences between the pre-test and post-test scores of males and females as shown in Figure 13. The lack of gender differentiation in the area of learning new technologies is interesting as other studies in this area have indicated that gender deter-

mines the level of anxiety about learning new technologies. Men more often succumb to the phenomenon of neophobia than women, and consequently, they achieve weaker results in the area of competence gain (Jurczyk-Romanowska, Koszczyc, Jakubowska, *et.al.*, 2019). In the research conducted by the *Learning Tree* project, no such regularity was observed. However, the research also suggests that another consequence of the increase in neophobia among the male part of the population is that educational challenges in this area are less frequent. There were 25 females and 11 males in the study, which could support this thesis.

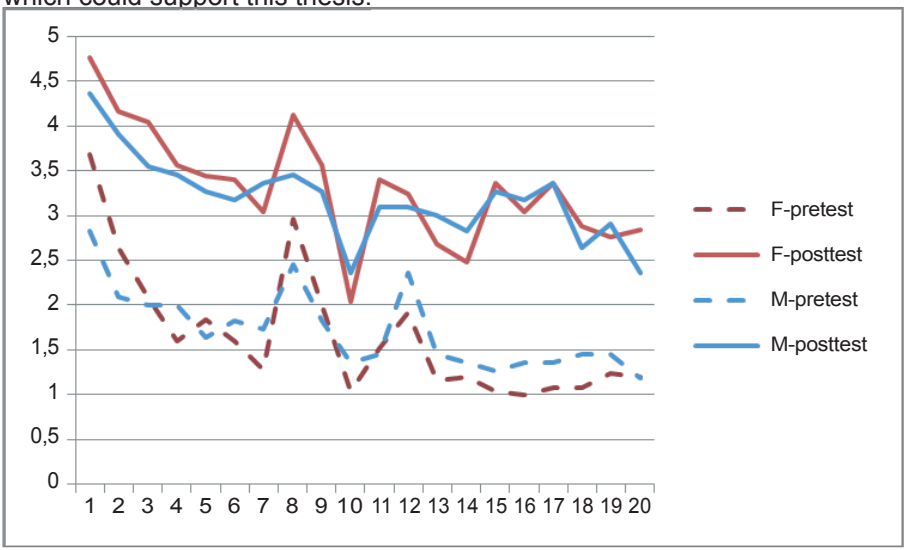


Figure 13. Comparing competence gains in the group of men and women. Source: authors' own study.

At the conclusion of the conducted analyses, the correlation matrix between the necessary groups of studied competencies was checked, resulting in the indication of the Internet as a mediator in the education of the elderly. Analyzing the correlation matrix between the growth of different competencies, a mediation of the Internet competencies increases between the computer competencies increase and digital genealogical competencies increase was observed (see Table 8 and Picture 2). On this basis, it can be concluded that the growth of Internet competencies is of key importance both in the education of seniors in the area of computer competencies and in the area of digital genealogy. On the other hand, the analysis of partial correlation of computer competencies and digital genealogy does not show any statistically significant dependence. It can be assumed that omitting Internet-related content from the course program would not bring the expected results in the form

of an increase in the other two groups of competencies.

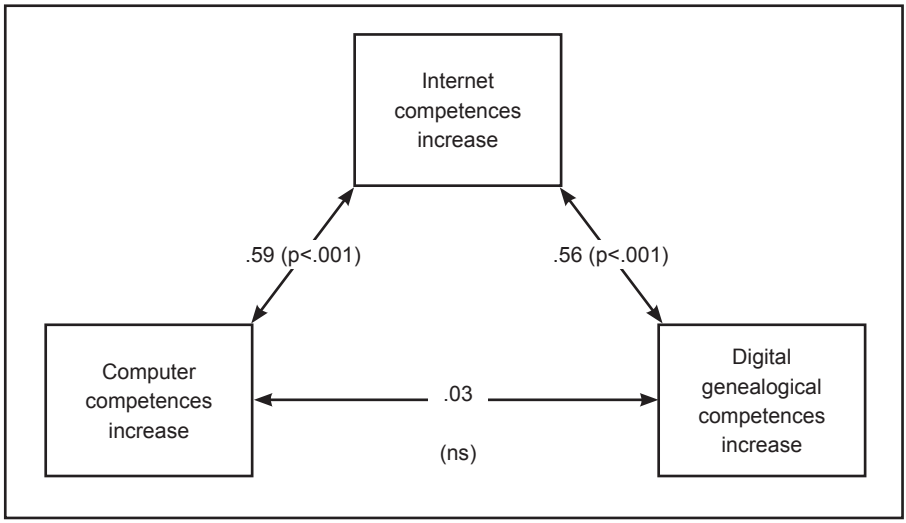
Table 8

Matrix of correlation and partial correlations between the increase of skills in computer use, Internet use and digital genealogy

Variables	Internet	Genealogy
Computer	.74* (.59*)	.56* (.03 ns)
Internet		.73* (.56*)

Source: authors' own study.

Note: Computer = increase in computer competence, Internet -= increase in Internet competence, Genealogy = increase in digital genealogical competence; * correlation significance p <0.001; ns = correlations not significant (p> 0.05). In parentheses, partial correlation between



two variables while controlling for the third variable.

Picture 2. Mediation of Internet competences increase in relation between computer competences increase and digital genealogical competences increase (revealed by partial correlations). Source: authors' own study.

This conclusion is consistent with the historical development of amateur genealogy, which was clearly intensified in all partner countries at the same time as the expansion of the Internet and the entry into the era of the information society. Moreover, the dissemination of digitalized genealogical databases, the possibility of presenting the results of one's individual genealogical searches on the Internet, including family history and family trees, as well as the possibility of obtaining help through genealogical Internet forums and social media contribute both to the development of computer competences and digital genealogy. This assumption can also be found

in the statements of the *Learning Tree* project participants in a focused interview[17]. The presented dependencies are causal in nature and require research on a larger population, but nevertheless, they determine further directions of research.

Conclusion

In the conducted research, we used interest in the form of seniors' genealogical passion as a motivating factor for learning. Interest is understood as a phenomenon involving positive feelings and attention, resulting from human interaction with specific objects (Renninger, & Hidi, 2011; Schunk, Pintrich, & Meece, 2008). In theory, we can distinguish situational attention - referring to a transient attraction specific to a situation (Krapp, Hidi, & Renninger, 1992). The second type is individual interest, which is stable in nature and refers to a certain set of characteristics, type of information, often aroused by a specific environment (Krapp, 1999). Individual interest was used in this study to explore the use of seniors' interest in genealogy as a motivator for learning new technologies. It consists of three components: positive feelings, knowledge, and values (Hidi, Renninger, 2006). Seniors entering the project were required to demonstrate analogical genealogical competency, which, according to the theory cited above, manifested itself in a positive attitude toward genealogy, knowledge of the subject, and the value to the seniors of searching for their roots and presenting their family history. After fulfilling the prerequisite interest in genealogy, the seniors took a *Learning Tree* course where they gained competencies in three areas: computer, Internet, and digital genealogy. During the course, competency gains in all three areas included in the study were examined using a pre- and post-test. As a result of this teaching and research model, statistically significant competence gains were found in each of the areas covered as well as in the vast majority of topics taught in the course.

The results achieved correspond with similar research conducted on interests as a factor supporting the learning process. Comparison of these scientific inquiries may determine further research directions.

A study by Osly Usman and Shafila Tasya examined the influence of factors such as e-learning, learning styles, and interests in learners' motivation.

[17] A detailed description of the research carried out within the *Learning Tree* project will be presented in the book *Learning Tree - Preventing digital exclusion of seniors* that is currently being prepared. The statistical analysis presented above was prepared by E. Jurczyk-Romanowska and P. Kwiatkowski.

It was shown that motivation is significantly influenced by interests. In addition, interests are influenced by the use of online education (Usman, Tasya, 2020). In the research conducted in the *Learning Tree* project, conducting classes using the Internet, became a factor in increasing computer and digital-genealogical competence. This may be a future indication for designing effective classes using the Internet. Whereas other research has shown correlations between environmental conditions and an interest in learning, which may also be relevant when designing courses for a group of seniors who are demanding in this regard. Friendly learning conditions have a positive effect on increased interest (Pargito, 2019). Motivation research conducted in China on a younger age group shows that flow (understood as a state of interest) is a statistically significant mediator between interest in learning and creativity (Dan, 2020/2021). Maintaining a state of interest throughout the course, therefore, will positively affect both the interest in the learning process itself and the pursuit of independent creative solutions, as was readily observed in the case of the seniors' family tree building.

In conditions where there is individual interest in a particular subject, it is possible to effectively raise the competences established. In the case of the *Learning Tree* project these were computer, Internet, and digital-genealogical competences. The research may become an inspiration to find other areas of interest for older people, which will effectively motivate them to undertake IT education in a broad meaning of the word.

Chapter VII

PEOPLE WHO ARE GOOD BY NATURE, DESIRE KNOWLEDGE[18]. SENIORS' EXPERIENCES WITH THE LEARNING TREE PROJECT

Introduction

The *Learning Tree* project has proved to be an effective tool for the social activation of older people. It was assumed that the implementation of this project would improve the process of adult education, and also improve the quality of life of seniors. The project meetings were conducted in a way that enabled the participants to acquire knowledge, improve their skills, and constructively use their free time.

While analyzing the effects of the work, seniors were eager to share their experiences. They talked about both the positive sides of the course and the difficulties they had to face. The experience gained is a valuable source of knowledge, not only for the participants but also for the implementers, educators, and all those interested in social project management.

Based on the statements of the participants and trainers of the *Learning Tree* project, a list of guidelines that can be helpful in the field of formal and non-formal education of adults was constructed.

The benefits of participating in the project

Seniors involved in the *Learning Tree* project listed several benefits gained through the activities. The statements of the participants indicate a high level

[18] Leonardo da Vinci (n.d.). Source: https://quotepark.com/pl/cytaty/367513-arystoteles-wszyscy-ludzie-z-natury-pragna-wiedzy/.

of satisfaction with the project meetings, especially in the area of acquired knowledge and making new acquaintances. Interlocutors also referred to the possibility of recreating the history of one's own family and the positive atmosphere accompanying the work.

Personal development, acquisition of new skills. A problem of modern seniors may be the clash of traditional values and lifestyles with civilization challenges and scientific and technical development (Pikuła, 2014). Therefore, one of the basic assumptions of the *Learning Tree* project was to improve the ITC skills. Analysing the statements obtained during focus interviews, we can see that this goal has been achieved. Participants admit that project meetings enabled them to develop their technical skills. They also indicate an improvement in the ability to search for interesting content on the Internet. The statements of two interviewees from Turkey can be quoted as confirmation: "I got the advantage of using and improving my skills at ITC usage" (BA, 56, TR) and "I completed some skills with ITC usage, especially surfing and searching on the net" (TK, 55, TR).

Among the participants, some people had never used (or used little) computers and/or mobile phones before. Speaking about the benefits gained in the project, this group of recipients pointed to the acquisition of basic skills, such as creating a new folder, using a computer mouse, creating and saving a text document. The following statement can be considered a perfect example (GM, 62, IT):

> I waited for the course for a long time 'cause I didn't know what a computer was, or even the keyboard!!!! So, I started to use the keyboard, and how to write a document, and how to use a mouse and the computer and I felt very good in the classes!

One of the respondents (SA, 69, IT) confirmed that the course enabled him to understand how to use a mobile phone. During the classes he learned how to record a short video, save data on the phone, and manage the memory of the device. Although the participant described himself as "a man of the previous century", he understood that age is not an obstacle to acquiring new competencies and skills.

Seniors admitted that they not only gained basic knowledge but also had to deal with more advanced activities, such as online shopping, graphic processing of photos, or construction of family trees using a computer. Numerous statements show that the participants' knowledge before starting the course was diversified. Some of the groups were free to use new technologies, while others only acquired basic skills. As it turned out, the cycle of train-

ing conducted within the *Learning Tree* project met everyone's expectations, not depending on the previous preparation.

The participants positively assessed their progress. They said they felt happy to learn something new. Importantly, some admitted that they got rid of the fear of using computers: "I got rid of the fear of using the PC" (MC, 71, TR).

The project also involved people who did not have any difficulties. Nevertheless, they admitted that the activities were interesting and provided a lot of fun.

It is worth mentioning that many participants found the course to be very useful. Interlocutors unanimously stated that the knowledge of computers and mobile phones nowadays is the standard. They repeatedly mentioned that they were not satisfied with the level of knowledge they possessed before starting the classes. When they finished, they noticed that they were able to efficiently use the acquired skills and willingly practice the knowledge gained during the training. This is important because the willingness to undertake lifelong education is a determinant of civilizational development, and, above all, of the development of man and his society (Wiatrowski, 2005).

Establishing interpersonal relations, strengthening social bonds. When organizing educational activities for older people, a wide range of different changes in late adulthood should be taken into account. An important aspect is the changes in social functioning, which are reflected, among other things, in less frequent social networking. The solution to this problem may be to organize group classes, which "apart from increasing knowledge and skills, also serve the function of social activation" (Sienkiewicz-Wilowska, 2013, p. 35). Similar conclusions were reached by the project implementers, who decided to organize group activities. The participants to the course highly valued these forms of meetings. They paid attention to the mobilization of greater efforts, and also appreciated the possibility of cooperation and making new acquaintances. They admitted that they enjoyed spending afternoons together. They had the opportunity to discuss and share their interests. For example, one can refer to AT, 65, PL, who stated that she was happy to have met the other participants. Some of them noticed that the joint meetings may even be a space for building a friendship that will continue in the future. Importantly, there was a suggestion for organizing meetings with new friends through a group on WhatsApp.

Several seniors, when describing the benefits of the project, mentioned socialization*, e.g.,* "The most important thing was the socialization among participants and tutors" (SA, 69, IT); "It was a way of socializing and of course learning the computer" (TF, 70, IT). This concept is defined as a multilateral

learning process through which a person becomes a social being and a member of a particular society and culture (Malewska, 1973). It can, therefore, be assumed that the participants when talking about socialization, referred to the aspect of integration and deepening interpersonal bonds.

The target groups of the project were adults aged 50+. However, the classes and workshops were conducted by younger people and students who are familiar with new technologies daily. Intergenerational cooperation served, among other things, to shape mutual understanding between the younger and older generations, to show mutual benefits, and to help solve technical problems. Beata Tokarz-Kamińska and Łucja Krzyżanowka (2012), point to the numerous benefits that intergenerational brings in the implementation of social projects. The authors distinguish three forms of intergenerational relations:

— *intergenerational one-way relations,* which can be reduced to various activities, in which seniors talk about their experiences and young people listen and describe. Such a relationship aims to educate and pass on tradition and history;
— *bi-directional intergenerationally* - we deal with it when younger and older generations do something together and spend time together. Projects aimed at intergenerational bi-directionality can integrate people of different ages. Thanks to this relationship, representatives of different generations get to know each other, learn from each other, and overcome mutual stereotypes;
— *traditional intergenerational* is a natural form of intergenerational relationship based on the traditional roles of the grandmother and grandfather. Thanks to this, seniors can feel needed, while giving warmth, support, and interest to their children and grandchildren.

The cooperation in the *Learning Tree* project was based primarily on the bi-directional intergenerational approach. Many senior citizens appreciated this form of work and the relationship between the participants and the educators.

It is also worth mentioning the international cooperation, which is a pillar of the implementation of this project. The classes enabled the participants to share their stories and listen to the stories of others, but also to get to know other cultures.

Reconstructing family history and building one's own identity. The *Learning Tree* project not only improved ITC skills but also used the skills gained in the process of researching and recreating the history of one's own family. The activities proved to be very valuable for the participants

who, with a great commitment, tried to get to their own roots. Some people admitted that they had never previously had the opportunity to analyse family documentation and photos. It was only when they took part in the project that they were encouraged to search private archives, and the topics covered in the classroom inspired them to create a family tree. Such a conclusion is justified by the statement of one of the participants (SRE, 60, TR):

> I was aware of my elders that I had never heard of or seen a photo of. I even helped my family members to know about the elderly people that no one was ever aware of. My father and my mother also became aware of some people from our family after creating our family tree.

Seniors admitted that, with great interest, they recreated the fate of their ancestors. In building family trees, they tried to find answers to questions about their origin. During focus interviews, there were statements indicating that several interlocutors only got to know the essence of genealogy and the sense of searching for their own identity during the classes: "I expected to know my ancestors through the genealogical tree but I now understood how to make a genealogical research and what a genealogical tree is" (GB, 61, IT).

A huge benefit of participating in the project was the desire to create a memory for posterity, as mentioned *e.g.*, by HB, 67, PL and DDW, 70, PL. According to the interviewees, they would like to share their research with their children and grandchildren because, as they have admitted, they want to keep the memory of previous generations alive and respect their own history.

Friendly atmosphere during classes. An aspect often appreciated by seniors turned out to be the atmosphere prevailing during the classes. Many participants admitted that they felt good at project meetings, both with peers and younger educators. Seniors took care of the well-being of others, willingly organized attractive coffee breaks, and planned the time between the exercises in an interesting way. The atmosphere diversified the course of the workshops and was conducive to gaining new knowledge and exchanging opinions. Seniors often compared the activities to the period of their own childhood and schooling, which they recall with pleasure.

The interviewees also noticed a connection between the positive atmosphere during the classes and the involvement of the participants, who were happy to carry out the tasks and take part in the discussions. MA, 61, IT; TF, 70, IT, and GB, 61, IT addressed this topic: "The level of interest changed in positive especially after the first class when we saw the positive environment and friendly approach of the tutors".

Another mentioned advantage of the project was the form of work, which was not based on competition and competition. Thanks to this, the participants had no problem asking for advice and support. They emphasized that, due to their age and previous skills, they were often unable to keep up with the group. Nevertheless, they did not feel embarrassed because they knew that the classes aimed to develop and increase self-esteem, and not a material prize (mentioned by a participant from Italy - TF, 70, IT).

Older people also drew attention to the active attitude of younger educators, who willingly helped and tried to solve every problem they encountered. The value of the classes also reflected the flexibility of the trainers, who respected the individual needs of each of the participants. This, in turn, contributed to an increase in the sense of security and self-confidence. Interlocutors admitted that they had many fears, which ultimately turned out to be unfounded.

Additional benefits of the project. An additional advantage of the project can also be considered as the organization of free time for seniors. It is common knowledge that older people, especially those retired, have time at their disposal which they are often unable to manage properly. In recent years, it can be observed that many senior citizens have been trying to focus their capabilities on activities conducive to development and satisfaction (Miszczak, 2010). One of the forms is participation in various courses and training. Thanks to the *Learning Tree* project activities, seniors have had the opportunity to further develop and actively participate in social life. To a large extent, it was also a motivation to take care of the impeccable image during the meetings.

The trainers drew attention to the great motivation of the senior citizens. It was noticed that the most difficult stage of the work was to encourage participation. When this difficulty was overcome, working with people aged 50+ was extremely satisfying. The participants were eager to undertake new tasks and prepared ambitiously for their implementation. Seniors themselves made requests for additional activities. They made a conscious decision to continue education and meticulously implemented it. What is more, they often expressed their satisfaction with this way of spending their free time.

The improvement of group work skills can also be considered as a benefit of the project. The participants followed certain rules, expressed their interests to the interlocutors, and treated each other with respect. They willingly cooperated and nurtured the good atmosphere.

By making an overall assessment of the benefits of the *Learning Tree* project, one can observe that the level of satisfaction of the participants was

high. Seniors spoke positively about the activities - both in the area of knowledge gained and in the area of knowledge and acquaintances. Participants highly appreciated the atmosphere during the meetings and the degree of involvement and interest in each stage of the training. It is worth noting that the intergenerational cooperation between the attendees was excellent, which encouraged the members to further develop and acquire new skills.

Difficulties encountered during the project implementation

Based on the focus interviews conducted after the *Learning Tree* project, two categories of difficulties were identified. These are the difficulties at the organizational and individual levels.

Difficulties arising at the organizational level

Too little exercise and time. During the organizational-level implementation of the project, class participants expected more exercises to consolidate new skills.This is indicated by a statement made by one of the participants: “I did not have time for such a consolidation of this and it is my feeling. But I don’t speak, these aren’t pretensions, only I just need to record more time and such a longer exercise, repetition. Thank you” (SW, 71, PL).

Too little material for exercises after classes. Another issue that was raised by the participants of the classes was that there were too few dedicated teaching aids for them. Seniors wanted to leave after each meeting with class notes containing the content they discussed - if only as a brief summary. Participants reported that they received the materials only after a part of the classes, and would postulate that they are dedicated to them after all of them. This would be to improve the skills they have learned and possibly repeat the content to themselves at home.

***Too varied level of skills of participants*.** The *Learning Tree* project participants also pointed out the different levels of technical preparation of the individual participants. For most of them, this was not relevant. However, it can be assumed that among those who have low levels of technical and computer skills, this may have caused frustration and reluctance to continue working. Compared to people with higher digital competence, they may have felt anger, discouragement, and regret, which does not positively affect the

motivation to learn (Corey, 2004). Besides, these people require a great deal of input from the educators in helping them. This may cause dissatisfaction among participants with higher levels of digital competence - they may feel that educators are not interested in them and their progress because they are spending time with people who are learning computer skills from scratch. For example, one of the participants learned how to create folders during the first classes, which for other participants in the project was a skill acquired much earlier.

> So, I couldn't do something that is very simple and easy. I couldn't put it in folders. Did I learn here at the beginning of the first day to create a folder, and to create a subfolder, for example, right? So, you can, you can, you can, like, first have a room, then a wardrobe, in a wardrobe a shelf, on a shelf a box, right? (AD, 79, PL).

Nevertheless, the participants clearly indicate that during the course their computer skills and manual abilities have been improved (*e.g.*, a statement by an AB, 72, TR):

> I'm happy with the timing of courses, I had some disadvantages on my manual efficiency but in the I realized that I had improved myself. Having courses 2 hours a week was also ok. And I had new friends during the activities (AB, 72, TR).

Difficulties related to frequent changes in places, rooms, computers, etc. The participants (*e.g.*, AD, 79, PL; AT, 65, PL, and UG, 70, PL) also pointed to changes in the places where the activities took place. They pointed out the difficulties in getting to particular venues. Having to spend time and attention looking for a "new" place can make participants less focused during the lesson (Kahneman, 1973). This is indicated by a statement made by one of the participants: "We spent most of our time changing places, looking for this "humorous college", because nobody knew where it was. So, we laughed that we were looking for the Sorbonne, which is not on the map of Wrocław*..."* (BZ, 70, PL). It follows that the participants approached the matter with a sense of humor, but for some people, this could have been a real problem. It is worth taking care of finding a suitable place where classes could take place throughout the course and where parking spaces are available for participants.

Schedules of classes. Also, the date was indicated as a hindrance during the classes. Seniors participating in the project are mostly people who get involved in different activities, such as volunteering, participation in other

workshops, *etc*. The project will be carried out in the same way as the other senior volunteers. It is difficult to organize activities on such days and hours that are suitable for everyone. This was mentioned by BZ, 70, PL, and MAF, 60, IT: “The only issue I had was to not have an available day to attend the course. But fortunately the days Thursday and Friday are ok for me. For other things I’m very satisfied of this course I can easily follow the lessons”.

In addition, sometimes the hours of classes were not appropriate because of the high temperature[19]. It is worth ensuring that rooms are air-conditioned in summer and, heated in winter. This increases the comfort of work and makes learning more enjoyable and effective.

***Too little time for classes*.** Seniors also commented that individual classes were too short and that the whole course should have been longer - the amount of material and information gained was very large. People involved in the project expected the classes to be longer so they would have more time to absorb new information and practice them. This was mentioned by BZ, 70, PL:

> This course was so short and so full of information, more and more new things to learn, that there were not enough hours to practice, all the more so because, as we mentioned before, we wasted some time [searching for a place to practice - editorial note], didn’t we? So, each of us will certainly be practicing.

Efficient equipment. A difficulty that appeared at the organizational level was also that of faulty equipment. During the first meeting in the Polish group the Internet did not work, which caused frustration - one of the participants even left the class (BZ, 70, PL). It is worth noting that the failure may happen at different stages of classes and the organizers have no influence on it. It is difficult to predict various types of random events and the difficulties resulting from them. However, it is important that educators must be able to cope with such unpredictable circumstances and have a “plan B”.

***The atmosphere in the classroom*.** The atmosphere in the classroom is another important issue raised by the participants in the context of the difficulties. For seniors, a very important issue, apart from the content, is the atmosphere (Kilian, 2015). The specific situation in which young people teach older people makes it worthwhile to ensure that the atmosphere during

[19] This remark was made by participants in workshops in Italy.

the classes is positive, and the leading people are kind and calm. One of the statements will be quoted:

> I was really scared of people because everyone had some kind of resentment (...), but everyone, it was, it was hot, the leading ladies were upset, there was no one here to silence anyone, how to apologize, that it was a computer, that it wasn't there, that you came here, that he didn't deal with these computers, that he actually knew how to do it, that he didn't have the technical skills, that he went, that sympathizer, that he didn't have the Internet. It was terrifying, I think to myself: I can't stand such a tension that everyone has a grudge against everything [laughs], that was the feeling. And now I thank you very much for being such nice grandmothers [laughs] (AT, 65, PL).

Difficulties arising at an individual level

Fear of using a computer and other equipment. For the first time, the participants had to deal with a computer in adulthood, and in some cases - only over 50 years of age. Therefore, among the participants of the project, there was a fear of "technical novelties", fear that they would not be able to cope with the use of computers or individual programs. Some participants directly pointed out that they were afraid of computers, especially that they might break something due to improper handling. Often, after overcoming their fear and getting used to the hardware, it turned out that device operation gave them pleasure. And creating something new and using it gave satisfaction and joy. Here is a statement:

> I have already said before, in the previous speech I mentioned that I am afraid of the computer, but then it turns out, and once again a nice disappointment, that it was not so terrible, that you can edit a photograph, right? That you can make a video and that it's quite simple (SW, 71, PL).

> Participants who have no (longer) fears about using a computer indicate that their insufficient knowledge of how to use computer programs limits their possibilities (AD, 79, PL).

Expecting educators to help every participant. The educators during the classes were prepared for the fact that the participants would need help and that some issues would need additional clarification. The diversity of the group in terms of the level of computer literacy has led to a large proportion of the attention of the educators during the classes being paid

to the few people who needed the most support. At the same time, the absorbed educators could not help other people, which made them feel less important. During the focus interview, some people revealed that they were dissatisfied that they were not getting enough support. Interestingly, these were people who worked independently during the classes and did well with the tasks, so according to the educators, they did not need help. Nevertheless, it appeared that these seniors also wanted support. This was mentioned by the following persons:AT, 65, PL; BZ, 70, PL, AD, 79, PL from Poland. An example is statement of MS, 86, IT: “More support and presence for the participant that have to acquire basic notions that start from how to open a computer etc., so I need a person that help me and follow me more constantly and individually”.

Fear of giving dates and other sensitive data. As the last of the difficulties encountered by the participants during the project, the fear of divulging their sensitive data was mentioned. Some activities required the provision of data that some participants were afraid to disclose. Seniors have been warned for years about fraudsters waiting for their assets and other goods. In this regard they are very cautious and reluctant to share their sensitive data. This has revealed a lack of competence of seniors in cyber-security. This has been pointed out by GB, 61, IT and VM, 70, IT, among others.

Conclusion. Instructions for educators

The first suggestion proposed by the trainees **was to recruit candidates with regard to age and skills**. The age range turned out to be large, as well as the breadth of knowledge. The addressees of the project, who had not previously dealt with new technologies, felt some fears that they would not be able to carry out tasks at a level similar to that of the other members of the course. Some said they felt uncomfortable not being able to keep up with their colleagues. The difficulty resulted mainly from the lack of familiarity with computer equipment (using a computer mouse, keyboard, *etc*.). To a large extent, this was related to the age of the participants - the older ones had more difficulty in understanding the tasks and performing them. One of the interviewees (MC, 71, TR) suggested that work in pairs should be organized according to age. In this way, seniors could solve the problems together.

The organization of group activities can be taken as another guide-line for educators. Interlocutors positively assessed this form of meeting.

They stated that classes conducted in a wider group have greater potential, both social and educational. Teachers then have the opportunity to propose different methods and techniques, and each of the participants can choose the appropriate style of work, adequate to their own preferences. However, it is worth making sure that the groups are not too big, as the activity of individual course members decreases in a larger group and the interest in the subject decreases (Gibson, Burnside, 2005).

Group classes also make it possible to discuss one's own doubts with other participants, which contributes to strengthening social bonds, while relieving the strain on trainers. One of the participants noticed that the motivation to work increases in the group. Looking at the achievements of colleagues, there is a willingness to overcome one's own weaknesses and constantly raise the bar. However, it is important to apply the so-called individualization in the group. Seniors admitted that despite the high potential of group work, they would not like to feel anonymous or ignored by educators. Therefore, a proposal was made to flexibly adapt the curriculum to the individual needs of the participants. This guidance can be combined with literature. Alina Gil and Pilar Escuder Mollon (2014) also emphasize that the key element of older people's education is to adapt forms of learning to the level of activity and motivation of individual participants.

Seniors unanimously **agreed that as many young educators as possible should be involved** in the implementation of the projects, who will be able to provide support on an ongoing basis. Thanks to this, the participants will be able to consult the encountered problems at any time. It is important that people who use computers and mobile phones on a daily basis should take part in the projects. This would definitely improve the quality of the classes. Intergenerational cooperation may contribute to shaping positive relations between the generations and go beyond stereotypes and prevent social exclusion. The benefits of this form of work have also been noticed in other projects, such as Seniors in Action (Tokarz-Kamińska, Krzyżanowska, 2012) and the Intergenerational Academy of Public Dialogue in Kielce and Tarnów (Pestka Foundation, 2014-2020).

As a guideline, it was also suggested that **technical classes should be conducted more often**. As mentioned earlier, the level of knowledge and skills before the course was diverse. Technical classes can be used to equalize the level of the group and to fill in the missing information. It is worth noting that such classes are better remembered and more strongly involve the group. Understanding how to use a smartphone would be easier if educators made a technical demonstration (Kilian, 2014). These are important skills that often form the basis of modern life.

An important category indicated by seniors is **conducting classes in the morning**. Some claimed that working in the afternoon is inefficient. One of the participants admitted that during the classes she felt very tired, which had an impact not only on the quality of the tasks performed but also on her mood. Moreover, in the evenings the students have more responsibilities and often have to forgo other activities in favour of training. Such a proposal may also result from the way of life led by older people (getting up early in the morning, fatigue in the evening).

During the focus interview, the seniors involved in the *Learning Tree* project proposed **the creation of a "difficulty catalogue".** The idea was born from asking the same questions frequently. The participants noticed that certain activities were more difficult for them and therefore needed more support from the educators. Listing the most common problems could make it easier for seniors to work and relieve the strain on trainers. On the basis of the interviews, it can be argued that the difficulties encountered are similar among participants from all Member States and that the handbook could, therefore, be of a universal nature.

In order to facilitate work, it would be useful to **use a contracting method** whereby both participants and educators exchange views on their expectations and on the course of their activities. Some "gentlemen's agreements" between the two parties may increase the efficiency of the activities. Such a form may prove to be an effective way of motivating participants to express regular opinions about their participation in the project. During the first meetings, it is necessary to familiarize all participants with clearly defined rules of work and rules of functioning in the group (Kiljan, 2014).

It is worth noting that participation in classes for seniors stems not only from a desire to gain knowledge but also **an opportunity to take care of their image**. Older people, involved in the project, paid a lot of attention to their appearance. They took great care of every detail that affected their image. One could observe that the participants required the same from the trainers. They felt good when the educators were dressed neatly and elegantly. Similar conclusions were drawn from a study on the participation of seniors in cultural events. The research was conducted in 2012 among adults (50+) living in 35 Polish towns and cities. The members of the research from a few years ago, like the senior citizens of the *Learning Tree* project, stressed that the atmosphere of cultural events was a very important aspect for them - their festive character and the need to prepare beforehand, for example in terms of having an elegant appearance. In this way, many senior citizens emphasize the importance of "breaking away" from the routine of everyday life (Sójka *et al*., 2012).

Another postulate expressed during focus interviews with seniors was that the educational activities should be more time **to practice new skills thoroughly**.

It also proves to be important that new skills are reinforced with more frequent practice during classes. This is important because learning requires a lot of repetition, and this is even more necessary for older people due to their reduced cognitive abilities. It is also important in the education of seniors that independent learning follows Kolb's cycle - starting from experience, through reflection, generalization, and ultimately application (Kolb, 1984).

It also follows from the statements of the workshop participants that it would be worthwhile **to introduce them to the topics that will be discussed during the classes** (Kilian, 2015). It turned out that seniors had a need for this information. This is related to having a sense of security, which will provide them with knowledge about what will be realized during the next classes.

For effective learning, it is undoubtedly important to have **the right motivation**. For older people, the usefulness of the knowledge they are able to acquire in class is particularly important when learning with new technologies (Knowles *et al.* 2009). In order to inspire motivation to learn among workshop participants, according to the theory of physical, psychological, and social ageing (Halicki, 2006), it is necessary to, first of all, satisfy the necessary needs of participants. Educators have no influence on the physical and mental wellbeing of the participants, their concentration on a given day, *etc*. They have no influence on the physical and mental well-being of the participants. However, they have an influence on when and where the workshops take place. It is also important that the temperature is appropriate (air-conditioned/heated room), and breaks are long enough depending on the needs. It is also worth fostering of an appropriate atmosphere during the workshops, which will guarantee the satisfaction of the need for the safety of the seniors.

On the one hand, **participants postulate that educators should devote more attention to them during classes,** help, support, and on the other hand, **they expect to be given a chance to independently reach** the essence of the programs they are learning to use. It is worth observing the progress of participants carefully and giving them the opportunity to learn independently (Kilian, 2015). At the same time, one should be vigilant that such an attitude does not make them feel neglected when educators devote their attention to people who are not doing so well.

It is worth mentioning here the **importance of the atmosphere prevailing during the classes**. It is important to cultivate the kindness of the educators towards the participants but also to ensure that seniors themselves take care to build mutual relations among themselves. This will help create new friendships, which will help maintain a good atmosphere and foster a desire to help each other. At the same time, educators should remain vigilant and

careful not to neglect people who appear to be independent, and who in fact may also require support, when supporting those who require it.

At the same time, the workshop participants expressed **the need to continue the activities**. The knowledge they gained during the project turned out to be valuable to them, and also stimulated the need to acquire knowledge concerning genealogy, searching for ancestors, and building their family history. Therefore, it would be worthwhile after the project activities **to inform the participants about places where they could do further research on genealogy on their own and about the people who could help them**.

Focus interviews with the course participants revealed the **need to repeat the content of the classes in a nutshell**, so as to revise the topics. This was pointed out, among others, by ATP, 64, PL:

> At the beginning of the following classes, it would be good to remind what was the subject of the previous lesson or to add one more day as a summary of the acquired knowledge. This would allow one more chance for the participants who, for various reasons, could not be present at a given lesson to learn what was discussed during the previous lesson, and the others to remember what they had learned.

It is also a suggestion for educators to **present their own family trees and their own ways of searching for ancestors and build their family histories**. Thanks to this, the participants, despite the difficulties they encounter when searching for information about their roots, will be motivated to overcome them and continue their work.

On the part of the participants, there was also ***a proposal to recommend homework*** after classes *i.e.*, exercises to be done at home, which would allow consolidating the skills acquired earlier. Here it would be helpful to use after-school materials containing the most important points of each lesson, which would allow the most important points to be remembered and which would be helpful during the additional exercises to be done at home.

There was also a suggestion from the participants **to give homework after the classes**. Exercises to be done at home would help to consolidate the skills acquired earlier. Here it would be helpful to have materials containing the most important issues raised during particular lessons, which would allow recalling the most important problems.

Another problem raised **was the equipment on which the participants work during the classes**. It should be in working order and have constant access to the Internet. The aim is to avoid malfunctions and interruptions in Internet access. The best situation would be to have a person present during the classes who would help to rectify any failures related to the operation of the equipment.

It is also reasonable for a person to use the same equipment during the cycle of classes. This is particularly important for people who are not fluent in computer skills. For people who are familiar with technical innovations, such changes will not be a problem. However, for older people who are just learning, it is worth taking care of the "personal" equipment. It would be best if they could work on their own computer if they have one.

It is also worth making sure ***that classes are held in one place***. It would be best if the participants did not devote their time and attention to searching for a workshop place immediately before the classes. The most advantageous situation would be if the whole cycle of classes were held in one location. Thanks to this, the participants would not be late for classes and would avoid unnecessary stress associated with difficulties in reaching the right venue.

The trainers also shared their suggestions on how to carry out further projects. They admitted that it is worth paying attention to the ***characteristics of older people's educators***. It is very important that they should be patient people who can solve problems and share knowledge with peace and composure. Seniors admitted that they value educators who are willing to help. Therefore, it is important to observe the needs of participants so that they feel satisfied at any time with the form of cooperation and relationship with the trainers. Participants like to feel support and willingness to act from younger teachers.

The last issue to be addressed when it comes to guidance for educators is ***to ensure the confidentiality of certain information***. Genealogical activities require the disclosure of certain sensitive data such as age, place of birth, origin, family names, divorce information, illegitimate children, *etc*. The last issue to be addressed in the guidance given to educators is to keep certain information confidential. Not everyone wants to share such information with other people. It is a good idea to give participants the opportunity to keep important information to themselves and to emphasize at the beginning of the course that this will be tolerated. Seniors are people who have certainly been instructed many times by the media and family not to give out their private information to strangers. This may give rise to fears and should be respected

Following these guidelines can improve the learning process for seniors. It is also worth mentioning a few principles of education of older people, which are commonly used to ensure high quality of education (in: Półturzycki, 1991): *the principle of temporality*, which results from the fact that the reaction time of seniors is longer. Usually, older people acquire new knowledge more slowly, therefore educators should reduce the pace of work and adapt

it to the abilities of learners; *the principle of a positive assessment of learning outcomes*, which is based on the motivation of seniors to learn and the desire to build a positive image of oneself.

It is important that educators assess the progress of senior citizens in a credible and relevant way in relation to the level of knowledge and skills acquired: *the principle of taking into account the physical and health condition of seniors*, which implies adapting to the physical and mental abilities of learners. Therefore, classes should be conducted in a way that does not overburden senior citizens. It is worth creating breaks during which you can regenerate your strength, and *the principle of frequent reference to the life experiences of seniors*, without which it would not be possible to deduce the wisdom of the older generation.

Following the above guidelines can improve the learning process for seniors.

POSTSCRIPT

We are providing our readers a book describing the activities that were carried out within the Learning Tree project. This publication is of a scientific and didactic nature, consisting of two parts. The first part presents the conclusions from the research conducted during the project. The second part consists of lesson plans from all the partner countries.

It should be emphasized that the work in this project had a tutorial character. Young adepts of science: students and doctoral students, conducted their often debut scientific and didactic activities. For the first time, they constructed lesson plans and tested them in practice, not only in their home environment but also abroad. They also debuted in their first serious scientific texts. During the project, they benefited from the support of more experienced researchers, but their contribution should be considered enormous. We are all the more proud to present to you this book, which is the culmination of these efforts.

We especially congratulate the scientific debutants, among whom we can mention: Kacper Manikowski, Kamila Wylęgły, Sylwia Bokuniewicz, Anna Ptak, Magdalena Jaworska, Olga Niemasz, Mustafa Çelik. They are the main "driving force" behind the *Learning Tree* project.

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No less important is the fact that the idea of the project came from the dreams, plans, and determined actions of Grzegorz Mendyka, who set as his aim not only the promotion of genealogical knowledge but also the scientific elaboration of this issue. It is he, together with Kacper Manikowski, who has watched over the proper education in the field of digital genealogical competence.

Without the involvement of international partners, the project would not have had such a wide impact. The efforts of Hasan Yuka from Turkey, and Anita Sarno from Italy, made it possible to implement *Learning Tree* on a larg-

er scale. It is thanks to them that courses abroad have been organized, data on genealogy and training provision for senior citizens in their countries has been collected, and teaching materials translated into their native languages.

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APPENDIX - TEXTBOOK FOR ICT COURSE WITH ELEMENTS OF GENEALOGY

The workbook includes 16 lesson scripts

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Instructions used in the course are available for download at the links:

— for the Polish language version: **https://learntree.weebly.com/uploads/1/1/0/1/110118525/handbook_pl.pdf**
— for the English-language version: **https://learntree.weebly.com/uploads/1/1/0/1/110118525/handbook_en.pdf**
— for the Italian-language version: **https://learntree.weebly.com/uploads/1/1/0/1/110118525/handbook_it.pdf**
— for the Turkish-language version: **https://learntree.weebly.com/uploads/1/1/0/1/110118525/handbook_tr.pdf**

The ICT Course Workbook with Elements of Genealogy was produced as part of the Learning Tree project, Project No. 2017-1-TR01-KA204-045897 and may be downloaded under CC-BY-SA 3.0 license.

Script 1.
What are folders and how do you create them?

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: computer, projector, photos

Workshop topic: What are folders and how to create them?

Learning objectives: Main objective: to familiarize the participants with the use of the computer and improve their skills in this area, with particular attention to the use of the computer, creating a new file, transferring documents, and storing documents

Specific objectives:

Participant:
- knows how to turn the computer on and off
- knows how to use the keyboard and mouse
- knows what a folder is and how to create one
- understands what creating a new file is
- understands how to save documents
- can use a computer in basic terms
- can transfer documents to a folder

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Introduction	Explaining what a file is and what it is used for, and why we need files	Discussion Explanation	10 min	All educators and participants are present
2. Motivation	Let students understand that using a computer to store memories is not difficult, and that managing something new will give them confidence	Discussion Presentation	10 min	Group discussion
3. Course processing	- Everyone sits in front of their computers and learns how to turn on the computer, - Using the mouse, right and left keys, - Clicking right and pressing „new folder" to have a new folder, - Naming a file, - Moving a file on the screen to a new location, - Moving a document or picture to a file and saving	Discussion Lecture Presentation Exercise	40 min	Individual work The educator leads in the process
4. Assessment	First participants check their tasks against each other. The educator advises how to correct any errors that occur and gives more time to do the task if necessary.	Practical exercises	20 min	Working in pairs
5.Summary	After completion, the educator checks everything and evaluates each student, taking notes	Consolidation Error checking	10 min	Assessment

Script 2.
Word - processing software

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: computer, projector, photos

Workshop topic: Word processing program - Word

Learning objectives: Main objective: to present the Word program and the possibility of creating text and editing them

Specific objectives:

Participant:
- knows how to use the keyboard
- understands what the functions of the various keys are, necessary for writing text
- will be able to mark individual parts of a sentence, change uppercase letters to lowercase letters, use Polish characters
- will be able conduct simple text formatting according to given criteria

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Introduction	Greetings, presentation of workshop objectives.	Discussion Explanation	10 min	The educator warms up the participants
2. Motivation	introductory animation to attract adult attention and indicate the intended use of Microsoft Word. At the end of the animation, participants are asked preparatory questions such as: „How do you prepare text on the computer? Which text: prepared with handwriting or prepared on the computer is more efficient?"	Discussion Presentation	10 min	A relaxed/non-committal debate led by the educator to prepare participants to work on their texts
3. Course processing	- Microsoft Word is started. - Participants are asked to write text displayed using a projector. - The text created is shown by participants one at a time. - Examples of modifying and formatting the text are displayed using the projector. (Changing font, size, color, bold, italics, underlining of selected)	Discussion Lecture Presentation Exercise	40 min	Participants write the projected text on their computers
4. Assessment	Participants receive a sample text and are asked to format: - font to Tahoma, - size 16, - red color - italics. Where participants need support, the educator instructs, so continuous learning is ensured	Practical exercises	20 min	Participants follow the instructions
5.Summary	The process is evaluated to determine where the subject is not clearly understood. If there are any gaps, problems are addressed using a variety of teaching methods	Consolidation Error checking	10 min	Educator checks for errors.

Script 3.
Word processing software

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: computer, projector, photos, document with a poem

Workshop topic: Word processing software

Learning objectives: Main objective: improvement of editing skills and finding files (documents) on the computer by participants

Specific objectives:

Participant**:**
- knows how to start Word
- will be able to write in Word
- will be able to cut on chosen text and paste it into a new document

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Introduction	Participants ask questions to get high motivation about the courses. Their readiness is checked.	Discussion	10 min	Educator and participants lead a discussion
2. Motivation	To motivate participants, the educator provides a detailed explanation of the texts they write and how they can copy a line from a file.	Discussion, lecture - multimedia presentation	20 min	Educator leads the lecture
3. Course processing	Microsoft Word is started by the participants. Participants are asked to write text that is displayed using a projector. The written text is shown to the educator for review. The educator demonstrates how to copy selected texts to another area in Word. Participants are asked to cut out a section of text and move it to a new file in Word.	Discussion, lecture - multimedia presentation	30 min	Instructions and work in pairs
4. Assessment	Educators ask participants to open a poetry file. Educators ask participants to copy the first paragraph of the found poem and attach it to the Word document. Exercises and questions are evaluated assistance is provided as needed. Process is evaluated to determine if everything is clear to participants.	Practical exercises	20 min	Educator controls the work
5.Summary	Exercises are evaluated to determine where the subject is not understood. If the need arises, these problems are addressed through various teaching methods	Practical exercises	10 min	Evaluation by educator

Script 4.
Word processing software - further forms of editing

Series and Activity Name: Acquiring practical ICT skills
Place of implementation: classroom
Workshop participants: seniors 55+
Instructors: educators
Duration of workshop: 90 minutes
Materials: computer, projector, photographs,
Workshop topic: Word processing software - further forms of editing
Learning objectives: Main objective: to teach how to find a file with photos on the computer and how to use photos in Word
Specific objectives:
Participant:
- knows how to search for pictures on a computer disk
- can place sentences on a photo
- can paste pictures in a text document by changing the size of the picture

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Introduction	Welcome, presentation of workshop objectives.	Discussion	10 min	Organizational - methodological notes
2. Motivation	To attract participants' attention, pictures of landscapes are searched on the Internet and a discussion is held about which are nice and which are not.	Discussion, lecture - multimedia presentation	5 min	Educator welcomes everyone Educator and participants make a decision about the pictures
3. Course processing	The educator explains in detail how to add an image to Word. An image is copied from another file. Microsoft Word is started. Educators explain how to add a picture to a text document. An educator describes how to resize and change dimensions. Educator demonstrates how to change image borders and styles.	Discussion, lecture - multimedia presentation	45 min	Work in pairs under the supervision of the educator. Looking for pictures by the participants. Editing of pictures.
4. Assessment	Participants are asked to copy a winter landscape from another file. They are asked to add it to a Word document and create a border on the image at size 3. Where, participants require support, the educator instructs so that continuous learning is provided.	Practical exercises	20 min	Individual work
5.Summary and conclusion of the workshop	Evaluating work upon completion. The evaluation identifies parts that are not well understood. If there are still problems, the deficiencies are explained again, using a variety of teaching methods.	Checking for errors	10 min	Evaluation reports are stored

Script 5.
Word processing software - further forms of editing

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: computer, projector, photographs,

Workshop topic: Word processing software - further forms of editing

Learning objectives: Main objective: to familiarize students with the photo editing capabilities of Word and to discuss finding images and using them with the program

Specific objectives:

Participant:
- can independently create a new document with sentences and pictures
- can change the style of an added picture

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Introduction	In order to catch the attention of the participants, pictures of the region they live in are searched and they are asked whether these pictures are beautiful or not.	Discussion	10 min	Strong motivation of the participants
2. Motivation	In order to motivate the participants, the educator explains in detail how to copy a picture into Word	Discussion, Presentation	10 min	Exchange of ideas
3. Course processing	The educator demonstrates how to copy a picture found on the Internet into the official Word program. The educator describes how to resize and change dimensions. The educator shows how image borders and image styles are applied and changed using the demonstration method. The educator demonstrates how to remove an inappropriate copied image.	Discussion, Presentation Internet	40 min	Individual work Cooperation in groups (if necessary)
4. Assessment	Participants are asked to research images of Roma over the Internet. Participants copy the images they find and attach them to a Word document. Where, participants need support, the educator instructs so that continuous learning is provided.	Practical exercises	20 min	Participants should decide for themselves and follow instructions without further help
5. Summary and conclusion of the workshop	The work is evaluated. The assessment identifies parts that are not well understood. If there are still problems, the deficiencies are further explained using a variety of teaching methods.	Practical exercises Checking for errors	10 min	Consolidation

Script 6.
Basic Internet knowledge and skills / Introduction to the Internet

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: projector and computers, smartphones with internet access, flip-charts

Workshop topic: Basic Internet knowledge and skills / Introduction to the Internet

Learning objectives: Main objective: to explain how to search and explore the Internet while staying safe

Specific objectives:

Participant:
- knows what the Internet is and how to use it
- understands the essence of online copyright, the importance of terms of use, privacy policies
- will be able to use Internet browsers, open websites, use website addresses, open bookmarks
- will be able to print material from the Internet

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Introduction	- Greeting. - Getting to know each other. - Breaking the first ice and energizing presentation of workshop objectives.	Discussion and informal methods	10 min	Creating a positive atmosphere. Integration. Participants get to know the aim of the activity and target tasks
2. Theory of workshop content	Educator answers questions: - What is the Internet and what you can do with it. - Learning how to launch a web browser and how to find and save a site. - Learning how to use links, bookmarks, and how to print a Web page. - Learning more about copyright laws on the Internet, as well as website terms of use and privacy policies. - Putting into practice the knowledge gained.	Discussion, lecture, multimedia presentation	20 min	Familiarizing with the use of internet in the group.
3. Using the acquired knowledge in practice	- Participants practice using the Internet search engine and its functions. - Learning the difference between an Internet search engine and web pages. - Quiz and personal activity. Searching for selected topics on the Internet.	Practical exercises	20 min	Getting to know and working with computer and technical devices. Developing searching skills.
4. Consolidation of new information and and skills by trying to apply them in new situations.	- Participants practice using the Internet search engine and its functions. - Learning the difference between an Internet search engine and web pages.	Questions Discussion on the theory Continuation of practical exercises	20 min	Repetition in order to consolidate the acquired knowledge
5.Check new knowledge and skills for mastery.	- Quiz and personal activity. Searching for selected topics on the Internet.	Online quiz/ or substitute	10 min	Source: www.learnmyway.com www.digitalunite.com To check and evaluate the knowledge acquired during the class.
6.Summary and conclusion of the workshop	- Discussion of the participants about the workshop. Summary and collection of feedback. - Participants make a self-evaluation.	Discussion	10 min	Self-assessment and reflection to achieve awareness. Useful feedback for trainers

Script 7.
Exploring Google

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: projector and computers, flipcharts

Workshop topic: Discovering Google

Main objective: Main objective is to characterize Google and discuss its effective use

Specific objectives:
Participant:
- knows what Google and Google Chrome are, their functions, advantages, and disadvantages
- understands what searching on Google is about
- will be able to save files from the Internet
- will be able to remove search history from Google

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Introduction	Welcome, presentation of workshop objectives.	Discussion	10 min	-----
2. What is Google and how to use it.	After a theoretical introduction and explanation of what Google is, the trainer shows the steps to effectively find the information we need.	Multimedia presentation, work o computers	30 min	Giving instructions
3. What is Google-Consolidation and Integration	Integration and consolidation of acquired knowledge. The trainer shows and teaches how to view the browser history and how to delete it. Trainer shows all steps and participants repeat and practice.	Practical exercises	20 min	Giving instructions
4. Saving images and files from the Internet.	Trainer shows participants how to save images and files. Participants work with a personal device and Internet connection.	Practical exercises	20 min	Giving instructions
5. Summary and conclusion of the workshop	Discussion and feedback on what they have done and learned. Self-reflection and self-assessment.	Discussion	10 min	Informal methods

Script 8.
Google Apps

Series and Activity Name: Acquiring practical ICT skills
Place of implementation: classroom
Workshop participants: seniors 55+
Instructors: educators
Duration of workshop: 90 minutes
Materials: projector and computers, smartphones with Internet access, flipcharts
Workshop topic: Google applications
Main objective: to familiarize participants with Google applications and inspire them to make their own discoveries in the discussed area
Specific objectives:
Participant:
- knows what Google apps are and how to find and use them
- knows where to get a general overview of applications and how to potentially use them
- understands how to create a Gmail account
- knows how to use Google Drive

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Activities	Welcome, presentation of workshop objectives.	Discussion	10 min	----------
2. Getting to know Google applications	Introduction to Google applications, how to find and use them. Educator introduces the topic by showing some videos (e.g., videos from YouTube website).	Multimedia presentation	20 min	Participants are familiar with the tools provided to them by Google.
3. Practicing on Google tools	Educator introduces different Google tools. Teaches skills to find and use specialized tools.	Practical exercises	20 min	Participants have the opportunity to choose the tools that suit their needs
4. Creating a Gmail account	Turning on the Gmail website. Detailed explanation of the registration process. Registering a Gmail account. Explanation of Inbox and its functionality. Sending and receiving email messages between participants. Attaching and downloading email attachments.	Practical exercises	30 min	Learning about the Gmail sign-up process. Learning the basic functions of e-mail; sending and viewing e-mail messages
5. Summary and conclusion of the workshop	Summary and reflections	Discussion	10 min	-------

Script 9.
Genealogy on the Internet

Series and Activity Name: Acquiring practical ICT skills
Place of implementation: classroom
Workshop participants: seniors 55+
Instructors: educators
Duration of workshop: 90 minutes
Materials: projector and computers, smartphones with internet access, flipcharts
Workshop topic: Genealogy on the Internet
Main objectives: to instruct participants how to search and browse genealogy websites on the Internet
Specific objectives:
Participant:
- knows what genealogy is
- understands the nature of searching for genealogy information online
- understands what are databases and genealogy
- be able to create a personal list of reliable online sources about genealogy

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Introduction	Welcome, presentation of workshop objectives.	Discussion	5 min.	----------
2. What is Genealogy and how to get Genealogy information	Trainer asks what genealogy is. Brainstorming and group activities with a flipchart. Then, the trainer explains the theoretical part. Practical part: each participant finds information about genealogy on the web.	Discussion, lecture – multimedia presentation Practical exercises	10 min 20 min	Gain knowledge about genealogy To become familiar with searching for genealogy information on the Internet
3. Genealogical Sources and Databases	Theoretical part and educator's explanation about sources and databases about genealogy.	Practical exercises	20 min	Giving instructions / explanations
4. Consolidating new information and skills	Creating a list of reliable sources about Genealogy. Sharing and checking work results with other participants. Working in pairs/groups	Group discussion Practical exercises	30 min	Practical part
5. Summary and conclusion of the workshop	Summary and reflection	Discussion	5min	----------

Script 10.
Social networking sites and blogs, a general overview

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: projector and computers, smartphones with internet access, flip-charts

Workshop topic: Social networking sites and blogs, general overview

Main objective: to familiarize participants with the issue of using social media such as Facebook to communicate

with other people

Specific objectives:
Participant:
- knows what a social network is and its benefits
- understands the essence of social networking sites and blogs about genealogy

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Organization and order activities. Introduction	Welcome, presentation of workshop objectives.	Discussion	5 min.	----------
2. Overview and discussion of workshop content	What a social network is, and a general overview of well-known social networks. What are the uses and benefits of social networking?	Discussion, lecture - multimedia presentation, group work Lecture, theoretical part	20 min.	Team work (dividing participants into small groups). Presentation of ideas generated in brainstorming. Explaining the instructions
3. Learn about Facebook and genealogy groups	Educator demonstrates how Facebook works and introduces participants to groups about genealogy	Lecture, theoretical part	20 min.	Practical part.
4. Consolidate new information and skills by trying to apply them to new situations.	Search and discover Facebook pages about genealogy	Practical exercises	20min	Exercise confidence in searching
5. Check new knowledge and skills for mastery	Participants will create a Facebook group or page about genealogy	Presentation, Discussion	20min.	Practical part. To learn how to use the web conveniently and different devices.
6. Summary and conclusion of the workshop	Summary and Reflections.	Discussion	5 min.	----------

Script 11.
Family Tree

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: computer, projector, smartphones with internet access, camera, examples of traditional family trees, Anhenblatt installation instructions

Workshop topic: Family tree

Main objective: To become familiar with the possibilities of creating traditional and digitized family trees

Specific objectives:
Participant:
- knows examples of traditional family trees and computer programs for building a family tree
- knows popular family tree building programs, especially Ahnenblatt
- will be able to build their own family tree from the traditional tree building template

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Organization and order activities	Welcome, presentation of workshop objectives.	Discussion	5 min	----------
2. Overview and discussion of the workshop content	What do I need to build a tree? Necessary data for building a tree. Examples of traditional family trees and a variety of computer programs to build a family tree using ICT techniques. Educator wraps up the discussion.	Discussion, lecture – multimedia presentation	20 min	Educator gives examples of traditional trees and computer programs for building trees.
3. Practical tree building skills	Participants' own family trees from a traditional template for building family trees.	Practical exercises	20 min	The participants draw their trees by hand using a template
4. Deciding on the type of ICT tree building method	Selection and discussion of a computer program for building a family tree. Each participant is supposed to download and install a program of his/her choice from the Internet, e.g., Ahnenblatt. Participants in groups (5 groups of 3 people each - mutual consultation)	Practical exercises	20 min	Teamwork of the participants: choosing, installing, and recognizing a genealogical ICT program.
5. Check new knowledge and skills for mastery	Task: build a family tree of 2 to 3 generations. Inserting family data: ancestors and descendants based on the template. The groups demonstrate the developed family trees. Discussion of workmanship errors.	Practical exercises	20 min	Each participant builds a family tree of his/her own family
6. Summary and conclusion of the workshop	The participant will state what they think is most difficult about using the chosen tree building program.	Discussion	5 min	----------

Script 12.
Digitized family tree - text introduction

Series and Activity Name: Acquisition of practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: computer, projector, smartphones with internet access, camera, instructions for using Ahnenblatt

Workshop topic: Digitized family tree - text introduction

Learning objectives:

Main objective: to improve the participants' use of a program for building a family tree (*e.g.*, Ahnenblatt)

Specific objectives:

Participant:
- is familiar with ICT software and hardware to help build a family tree
- understands the usefulness of ICT devices in everyday life: computer, camera, smart phone, printer/scanner
- knows how to use a digital photo camera, printer, build a simple family tree

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Organization of the workshop: organizing the activities	Welcome, presentation of workshop objectives.	Discussion	5 min	----------
2. Review and discussion of workshop content	ICT equipment to help build a family tree. Discussing a computer program using Anhenblatt as an example. The educator sums up the discussion.	Discussion, Practical exercises, Multimedia presentation	15 min	Educator discusses the pros and cons of ICT programs.
3. Equipment needed to create modern family trees - systematizing knowledge.	Tasks of ICT equipment in building a tree: computer, camera, smartphone, printer/ scanner.	Discussion, Lecture Multimedia presentation	15 min	Participants demonstrate the ability to enter text into Word.
4. Deciding on the type of ICT tree building method.	Task: build a family tree of 4 to 6 generations. Inserting personal family data: ancestors and descendants based on the template. The groups demonstrate the developed family trees. Discuss any errors in workmanship.	Practical exercises	20 min	Teamwork of the participants: choosing, installing, and recognizing a genealogical ICT program.
5. Check new knowledge and skills for mastery	Each group demonstrates the developed family tree as a project [e.g., .ahn file]. Discuss possible execution errors.	Practical exercises	20 min	Each participant builds a family tree of their own family.
6. Summary and conclusion of the workshop.	Participant identifies what they think is most difficult about using the selected tree building software.	Discussion	5 min	----------

Script 13.
Digitized family tree - entering photos

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Material: computer, projector, smartphones with internet access, camera, instructions for using XnView, instructions for using

instructions for using Anhenblatt

Workshop topic: Digitized family tree - entering photos

Learning objectives:

Main objective: to learn about the possibilities of creating traditional and digitized family trees.

Specific objectives:
Participant:
- knows ICT software and hardware to help build a family tree
- understands the usefulness of ICT equipment in everyday life: computer, camera, smart phone, printer/scanner
- knows how to use a digital photo camera, printer, build a simple family tree

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Organization of the workshop: organizing the activities	Welcome, presentation of workshop objectives.	Discussion	5 min	----------
2. Review and discussion of workshop content	Digital vs. analogue photography. How to bring family photographs into the computer? Educator discusses differences between copying digital photographs and scanning analog photographs. Educator summarizes the discussion.	Discussion, Lecture, Multimedia presentation	20 min	Educator gives examples of digital and analogue photographs
3. Practical photo editing skills	How to improve photographs - the basics of photo retouching. Discussing programs for retouching photos, using XnView as an example. Task: independently download and install a photo editing program such as XnView.	Discussion, Lecture Multimedia presentation	20 min	Participants install software (XnView) to process photographs
4. Consolidate the acquired knowledge and skills by trying to apply them	Participants in groups (5 groups of 3 people each) are to continue the family tree of 4 to 6 generations by inserting personal portraits of the family: ancestors and descendants /scans of old photographs, selfie.	Practical exercises	20 min	Participants continue to create a simple family tree
5 Check new knowledge and skills for mastery	Each group demonstrates the developed family tree as a project [e.g. .ahn file] Discussion of performance errors.	Practical exercises	20 min	Expanding the family tree of one's own family
6. Summary and conclusion of the workshop	The participant determines what, in their opinion, causes the greatest difficulty in using the program to build the tree and to process the photos.	Discussion	5 min	----------

Script 14.
Searching data in a genealogical database

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: computer, projector, smartphones with internet access, camera, examples of traditional family trees,

Workshop topic: Searching data in a genealogical database

Learning objectives:

Main objective: To encourage participants to do independent Internet searches to expand their family tree

Specific objectives:
Participant:
- knows how to use the Internet search engines they have learned
- knows the advantages of Internet databases and search engines of scans of metrical books
- understands what the Internet genealogy databases are about
- will be able to search for genealogical records
- will be able to use Internet genealogical databases

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Organization of the workshop: organizing the activities	Welcome, presentation of workshop objectives.	Discussion	5 min	----------
2. Review and discussion of workshop content	Discussion of the methodology of Internet genealogical research; „Online Handout" Varieties of formulating online queries. Saving information on disks.	Discussion Lecture Multimedia presentation	20 min	Educator demonstrates Internet search methods
3. Using the handout online	Internet genealogical research using the author's concept entitled „Online Handout".	Practical exercises	20 min	Email accounts, test active links from online mail
4. Practice skills by trying to apply them.	Participants in groups (5 groups of 3) practice Internet searches of scans of vital records and indexed surname databases.	Practical exercises	20 min	Digitally record acquired genealogical information
5. Check new knowledge and skills for mastery	Participants present their found genealogical data and its use in building a family tree. Discuss methods of recording data in a tree.	Practical exercises	20 min	Inserting Acquired Data into a Family Tree
6. Summary and conclusion of the workshop	The participant will identify what they find most difficult about using the selected tree building software.	Discussion	5 min	----------

Script 15.
Saving, exporting, and printing family trees

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: computer, projector, smartphones with internet access, camera, examples of traditional family trees

Workshop topic: Saving, exporting, and printing family trees

Learning objectives:

Main objective: To encourage participants to present family genealogy

Specific objectives:
Participant:
- knows the importance of using ICT to build a family tree
- will be able to save, export, and print a family tree
- will be able to propose different forms of presentation of genealogical studies and documents

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Organization of the workshop: organizing the activities	Welcome, presentation of workshop objectives.	Discussion	5 min	----------
2. Review and discussion of workshop content	Demonstration of possibilities to present family genealogy in different forms. Discussing their advantages and difficulties in implementation. Discussion about choosing a form of presentation.	Discussion Lecture Multimedia presentation	20 min	Educator demonstrates different ways to present their genealogy
3. Practical skills to protect data against loss.	Presentation of ways to save, export, send via e-mail family trees.	Practical exercises	20 min	Participants save, export, and upload files of their family trees
4. Printing a family tree.	Presentation of printed family tree templates. Preparing files for printing. Selecting equipment for printing.	Practical exercises	20 min	Participants independently prepare files for printing
5. Check new knowledge and skills for mastery	Presentation of printed family trees.	Practical exercises	20 min	Each participant presents a family tree of their own family
6. Summary and conclusion of the workshop	The participant will identify the advantages and disadvantages, in their opinion, of various designs and programs for creating graphical forms of family genealogy.	Discussion	5 min	----------

Script 16.
A family tree on a smartphone

Series and Activity Name: Acquiring practical ICT skills

Place of implementation: classroom

Workshop participants: seniors 55+

Instructors: educators

Duration of workshop: 90 minutes

Materials: computer, projector, smartphones with internet access, camera, examples of traditional family trees

Workshop topic: Family tree in a smartphone

Learning objectives:

Main objective: To improve participants' skills in the selection and basic use of a mobile application for building a family tree

Specific objectives:
Participant**:**
- is familiar with ICT software and hardware to help build a family tree
- understands the usefulness of ICT devices in everyday life: computer, camera, smartphone, printer/scanner
- will be able to use a digital photo camera, printer,
- will be able to build a simple family tree

Workshop stage	Task description	Method of task realization	Time	Organizational - methodological notes
1. Organization of the workshop: organizing the activities	Welcome, presentation of workshop objectives.	Discussion	5 min	----------
2. Review and discussion of workshop content	Discussion of the applicability of the multitude of applications on cell phones.	Discussion Lecture Multimedia presentation	20 min	Educator demonstrates various applications
3. Learning new skills and comparing them with those already learned	Application of a smartphone-modern cell phone to create a family tree. Installation of applications.	Practical exercises	20 min	Participants install various family tree apps of their choice
4. Consolidate new skills by trying to apply them	Participants in groups (5 groups of 3 people each) are to build a family tree consisting of several generations in the application on their smartphones.	Practical exercises	20 min	Participant builds a simple family tree using a mobile application
5. Check new knowledge and skills for mastery	Each group demonstrates the developed family tree in the smartphone. Export/import gedcom file.	Practical exercises	20 min	Each participant presents a family tree of their own family
6. Summary and conclusion of the workshop	Participant identifies what advantages and disadvantages they think the programs have for building a tree on a computer and a smartphone.	Discussion	5 min	Educator gathers student feedback about the apps in genealogist's work

There is a fountain of youth - it is your mind, your talents, the creativity you stir up in your life, and the lives of the people you love. When you learn to draw from this source, you will truly overcome old age.

Sophia Loren

The Taino Indians believed that there was a source of eternal youth on the mythical island of Bimini. Juan Ponce de Leon, a Spanish sailor, and explorer, also believed in this legend. In 1513, he organized an expedition that resulted in the discovery of a new land - the peninsula we now know as Florida. The source, however, he did not find.

Have you ever wondered what it would be like to be forever young? If so, welcome to the world of the *Learning Tree* project. A project that brought together generations, three countries - Poland, Italy, and Turkey, researchers and practitioners, teachers and students.Project participants discovered their talents, used their creativity, and shared their stories with those they love by building family trees.

There are seven chapters in the book. The authors answer questions about the ancestry, motivation to learn, and learning effectiveness of seniors. Each chapter is rich in theoretical and practical knowledge. *Learning Tree* is an adventure for students and educators of all ages. It is a journey that connects generations. A journey worth joining. We invite you into the world of a project that answers the question of the source of youth.

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LEARNING TREE