EDU.CARE: An Innovative Model of Training for The Elderly Caregivers

Giusi Miccoli [1], Małgorzata Stawiak-Ososińska [2], Agata Chabior [3], Soledad Quero [4]

[1] Entropy Kn, Rome – Italy, giusi.miccoli@entropykn.net

[2] The Jan Kochanowski University in Kielce-Poland, malgorzata.stawiak-ososinska@ujk.edu.pl

[3] The Jan Kochanowski University in Kielce - Poland, haga66@o2.pl

[4] Universitat Jaume I, Castellon – Spain, squero@uji.es

ABSTRACT

This paper presents the EDU.CARE project (Education for Care), approved by the European Community under the Grundtvig program. The general objective is developing "new caregivers for new elderly people": creating new professional profiles of offering an adequate service to the elderly, social subjects who are anthropologically changing. Needs Analysis of carers and elderly has focused on communication, personal support and active aging. Furthermore, the relationship between the elderly and technologies was investigated: seniors developing in Internet use, e-health programs, and e-learning. According to these findings and in order to develop news skills of trainers and carers an original learning methodology, which includes classroom training, coaching, e-tutoring, project work and web2.0 training, will be proposed. A brief description of the evaluation strategy that will be followed in order to assess the efficacy of the training methodology and the expected results are also presented.

Keywords: *Elderly carers, active aging, training, coaching, e-tutoring, web 2.0 training*

INTRODUCTION

"EDU.CARE" (Education for Care) aims to develop an innovative model of training for adults intended for a professional who is becoming one of the main forms of assistance for the elderly: the elderly caregivers/carers/ home health aides. This phenomenon appears mainly in Italy but also in other European countries like Spain and France.

The EDU.CARE project was approved by the European Community under the Grundtvig program in 2012 and was launched in November 2012 for a term of two years. EDU.CARE Consortium is a group of public and private organizations that, with different perspective and specificity, work in education and adult learning projects, share the aim of bringing innovation and improving effectiveness in lifelong learning processes. The geographical coverage governed the structure and competences of the partners who were involved compared to the geographical origin of the elderly carers. In fact an east-west migration phenomenon, especially of women, is charactering the elderly carer profiles.

The partnership is made up: the Italian co-ordinator Tuscia University of Viterbo, Entropy (Italian SME specialized in training and consultancy), Universitat Jaume I (Spanish University of Castellon), The Jan Kochanowski University (Polish University in Kielce), Babes-Bolyai University (Romanian University of Cluj-Napoca).

The central objective of this pilot training program is to transfer knowledge to trainers and consequentially develop skills to caregivers in Europe in order to: - change the negative perception of caregivers to the elderly, - forward awareness of the role of caregivers for themselves, - revisit their qualification training in national/regional schemes. The general objective is developing "new caregivers for new elderly people": creating new professional profiles of offering an adequate service to the elderly, social subjects who are anthropologically changing. As defined in various contexts, the new elder is a person capable of expressing their active cognitive and affective resource es, needs help and is less willing to accept a passive containment nursing care, low-level cognitive, emotional, cultural and social stimulation.

The innovative model of training will be settled through a methodology developed by EDU.CARE, which will be applied to all players in the 'chain' of this social phenomenon that will be involved in the project: the trainers of elderly caregivers, through organizations and institutions to which they refer, caregivers and the elderly people. Moreover, the partnership capitalizes previous experiences, based on achieved outcomes in former projects, following previous cooperation amongst the consortium members.

The training courses for trainers and carers will be supported by Web 2.0 Platform that will be a tool for trainers and carers to find materials, documents and resources. The project will have impact on different entities that indirectly and directly are involved in the question of the elderly people.

Seniors' educational needs and new learning spaces

The research conducted among the elderly and their carers, within the Need Analysis, compatible with objectives of the EDU.CARE project, points out the important role of communication needs, since communication is an essential foundation for social interactions, whereas for old age it is the most significant media of possibilities to adapt and integrate with the social environment. The respondents emphasised the huge importance of a need to overcome difficulties, express themselves, cooperate and influence each other. Except the first aspect, all are connected with direct communication. The need to express oneself is fulfilled at the level of human's linguistic capabilities. Whereas, the need for cooperation is contained in conversation mechanisms, and the need for influence (persuasion) satisfies and explains the level of functioning, covered by the scope of linguistic pragmatics. The elderly are not sufficiently prepared in the informative terms to be able to manage senile changes in communication. Seniors do not notice individualistic or social consequences due to various communication disturbances. This is in fact one of the issues in the solution of which seniors should be supported by their carers/advisers who would indicate possibilities and instruments to compensate occurring deficiencies. What is indicated and highly accentuated in partner countries (Italy, Spain, Romania, Poland) is the needs for personal contact, conversation, respect and acceptance, accompaniment not only in basic existential activities but also mental accompaniment - to be and enter into interpersonal and intergenerational relationships as well as the need for practical accompaniment, acquisition of economic skills, skills which improve the functioning in everyday life (Internet, pay card, e-health), skills to perform social roles more fully preventing ipso facto the exclusion of the elderly from particular dimensions of social functioning,.

Partners of the project are in agreement that the need to be active is one of the most important needs of seniors, for activity determines satisfaction of all human needs. Changes within the scope of performed social roles and cessation of labour market participation lead to generation of a great deal of spare time and necessity to modify the form of instrumental activity which dominated earlier (related to work in which a human heads for a particular target, reaping the benefits and satisfaction of work) into the expressive one (by choice, to meet their desires and needs, to extend their own living space).

In all the partner countries the approach to needs of the elderly can be regarded as unified. It is stressed that other people, contact with them or a possibility to be appreciated in the eyes of others are significant to seniors. Additionally, the need for satisfying exploitation of leisure time, which seniors have quite a lot, is emphasised. The elderly can realise themselves, direct their activities to new areas, take actions which enhance their functioning in a number of fields, beyond their reach so far, such as new technologies.

Education, which is of great importance in acquisition of new skills and competences, essential for efficient functioning in everyday life, is one of the forms of activity among seniors, because teaching the elderly requires an autonomous attitude, application of flexible solutions, and interactivity. This leads to popularisation of "Life Long Learning" which aim is to "promote an intercultural dialogue, help in self-realisation and practice of entrepreneurship among the elderly". Furthermore, within the Grundtvig program a number of projects are implemented. They support education of adults and the elderly, including education of "new" carers for "new" seniors.

In all countries of the EU, in the space of last several years, special emphasis has been put on courses in media education. Technological revolution - computers, Internet, mobile phones and pay cards have modified everyday life in which also seniors function. To quell concerns and fears towards these modern devices it becomes necessary to prepare this social group for skilful use of new media (Chaffin& Harlow, 2005). Importance of media education of seniors is emphasised by a draft resolution of the European Parliament on the ability to use media in a digital environment informing that media education needs to include all citizens: children, youths, adults, the elderly and the disabled (The Culture and Education Committee 2008/2129 (INI). In the context of development of information society and gradual transfer of most activities taken by humans in cyberspace, application of information and communication technologies becomes one of the basic skills enabling effective satisfaction of own needs, self-realisation and social integration. In the face of dynamic development of electronic media, and in particular interactive multimedia, it becomes extremely significant to provide the elderly with a possibility of acquiring skills to use them. Some studies prove that computer usage may increase the well-being of old generations (Dickinson, 2005). Digital networks enable mainly the elderly to

communicate in everyday life and remain independent as long as possible.

The mastery of an ability to use the Internet is of special importance for contemporary seniors (Czaja & Lee, 2007), because thanks to the use of different websites and emails the elderly gain the possibility of following events that take place outside their homes and being in regular touch with members of their families and friends living far away (Osman, 2006). This contact is frequently intensified owing to an ability to use the Skype service or a similar application for mutual visual contact. Internet chat rooms may enable the elderly, doomed to stay at home, to contact people with corresponding interests, and as a consequence to reduce their isolation.

What is an extremely significant element of Internet education is an ability to use e-health instruments, including any use of information and communication technologies in prevention of diseases, diagnostics, treatment, control and leading a healthy life-style. Instruments of this kind serve inter alia the purpose of communication between patients and service providers from the healthcare sector, provision of data between particular institutions and direct contact both between patients and healthcare staff. They can also include networks of information on health, electronic registers, telemedicine services as well as portable communication devices or communication devices which can be carried, used for supporting patients and monitoring their health. The e-health system may turn out to be extremely helpful, in particular for those seniors who for different reasons will be forced to stay at home for a long time.

During Internet courses, seniors-learners are also prepared to make purchases via the Internet on their own. This ability may prove to be indispensable and bring tangible gains for persons who find it difficult to move. At the same time, it is essential to raise awareness among learners of the risks to which they may be exposed while using this Internet service.

Application of an individual bank account is an extremely valuable skill acquired during classes in exploitation of Internet resources. For a number of seniors it is a huge barrier. They have a distrustful attitude to overload of information which is completely new and unclear to them. E-banking, logging, passwords, pins, a lot of signatures and envelopes with mysterious numbers are (usually) a barrier impossible to overcome. This situation is changed by courses during which learners are familiarised with rules on safe use of a bank account via the Internet. They learn how to carry out operations, check a balance, make transfers etc. After acquisition of this skill, they become more available, independent and self-reliant.

The ability to use the Internet is gradually being exploited by seniors, also for e-learning. Mainly old age pensioners who have access to technical innovations start to reap the benefit of this type of education. Such a form of teaching makes contact at a distance with eminent personages of social, economic, medical, artistic etc. life possible thanks to video- or audio-conferences. For a number of seniors the use of e-learning is still a huge barrier, but they realise that such education enables them to enhance knowledge, meet on the Internet with a huge crowd of peers from all over the world, and finally to gain a good quality of life (Duay & Bryan, 2006).

Emerging needs: from a deposit model to a greenhouse model

The research carried out within the EDU.CARE project expressly shows that it is essential to show paths, properly support and manage seniors for the purpose of creating new forms of activity, as well as new life-styles for the old age. This will be achieved by means of appropriate information, practical skills, social relationships and offer of local and supra-local environments, adequate to seniors' needs. It would be a good solution, which could meet all needs of the elderly, to provide them with a supporting person (carer/assistant/adviser) who would not only ensure everyday care, but would mainly show seniors the possibilities and instruments to compensate occurring deficiencies. In this context, it is understandable that the current form of individual support for seniors related to care (also hygienic), maintenance of their good health, concern for safety, but also frequently related to certain limitation of self-reliance (deposit model) should be replaced with another model - supporting, greenhouse. This model will include assistance, sanitary and personal care, concentration on safety, social rehabilitation, continuation of social relationships, commencement of animation and activation measures as well as a psychological support. Thus, the functions of "new" carers - guardians become assistants who accompany, understand, support and activate persons under their care change.

In search of an optimal model of preparing future assistants of seniors, the necessity to equip them with such knowledge, skills and competences that at work with seniors will enable introduction of the elderly in areas of social life which have been inaccessible for them so far (e.g. already mentioned new technologies) come to the fore so that seniors can feel more independent and will not feel excluded. Assistants should know how to stimulate seniors' activity so that persons under their care will not only aim at maintaining status quo within the scope of the basic level of fitness, but also try to keep up with changes in the contemporary world, show interest in offers addressed to them from different institutions and organisations as well as realise their interests and passions.

A future assistant of an elderly should be characterised by rich, sensitive, empathic personality, should have a

special attitude to a person under his/her care. It would also be advisable to possess organisational competences and impeccable manner. Such an assistant needs to understand the essence of processes that take place in human body, having an influence on health, fitness and frequently also on mental deficiencies as well as know how to identify needs. He/she must be prepared to accompany, discreetly observe, converse (not to talk about himself/herself, but to listen to an interlocutor) and to rapidly respond in critical situations.

During work with a senior, an assistant should know how to develop such a model of cooperation as to enable both parties to be self-sufficient, self-reliant and autonomous (within the limits of the basic mutual subjective relationship between the carer - senior; senior - carer). Assistants need to take actions (including educational activities) to update their economic knowledge, skills of management of own resources (tangible and non-tangible such as: interests and skills, competences and aspirations, knowledge and experience), to effectively teach new (often indispensable) practical skills, including efficiency in application of new technologies that facilitate everyday life as well as the functioning in society and family, to carry out social and altruistic activities (e.g. to encourage seniors to participate in volunteer work). Seniors' activity focused on self-development and empowerment, actions taken of their own free will (which will enable them to maintain individual and social identity), self-identification, a positively realistic self-redefinition as the elderly, auto-creation and if supra-subjective needs arise, accepting cooperation and dignity with respect to provided/received care and support should be the ultimate effect of assistants' operations.

As it has already been mentioned, a potential assistant of seniors should be up to challenges arising from the latest technologies. Apart from basic skills (knowledge about computer equipment and software, simple operations connected with files and folders, creation of simple text documents, operation of a web browser and email), it is advisable for an assistant to know how to search for information (acquire information on the Internet, save information in a format that is useful for him/her, to know issues related to safe use of a personal computer and the Internet). These skills would aim at preparing seniors for e-participation and e-education in which they under care could take part later on their own. Apart from practical skills in this area, an assistant needs to be aware of seniors' deficiencies arising from their age, health state (physical deficiencies connected with correct visual and auditory perception as well as shaking hands during the use of a keyboard or mouse) which could make exploitation of a computer difficult. Thus, assistants should also be familiar with availability of equipment for persons with dysfunctions (of eyes, hearing organs and the locomotor system) to be able to indicate possibilities of practical use of these facilities in private lives. Assistants of seniors should provide the persons under their care with a high level of activity for old age and optimal model of support and assistance for seniors to be active in different dimensions of their social lives. This will enable them to achieve the priority target i.e. maintenance of self-reliance and self-sufficiency as long as possible and as a consequence will lead to improvement of the quality of life of this social group. It means that activity of seniors themselves as well as actions taken by carers and educators of the elderly focused on the support to be active in different fields of family and social lives are of crucial importance in the model of favourable/positive ageing.

As a result of such operations, ageing (which is a process) and old age (as a stage in the life-cycle) will be treated as a developmental task, the time for building independence, subjectivity, identity and personal development.

METHODS AND INSTRUMENTS

With Need analysis and scientific review the Consortium has analyzed existing studies and former projects on caregiving, training models in caregiving; in addition it has identified the training needs of the training of trainers of elderly carers and elderly carers. Need analysis has allowed to formulate criteria for the design of Methodology and learning path.

In this step the training model was defined: training objectives, training tools, users' characteristics, knowledge and skills of trainers and caregivers, and guidelines for the implementation of the model. All the information are organized into 4 areas:

- Programs relating to the conduct of training activities in the classroom, training online activities and coaching for the project;
- Tools for use in various stages of participants training and assessment in the path provided;
- Evaluation tools;
- Guidelines and tips for the trainers, coaches and facilitators of the training program to support them in implementing methodology.

Moreover, in the design phase, contexts of application of the training model were chosen: each country has indicated the targets' characteristics (specifications), describing the specific context of work and paying attention to nationality of carers for the training effectiveness. In this task specific guidelines for each specific country and

different target were defined.

The EDU.CARE model involves a training program that will be articulated into different tools:

- Classroom training
- Coaching and Tutoring on the job
- E-tutoring
- Web-based training
- Project work of the trainers.

This training architecture is useful to realize the "Training, tutoring and project work"; the trial is organized in "First trial on trainers (classroom training, collegial sessions)" and "Tutoring on the job and project work of the trainers". The two different phases will allow the transfer of specific knowledge and at the same time development of skills for the management of the target carers.

For the "First trial on trainers (classroom training, collegial sessions)" the contents have also been identified: Skills on Basics of Anthropology and Gerontology of the Elderly, Skills on Basics of Psychology, Skills on Help Relationship, Coaching Skills, and Web Skills.

For "Tutoring on the job and project work of the trainers" the training objectives are: to develop coaching skills of trainers to support a path of development and growth of Carers, to develop a project work, to find new ways to manage and empower the elderly, to switch from a "deposit model" to a "greenhouse model". The identified contents are: how to manage the relationship with the elderly and how to support the caregiver in building appropriate styles of behaviour to be adopted into practice with the elderly. The training tools that have been identified to implement this program are:

- Coaching: individual and group meeting through the involvement of a scientific supervisor and coaches for each country. A scientific supervisor is involved in group meetings; 3-4 coaches are involved in individual coaching (every coach can have more trainers);
- E-tutoring: through the involvement of a tutor for each country. Each tutor supports trainers in project work giving stimuli and managing the forum on the web-platform;
- Web-based learning: access the platform using tools and content sharing.

The development of Web 2.0 Platform supporting the process of training the trainers in the future will be a tool for training and updating of carers. WEB 2.0 Platform is a shared place where trainers of different countries can exchange files and work like in a community of practice.

Therefore, EDU.CARE.WEB platform must support the entire learning process, performing the following functions:

1. storage and consultation of documents and files related to training;

2. information exchange and discussion between people involved in the project, using advanced features enabled on the platform;

3. learning by creating a community of practice. Through the Web 2.0 platform the users (trainers and carers) will have access to resources, content and contributions that affect their training, share information and experiences, offer services and advice for carers beyond the term of the project (virtual desk).

At a glance in the learning process we will use 4 different kinds of actions:

- Training: transfer specific knowledge and develop competences for training e-managing carers
- Tutoring: support trainers and carers in the learning process
- Evaluation: evaluate the learning process and introduce improvements
- Advice: trainers and carers support other carers in the management of elderly people; participants could add information to the training programme according to their own experience.

Evaluation Strategy

The mail goal of WP6 is to evaluate the experiences carried out and results obtained in the trial that will be conducted in order to assess the effectiveness and efficiency of the training program supported by the EDU.CARE.WEB platform. A second goal, according to the obtained results, will be the definition of the final version of the EDU.CARE Program.

Regarding the first goal, at the end of the trial several aspects will be assessed by both target groups (trainers and carers). Next a brief description of the assessment areas and tools that will be used to evaluate the training program is offered:

- *Learning*
  - A questionnaire for evaluating the contents included in the training program (basics of gerontology and anthropology, psychology, help relationship, coaching) will be designed. This questionnaire will be a multiple choice test.
  - Critical incidents. This methodology consists of presenting problematic situations related to the objectives of the training whereby the participant has to decide which one is the most appropriate solution out of several solutions presented.

These tools will be completed before and after the training program in order to assess the knowledge acquired by the participants.

- *Satisfaction* scales and questionnaires will be developed for both target groups (trainers and caregivers):
  - Satisfaction questionnaire with the training program in general,
  - Satisfaction scales with the EDU.CARE.WEB platform in particular. These scales will assess issues like how logic was the WEB platform, to what extent they were satisfied with it, if they would recommend it to other colleagues, if they found it useful to train new skills to trainers and caregivers, etc.

These tools will be completed by the participants after the training course. The satisfaction of the part of the coachers will also be evaluated.

- *Usability*. An adaptation of the System Usability Scale (SUS Brooke, 1996) will be used in order to assess issues such as difficulty, easiness of the use of the WEB platform.

The results of this evaluation will feed into a report that will contain the guidelines for implementing the training program format for trainers and carers. The training program format will be divided in:

- One format for trainers. In the Training program format for trainers it will be possible to find, through EDU.CARE web Platform, resources, contents and contributions that affect their training, to share information and experiences, to offer services and advice for carers beyond the term of the project. Trainers continue to train carers and to develop their skills profile. Trainers act as facilitators (tutors) of cognitive development of their users.
- One format for carers. In the Training program format for carers it will be possible to find, through EDU.CARE web Platform, resources, contents and contributions that affect their training, to share information and experiences. Carers have the possibility to consult trainers for their work with elderly. Moreover carers themselves could help other carers giving advice in their work and relation with the elderly people.

The training in cascade allowed by the training program supported by the EDU.CARE.WEB platform that will be implemented within the framework of the present project will make this training efficient by reaching many potential beneficiaries (trainers, caregivers and elderly people).

EXPECTED RESULTS

The project aims to support elderly in order to promote an active aging culture and practice through the personal assistance. The challenges posed by a changing society require an update of how caring is thought and the introduction of innovative criteria in the interaction between support staff, care institutions, and social institutions involved at various levels in elderly care. The project will have an impact on different entities that indirectly and directly are involved in the question of the elderly: a-social awareness to the issue of active aging on local and national media, b-awareness of the institutions that administer health and public assistance (regions /districts, local communities, health organizations, education), c-scientific community, d-professional communities where the initiative will be communicated (doctors, psychologists, nurses, social workers), e- private and public entities that provide training to carers (municipalities, cooperatives, non-profit, universities, educational and training associations, trade unions), f-union associations of elder carers, g- institutions representing senior citizens (academies for older people, social centres for the aged, cultural associations, cultural and philanthropic associations), h- families with older persons, i- older people directly.

The expected impacts are mainly three: (i) to train trainers and carers on care services and to introduce innovative criteria in the interaction between support staff, care institutions, social institutions involved at various levels of elderly; (ii) provide innovation to learning practices thanks to an original and interactive methodology; (iii) ensure the effective valorisation and exploitation of project results and products.

(i) EDU.CARE Training Program will test the Training Program in 4 countries: Italy, Spain, Poland, Romania. Target groups will be divided in two categories:

- Universities that will involve in the trial master students specializing in geriatrics; we expect that the Universities involved in the trial phase, will continue to use EDU.CARE for their students.

- Elderly residencies and Health care organizations that shall involve in the trial carers of elderly and elderly themselves.

The operational plan is to involve: 60 trainers, 70 carers, 65 elderly.

(ii) innovation in learning practices is an important expected outcome of EDU.CARE. Trainers and carers will be involved in the trial: it will transfer the skills to deliver services to the elderly, as well as formalise two professions. EDU.CARE Consortium intends to reach this goal thanks to an original learning methodology.

(iii) The project's dissemination strategy will be designed to support the exploitation plan. Key activities will include: a project web site; a strong presence on web sites used by potential users, through websites network of all partners involved (universities, elderly houses, institutions for health and social services); multilingual publicity materials; an International Public Awareness Event; a strong presence in conferences, exhibitions and trade fairs, publications on academic and professional journals, and dedicated activity to press releases and to mass media.

CONCLUSIONS

The methodological approach of the project EDU.CARE, at a glance, wants to achieve two objectives. The first objective is to design an innovative model of training for service providers of the elderly, using coaching and new technologies, contributing to a change in approach to management of the elderly. Carers must focus on active stimulation of the cognitive skills of the elderly and therefore not limited to the task of caring. The second objective is to spread the use of learning through new technologies in different target groups: trainers, caregivers, seniors. The use of the "language technology" contributes to the dissemination of new technologies and especially the inclusion of categories that usually do not use.

REFERENCES

Ala-Mutka, K., Malanowski, N., Punie, Y., & Cabrera, M. (2008). *Active Ageing and the Potential of ICT for Learning*. Luxembourg: Office for Official Publications of the European Communities.

Brooke, J. (1996). SUS: a "quick and dirty" usability scale. In P.W. Jordan, B. Thomas, B.A. Weerdmeester & I.L. McClelland (Eds.) *Usability Evaluation in Industry* (189-194). London: Taylor and Francis.

Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press.

Cazden, C. (1986). Classroom discourse. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (pp.432-463). NY:MacMillan.

Chaffin, A.J. & Harlow, S.D. (2005). Cognitive Learning Applied to Older Adult Learners and Technology. In *Educational Gerontology*, Vol. 31, No. 4, pp. 301-329.

Czaja, S. J. & Lee, C.C. (2007). The impact of aging on access to technology. In *Universal Access in the Information Society*, Vol. 5, No. 4, pp. 341-349.

Davis, B.H & Brewer, J.P. (1997). *Electronic discourse: Linguistic individuals in virtual space*. NY: SUNY.

Dickinson, A. et al. (2005). Strategies for teaching older people to use the World Wide Web. In *Universal Access in the Information Society*, Vol. 4, No. 1, pp. 3-15.

Duay, D.L. & Bryan V.C. (2006). Senior adults' perceptions of successful aging. In *Educational Gerontology*. No, 32, pp. 423-445.

Osman, Z. et al. (2005). Introducing computers and the Internet to older users: findings from the Care OnLine project. In *Universal Access in the Information Society*, Vol. 4, No. 1, pp. 16-23.

Watering, M. (2005). *The impact of computer technology on the elderly*. Retrieved 6 March 2009 on. http://collab.ist.psu.edu/future-fall2008/team-space/lifelong-engagement/life-long-engagmentfiles/HCI_Essay_Marek_van_de_Watering.pdf.

Wallace, S.E; Graham, Ch. & Saraceno, A. (2013) Older adults' use of technology. In *Perspectives on Gerontology*, No 18, PP. 50-59.

Walter, N. (2008). Nowe media w życiu człowieka starego. In A. Tokaj (Ed.), Starość w perspektywie studiów pedagogicznych, (pp.163-164). Leszno: WSH.

The Culture and Education Committee 2008/2129(INI), on: http://www.europarl.europa.eu/meetdocs/2004_2009/documents/pr/736/736453/736453pl.pdf

http://www.ezdrowie.lodzkie.pl/index.php?id=64

http://wiadomosci.ngo.pl/wiadomosci/826819.html

http://di.com.pl/news/43922,0,Jak_nauczyc_seniora_obslugi_internetu.html#dalej