Lifelong Learning as a tool in combating age-related dementia and activating the potential of seniors: “WISE” – Designing a project of integrated educational interventions during third age

Eugenia A. Panitsides*

University of Macedonia, 156 Egnatia Str, 54006 Thessaloniki, Greece

Abstract

Taking into consideration that European Union's population is ageing faster than in most other world regions, combating age-related mental decline along with activating the potential of the elderly is a crucial component of enabling long-term growth and enhancing social cohesion. Hence, an integrated framework has been designed to address the above challenges by providing for interventions at a dual level: a) develop and implement educational interventions on seniors’ (65+) cognitive stimulation, and b) train seniors to act as educators in delivering cognitive-based interventions, multiplying the spill-over effect of the original intervention and generating wider benefits at economic and social levels.

Keywords: lifelong learning; active ageing; age-related dementia; project design

1. The Context

1.1. European Union & the “Ageing Population” challenges

Within a contemporary context of demographic, social and cultural changes imposed in the European Union (EU), socioeconomic problems arising are intensified by a rapidly ageing population (17.4% are over 65 years old) (Eurostat, 2011), whilst future projections indicate that the number of people over 60 will nearly double between 2005 and 2025. According to the Commission of the European Communities (2008) large cohorts born in the 1950s

* Corresponding author. Tel.: +30 2310420304; fax: +30 2310232032.
E-mail address: epantsidou@uom.gr
and 1960s, known as the “baby boomers”, will reach old age in the forthcoming years, causing an abrupt increase in the number of elderly people (65+). The new demography of low fertility in combination with low mortality boosts population ageing (Christensen et al., 2009), estimating that the number of people aged 65 and over in the EU will increase from 79 million in 2000 to 107 million in 2025 (+35%) and to 133 million in 2050 (+68%) (Muenz, 2007). Within this age group the largest increase is to be expected for people over 80 years of age (+180%), whilst at the same time the working age population is projected to decrease significantly, raising thus the “dependency ratio”.

Due to rise in life expectancy, especially in developed countries, dementia's incidence has increased dramatically and some current forecasts project a doubling of the number of persons affected every 20 years. In effect, Europe accounts for over 28 % of the global number of people with dementia, following only Asia (with 35 %) (Prince & Jackson, 2009). In this respect, the Council of the European Union (2008), acknowledging the challenges faced with a swiftly ageing population and the fact that prevalence of neurodegenerative diseases rises with age, called on member states to provide for strategies that could combat the onset of dementia so that increased longevity could be accompanied by a certain quality of life for seniors. Moreover, the particularly rapid increase in life expectancy in those EU countries where it had been relatively low has turned neurodegenerative diseases a Europe-wide concern, shifting the emphasis on preventive actions, such as cognitive stimulation. According to the Commission of the European Communities (2009), there is growing evidence that mental activity and stimulation, through lifelong learning, as well as through social interactions, may reduce the risk of developing dementia. Conversely, inactivity appears to be a risk factor, as there is evidence to suggest that when people come to retire without making appropriate adjustments, retirement acts as a catalyst for age-related cognitive decline.

Furthermore, in light of current economic crisis in the EU, the problem of marginalisation of seniors has been intensified, whilst recession has greatly undermined welfare measures (Council of the European Union, 2010), turning the elderly particularly susceptible to the deregulation of the socioeconomic context. This is mainly due to the fact that old age, besides the decline of physical condition and of mental status, involves a series of inevitable changes, such as: a) withdrawal from active working life, b) changes in the family context, both at micro-level such as the empowerment of children and death of beloved persons, as well as at macro-level, such as a shift in family structure, and c) a sense of marginalisation both within family and society (Panitsides & Papastamatis, 2013). In addition, for more seniors transitioning to retirement can be fraught with serious identity crises, associated with loss of self-confidence, depression and psychosomatic disorders (Braithwaite & Gibson, 1987), often intensified by structural trends in the weakening of family ties as well as by negative stereotyping. In this respect, some seniors appear to have more physical and emotional restraints than expected given their actual physical condition, due to learned helplessness (Seligman, 1975), that is “learning” to be less engaged and active in their daily life.

Hence, despite possessing experience, skills and talents, not necessarily fading over time, the elderly are considered the most “unexploited” human resources, a fact which may entail huge direct and indirect costs. Freedman (1999) has argued that older adults are perhaps the only “increasing natural resource” available to modern societies, provided that we succeed in exploiting their talents and experience to serve contemporary socioeconomic demands. In the same vein, a Green Paper endorsed by the European Commission (2005) stressed the need to appreciate the positive aspects of population ageing, accentuating the valuable contribution many older people can still make both in the economic sphere and in the broader social context, whilst the impetus to counter against stereotypes and prejudices has also been outlined (Alzheimer Europe, 2007).

Thus, taking into consideration that EU's population is ageing faster than that in most other world regions, combating age-related mental decline along with activating the potential of the elderly is considered a crucial component of enabling long-term growth and enhancing social cohesion.

2. The Theory

2.1. LLL & Combating the onset dementia

Over the past 25 years, a great deal of evidence has been accumulated indicating that advancing age is accompanied by systematic decline in performance on a wide variety of cognitive tasks (Gustavsson et al., 2010; Papaliagkas et al., 2011), a process however which is not unavoidable. Research findings have confirmed the hypothesis that social interactions and occupational activities, contribute to the constitution of a cognitive reserve, in
the form of a set of skills or repertoires, that allows some people to prevent cognitive decline associated with normal aging or neurodegenerative diseases (Liu et al., 2012; Scarmeas & Stern, 2003; Tsolaki et al. 2010). Thus, differential susceptibility to age-related cognitive decline or neurodegenerative diseases is related to variables considered to be associated with the cognitive reserve, such as occupation, professional or leisure activities, and life style (Fratiglioni et al., 2004; Stern et al., 1994; Wilson et al., 2002). In effect, there has been evidence that an individual who uses the brain network more efficiently, or is more capable of calling up alternate brain networks or cognitive strategies in response to increased demand, may have increased cognitive reserve and might maintain effective performance longer in the face of brain pathology (Stern, 2003).

Findings on the role of cognitive reserve entail important implications both for cognitive interventions during retirement, as well as the structure of retirement itself. On these grounds there are two main axes for interventions after retirement. The first one concerns keeping occupational activities as far as possible, as they may contribute to maintain cognitive functioning during old age. The second one concerns the provision of educational interventions on seniors’ cognitive stimulation. In light of both “Continuity” and “Activity” theories (Atchley, 1976; Havighurst, 1963, Pushkar et al. 2010), it is assumed that either by maintaining patterns of important activities in life domains or by finding new satisfactory activities to replace discarded activities may help older people maintain psychological wellbeing, as meaningful activities can provide psychological benefits, such as a sense of control, life satisfaction, and happiness (Antonucci, 2001).

Multiple wider benefits, thus, besides contribution to combating the onset of dementia, may emanate from educational interventions during third age. According to Groombridge (1982), there are at least five major reasons why policy makers and society at large should recognise the importance of late life education, as it may enhance seniors’: a) self-reliance and independence, b) functionality and resilience, c) contribution to society, d) expression and creativity, as well as e) foster intergenerational understanding. In the same vein, relevant research findings (Narushima, 2008; Panitsides, 2013; Preston & Hammond, 2002) have indicated that the potential contribution of Lifelong Learning (LLL) in mental and physical health and quality of life of seniors is of significant importance, enhancing their self-concept and motivation, as well as promoting social networking, factors which are assumed to play an important supportive role in enhancing their well-being levels.

3. The Project

3.1. Aim and objectives

Population ageing is undoubtedly going to be a key demographic challenge in all European countries, whilst an eastward shift of the ageing process is projected to take place towards Southern and Central-Eastern Europe countries (Lanzieri, 2011). Hence, in light of research findings at a multidisciplinary level and European Union mandates to address the issue of dementia through policies aiming at prevention rather than repression (European Commission, 2009), a project framework has been developed, bearing the symbolic name “WISE”, an acronym made up of the initials of the main axes of focus (Wellbeing, Innovation, Seniors, Education), to add to the state of the art in the field of LLL initiatives in the EU.

WISE aims at fostering multidisciplinary synergies, so as to provide an integrated framework for interventions that may promote transition from passive into active aging, both by activating the potential of seniors as well as promoting healthy aging through voluntarism, education and dementia-prevention strategies, generating thus wider benefits at both economic and social levels. More precisely, the hypothesis rests on the evidence-based assumption that although cognitive decline increases with age, this process can be either prevented or delayed through interventions contributing to the constitution of a cognitive reserve. The most innovative aspect, however, in the WISE framework is related to its dual targeting, aiming at enabling seniors (retired teachers) to carry on their occupational activities after retirement at a voluntary basis, whilst at the same time providing individuals over 65 years with the chance to combat the onset of dementia, as well as to get involved in creative and socialising activities, multiplying thus the spill-over effect of the original intervention.
3.2. Structure & Methodology

The WISE framework pertains to a shift from traditional educational interventions addressed to seniors to an integrated approach which, besides the wider benefits associated with late-life education, caters for cognitive-based interventions combating or delaying the onset dementia, whilst at the same time providing retired citizens with the chance to remain active after retirement. Hence, taking into account the distinct characteristics of the trainers, the trainees, of the learning context and of dementia-related research findings, the programme is structured in four major phases:

Research phase: Initially, desk research will be conducted with the aim to achieve an overview of relevant literature and current practices in tackling dementia. To ensure homogeneity and comparability of the data, reports will follow a structured format which will serve the purpose of structuring the descriptive and analytical processes. All the information gathered will be put in a matrix, and methodologies and practices will be compared and cross-analysed to identify critical dimensions, which will be used in designing the WISE interventions. WISE methodological pluralism resides in the idea that a variety of methods can function in a complementary way by producing proliferative results. Thus, focus group discussions (qualitative data) will be conducted, so that all interested parties will be involved in designing the WISE materials and interventions, in order to achieve an optimal match between educational provision, seniors’ needs and scientific background. To increase the effectiveness and efficiency of group interaction, two working groups will be formed, the first one drawing on the trainers’ needs (retired teachers), whilst the second one drawing on trainees’ needs (non-demented seniors). It should be noted that in both working groups there will be participation of end users (stratified sampling - retired teachers and non-demented seniors), so as to provide for direct input concerning their perceived needs. Additionally, a needs analysis survey (quantitative data) will be carried out, depicting seniors’ cognitive and metacognitive competences and strategies. For this reason, an ‘Inventory of cognitive competence” is to be developed, including a 25-item measure of the self-regulatory processes. The instrument design will be based on existing psychometric self-report measures, while it will be tested for reliability and validity through a pilot study. The quantitative data will be analysed by descriptive statistical methods (frequencies and percentages, indicators of central tendency, dispersion and correlation), as well as multidimensional, multivariate analysis (principal component analysis, multivariate regression analysis, cluster analysis etc.). Findings will be combined with those of the qualitative research, as well as the State of the Art Report, to be used as a blueprint into setting course design specifications and building the WISE materials. Finally, cognitive functionality measures will apply to participants in the study both before as well as after the interventions. Data will provide a basis for the validation of the WISE materials and tools, shedding light into the effectiveness of the cognitive-based interventions.

Design phase: Input from the research findings will be used in the design of a set of courses for seniors, in the form of a modular syllabus. The core components of the design of the WISE syllabus will be the development of methodological tools and materials which, besides cognitive stimulation, will focus on actively involving trainees in the learning process, prompt interactive dialogue, help learners synthesise new knowledge, as well as foster creative imagination, signifying thereby a shift in the learning responsibility from the trainer to the trainee, so that seniors will be able to employ cognitive stimulation techniques even after the project’s life. As trainers’ training is considered a critical factor for the success of the WISE implementation, soon after syllabus development, the design of training courses addressed to volunteer trainers on the implementation of the WISE syllabus will follow, focusing on teaching methodology and guidelines for the use of materials.

Exploitation phase: During this phase, the results from the research and design phases will be exploited through pilot implementation of the materials developed. Initially, short training courses addressed to volunteer trainers will be implemented. Moreover, the syllabus and materials designed during the previous stage will be piloted. It should be noted that for the pilot phase of the WISE implementation retired teachers will be recruited as volunteer trainers. This decision is grounded on practical issues, as teachers are familiar with the teaching methodology theory and practice. However, in future multiplication of the WISE interventions, volunteers from various professional backgrounds could be recruited, undergoing however a more pertinent training.

Evaluation phase: WISE validation will be bi-fold, combining findings from data deriving from the “‘Inventory of cognitive competence” along with data from the “Cognitive functionality” measures. The findings will be compared and cross-analysed to come to conclusions regarding the effectiveness of the WISE interventions.
3.3. Impact & expected outcomes

In a European Union weighed under the problems emanating from a rapidly ageing population, WISE aims to contribute to functionality during third age and promote active aging, focusing on enriching seniors’ cognitive reserve. Moreover, it seeks to advance knowledge on the interrelation of educational initiatives and the combating or delaying of age-related dementia. In this respect, the expected outcomes of the WISE project pertain to three levels of primary importance so as to tackle the ageing challenges: a) research b) products and c) services, whilst they have multiple dimensions:

- Enable seniors to combat the onset of dementia, allowing them to be self-reliant and independent, thereby saving on welfare & medical expenses (economic dimension).
- Empower seniors to cope with practical and psychological problems in an increasingly complex, and changing social and family context, increasing thus their resilience and functionality (personal dimension).
- Provide for voluntarism interventions, enhancing seniors’ actual contribution to society. Moreover, social networking could be extended, through participation in the courses (social dimension).
- Provide seniors with a chance for creative expression (cultural dimension).

4. Conclusion

It has undoubtedly become an urgent mandate for EU not only to tackle the problems emanating from an ageing population, but to find ways to take advantage of their potential. In this respect, the European Parliament (2011) stressed as a priority the prevention of dementia through interventions drawing on preventative factors, such as promotion of physical and cognitive activity. The WISE framework aims to address the aforementioned challenges by providing for interventions at a dual level: a) develop and implement educational interventions on seniors’ (65+) cognitive stimulation, and b) train seniors to act as educators in delivering cognitive-based interventions. Hence, the impact of the WISE interventions may be bi-fold, enabling seniors to retain their cognitive and social functionality, as well as to remain active after retirement, whilst at the same time providing economies and societies with the chance to deploy seniors’ “wisdom”.

References

Alzheimer Europe (2007). Dementia in Europe Yearbook 2007. Brussels: Alzheimer Europe publications.
Antonucci, T. C. (2001). Social relations: An examination of social networks, social support, and sense of control. In J.E. Birren & K.W. Schaie (Eds), Handbook of the psychology of aging (pp. 427 – 453). San Diego, CA: Academic Press.
Atchley, R.C. (1976). The sociology of retirement. Cambridge, MA: Schenkman.
Breithwaite, V. & Gibson, D. (1987). Adjustment to Retirement: What we know and what we need to know. Ageing and Society, 7, 1–18.
Christensen, K., Dobhlhammer, G., Rau, R. & Vaupel, J. (2009). Ageing Populations: The challenges ahead. Lancer 374, 1196–1208.
Commission of the European Communities (2005). Green Paper: Confronting demographic change: a new solidarity between the generations. Brussels: COM 94.
Commission of the European Communities (2008). Demography Report 2008: Meeting Social Needs in an Ageing Society. Brussels: SEC 2911.
Commission of the European Communities (2009). Communication from the Commission to the European Parliament and the Council on a European initiative on Alzheimer’s disease and other dementias. Brussels: COM 380 final.
Council of the European Union (2008). Council Conclusions on public health strategies to combat neurodegenerative diseases associated with ageing and in particular Alzheimer’s disease. Brussels.
Council of the European Union (2010). Council Conclusions: A New European Strategy for Jobs and Growth. Brussels.
European Parliament (2011). Resolution on a European initiative on Alzheimer’s disease and other dementias. Brussels: 2010/2084(INI).
Eurostat. 2011. Demography Data (last modified December 23). http://epp.eurostat.ec.europa.eu.
Fratiglioni, L., Paillard-Borg, S. & and Winblad, B. (2004). An Active and Socially Integrated Lifestyle in Late Life Might Protect against Dementia. Lancer, 3, 343-353.
Freedman, M. (1999). Prime Time: How baby boomers will revolutionize retirement and transform America. New York: Public Affairs.
Groombridge, B. (1982). Learning, education and later life. *Adult Education*, 54, 314-325.

Gustavsson, A., Jonsson, L., Rapp, T., Reynish, E., Ousset, P.J., Andrieu, S., … Wimo, A. (2010). Differences in resource use and costs of dementia care between European countries: baseline data from the ICTUS study. *Journal of Nutrition Health and Aging*, 14, 8, 648-54.

Havighurst, R. J. (1963). Successful aging. In R. Williams, C. Tibbitts & W. Donahue (Eds.), *Process of aging* (pp. 299 – 320). New York: Atherton.

Lanzieri, G. (2011). Fewer, older and multicultural? Projections of the EU populations by foreign/national background. Brussels: Eurostat.

Liu, Y., Julkunen, V., Paajanen, T., Westman, E., Wahlund, L.O., Aitken, A., … Soininen, H. (2012). Education increases reserve against Alzheimer’s disease-evidence from structural MRI analysis. *Neuroradiology*, 54, 9, 929-38.

Muenz, R. (2007). Aging and Demographic Change in European Societies: Main Trends and Alternative Policy Options, *Discussion Paper No 0703*. Washington, DC: World Bank.

Narushima, M. (2008). More than Nickels and Dimes: The health benefits of a community-based lifelong learning programme for older adults. *International Journal of Lifelong Education*, 27, 6, 673–692.

Panitsides, E. (2013). Researching returns emanating from participation in adult education courses: a quantitative approach. *International Journal of Lifelong Education*, DOI:10.1080/02601370.2012.753123.

Panitsides, E. & Papastamatis, A. (2013). Promoting Active Aging through Lifelong Learning: Evolving Trends and Practices. *The International Journal of Adult, Community and Professional Learning*. (in print).

Papaliagkas, V.T., Kimiskidis, V.K., Tsolaki, M.N. & Anogianakis, G. (2011). Cognitive event-related potentials: Longitudinal changes in mild cognitive impairment. *Clinical Neurophysiology*, 122, 7, 1322-6.

Preston, J. & Hammond, C. (2002). The wider benefits of further education: practitioner views. *Wider Benefits of Learning, Research Report No 1*. London: Institute of Education.

Prince, M. & Jackson, J. (2009). World Alzheimer Report 2009. London UK: Alzheimer’s Disease International.

Pushkar, D., Chaikelson, J., Conway, M., Etezadi, J., Giannopolous, C., Li, K., & Wrosch, C. (2010). Testing continuity and activity variables as predictors of positive and negative affect in retirement. *Journal of Gerontology: Psychological Sciences*, 65, 1, 42–49.

Scarmeas, N. & Stern, Y. (2003). Cognitive reserve and lifestyle. *Journal of Clinical and Experimental Neuropsychology*, 25, 625-33.

Seligman, M. (1975). *Helplessness: On depression, development, and death*. San Francisco: W. H. Freeman.

Stern, Y. (2003). The Concept of Cognitive Reserve: A Catalyst for Research. *Journal of Clinical and Experimental Neuropsychology*, 25, 589–593.

Stern, Y., Gurland, B., Tatemichi, T.K., Tang, M.X., Wilder, D. & Mayeux, R. (1994). Influence of Education and Occupation on the Incidence of Alzheimer’s Disease. *Journal of the American Medical Association*, 271, 1004–1010.

Tsolaki, M., Papaliagkas, V., Anogianakis, G., Bernabei, R., Emre, M., Frolich, L., … Winblad B. (2010). Consensus statement on dementia education and training in Europe. *Journal of Nutrition Health and Aging*, 14, 2, 131-5.

Wilson, R.S., Mendes De Leon, C.F., Barnes, L.L., Schneider, J.A., Bienias, J.L., Evans, D.A. & Bennett, D.A. (2002). Participation in Cognitively Stimulating Activities and Risk of Incident Alzheimer Disease. *Journal of the American Medical Association*, 287, 742–748.