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## **Media Literacy for Older People Facing the Digital Divide: The e-Inclusion Programs Design**

### **Diseño de programas de e-inclusión para alfabetización mediática de personas mayores**

#### **Abstract**

This article is based on the fact that the Spanish population is aging, and is second only to Japan in its total number of senior citizens. Given this situation and the omnipresence of new technologies in everyday life, the use of Internet and ICT for older people is essential. The latest report by IMSERSO shows that only 15.6% of people aged between 65 and 74 connected to the Internet in the 3-month period measured. The data seem to show that there is a generational digital divide to be overcome. The studies that have addressed this issue have focused more on regional and specific aspects of the relationship between age and Internet use intensity, and these studies use age ranges as criteria. Other studies have introduced variables such as seniors' economic situation or educational level. With this in mind, public policies have sought to reduce this generational digital divide through a number of media literacy and e-learning projects but without success due to their poor methodological approach. This paper proposes a number of new methodological approaches to tackle the design of digital literacy programs for older people based on criteria such as degree of autonomy and the possibilities for enjoying everyday life, proposing the development of programs based on contextualism, incrementalism, motivation and absorption processes.

#### **Resumen**

Tras la japonesa, la población española es la segunda población que más envejece. Ante esta situación y la omnipresencia de las nuevas tecnologías, el uso de Internet y las TIC en la vida cotidiana se hace imprescindible para las personas mayores. El último informe del IMSERSO establecía que sólo se habían conectado a Internet en los últimos tres meses un 15,6% de las personas entre 65 y 74 años. Estos datos muestran la existencia de una brecha digital de carácter generacional que debe ser superada. Los estudios que han abordado esta problemática se han centrado más en aspectos regionales, y los específicos sobre la relación entre edad e Internet han abordado solo la intensidad de uso vinculada a intervalos de edades. Otros estudios han introducido variables como el nivel económico o educativo. Frente a esta realidad, las políticas públicas han pretendido disminuir esta brecha digital generacional mediante diferentes proyectos de alfabetización mediática y e-learning, sin lograr su objetivo por el deficiente planteamiento metodológico de los cursos. Este artículo propone una serie de nuevas perspectivas metodológicas a la hora de abordar el diseño de programas de alfabetización digital de las personas mayores basadas en criterios tales como el grado de autonomía o falta de la misma para la vida cotidiana

así como el desarrollo de programas basados en el contextualismo, incrementalismo, motivación y proceso de absorción.

### **Keywords / Palabras clave**

Media Literacy, older people, e-inclusion, digital divide, public policies, Internet, ageing, media competence.

Alfabetización mediática, personas mayores, e-inclusión, brecha digital, políticas públicas, Internet, envejecimiento, competencia mediática.

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### **1. Introduction and state of the art**

The demographic change that we have experienced in Spain has been rapid, progressive and profound. In the near future nearly a third of the population will be elderly. This increase is primarily due to increased life expectancy coupled with a decline in birth rates. After Japan, the projections for 2050 place our country among the highest in the world in terms of longevity.

Proof of this is that if we compare the numbers of older people in the early twentieth century with the general population figure for Spain in 2007, which reached 45,200,737, the population by this date had already risen 2.4 times (Barrio & al., 2009). Meanwhile, in 2008 the number of older people had increased 8 times with respect to 1900, going from 5.2% of the total population in the early twentieth century to triple that number for this date (16.7%).

The latest census of 2011 confirms this trend. The total number of people over 65 years of age amounted to 7,914,359, of whom 3,372,808 are men and 4,541,549 women (INE, 2012). Due to the ageing of the population pyramid, long-term projections of the INE for 2009-2049 indicate that the population over 64 will double in 40 years and will represent 31.9% of the total, with negative natural population growth from 2020. Thus, «in Spain for every 10 people of working age, in 2049 there will be nearly nine potentially inactive persons (under 16 or over 64). That is, the dependency ratio would rise to 89.6% from 47.8% at present» (INE, 2011: 3). The forecast is for a population in 2060 of 15,679,878 people aged 65 years and over, and for each child there will be 2.3 elderly people.

From a continental perspective, the European Union in its «Ambient Assisted Living (AAL) Joint Programme» indicates that life expectancy in Europe has increased from 55 in 1920 to 80 today. In 2020 about a quarter of Europe's population will be over 65 and the number of people aged between 65 and 80 will grow to nearly 40% of the European population between 2010 and 2030. An aging population means a change in the economic, social (IMSERSO, 2009) and technological structures for a country. Older people are compelled by circumstances to develop skills in the use of new Information and Communication Technologies (ITC) and thus lessen the digital divide between those who are connected (young people and adults) and those who are not connected (the elderly).

The purpose of this paper is to propose new perspectives to address the media literacy of older people underpinned by qualitative studies on this population group, based more on socio-cultural criteria than on age groups, which has been the majority approach so far. This would allow the design of training programs that are more efficient and suitable for bridging the generational digital divide and thus enabling the e- inclusion of elderly people, concentrating more on operating skills than on mere usability and access.

## **2. Older people and the use of new technologies**

If we analyse the data that refer to the use of new technologies, and specifically the Internet, among older people, we can clearly distinguish between access and usage. We must orientate ourselves towards the need to promote the beneficial use of ICT, valuing not only quantitative aspects on usage linked to Internet access and use of office tools.

The «Elderly people in Spain» report published by IMSERSO in 2008, in which Chapter 6 referred to «Daily life, attitudes, values and emotions in old age» (Barrio & al., 2009), established a series of very illustrative parameters on the use of ICT by the elderly, highlighting with respect to Internet access that only 50.5% of people between 65 and 74 connected to a computer daily, 31.5% weekly, 8.3% monthly and 9.8% not every month. The Internet services used are principally «information searches» (79.9%), «receiving or sending email» (78.7%) and «other» (62.7%). Very much below this are functions that could be considered useful for this social group such as «Finding information about health issues» (37.9%), «Obtaining information from websites on the authorities» (30.1%), «Purchasing goods and services» (20.2%) or «Downloading official forms»(16.8%). If we focus on the methods of acquiring computer skills, we found that 75.5% were self-taught, 60.6% had learned through people in their social environment and 30.9% in adult education learning centre courses. However, according to data published recently by IMSERSO and CSIC in the report entitled «A profile of elderly people in Spain, 2012. Basic statistical indicators» (Abellán & Ayala, 2012), the proportion of people aged 65 to 74 who had used the Internet in the last three months had fallen to 15.6%. This factor of exclusion of elderly people from Internet access is also evident in the «The Networked Society 2010» annual report of the National Observatory of Telecommunications and the Information Society referring to 2010 (Urueña & al, 2011), which states that if we focus the analysis on the age variable, we observe how the use of the Web is clearly differentiated, as the younger the person, the more use of the Internet, and conversely, the older the age, the lower percentage of Internet users.

At the European level, the data referred to the Indicators of the Digital Agenda 2011, in which Pillar 6 was dedicated to digital competence. This showed that while 90% of those between 16 and 24 are regular Internet users, only 46% of people between 55 and 64 are, this proportion decreasing to 25% among people between 65 and 74. This segment is as low as 20% when it comes to people between 55 and 74 with low levels of education.

Based on these data, we can see that there is a generational digital divide, defined as differences in access and use of ICT in different social environments. Linked to

the Internet, Castells (2011: 311) defined it as «the disparity between the Internet haves and have-nots». For its part, the Organization for Economic Cooperation and Development (OECD) conceptualized the digital divide as «the gap or divide between individuals, households economic and geographic areas with different socio-economic levels with regard both to their opportunities to access information and communication technology, and the use of the Internet for a wide variety of activities» (OECD, 2011: 5).

In the field of studies on Internet use a significant number of works have focused mainly on aspects related to regional variables and how economic and socio-demographic variables and different service prices by region influence the decision to install Internet in households (Chaudhuri & al., 2005); or in which in 14 European countries the determinants of individual Internet use and its intensity of use are analysed based on individual variables (Demoussis & Giannakopoulos, 2006) or similar work applied to 15 European countries (Vicente & Lopez, 2006). In the Spanish case the primary literature on the subject is linked to studies examining geographical differences in Internet use (Carmona & García, 2007; Jordana & al., 2005). A more complete study includes socio-demographic factors and concludes that as age increases, the probability of Internet use decreases by 1.47% (Lera-Lopez, Gil & Billón, 2009). Another significant piece of research in this area has been conducted by Agudo, Pascual and Fombona restricted to Asturias, which establishes that values such as age, gender, living arrangements or place of residence are not determinant variables of ICT use for leisure purposes, although the level of studies does influence Internet use for information purpose and marital status determines the use of ICT for communicative purposes, highlighting single older women (Agudo, Pascual & Fombona, 2012).

In the field of literature on the relationship between Internet use and age, there are noteworthy works that deal not only with quantitative data on the use of the Internet but also with aspects related to the scope and intensity of Internet use by older people (Loges & Jung, 2001); others which address the differences between metropolitan and non-metropolitan areas (Mills & Whitacre, 2003); where it is seen that the difference between Internet users and non-users is linked to age and income, but not to gender or race (Rice & Katz, 2003); there is an examination of the patterns and determinants of the use of information technology in five countries: the United States, Sweden, Japan, South Korea and Singapore, establishing differences in access to ICTs by gender, age, education and income (Ono & Zavodny, 2007); or that evaluate differences in Internet use among people with high incomes and high educational levels compared to people with low income and low educational levels (Goldfarb & Prince, 2008). One of the important aspects related to the use of the Internet by older people may reflect a combination of different factors such as Internet usage skills, lower in the elderly (Demunter, 2005 ; Hargittai, 2003); the perceived needs and benefits of use, also lower among older people (OECD, 2007); as well as attitudes and lifestyles associated with different age groups (Chaudhuri & al., 2005). Other studies link age with gender, concluding that belonging to a particular generation is neither the only nor the most important predictor of gender differences in Internet use.

The life stage (measured as level of employment and marital status) influences the differences between men and women or had an independent effect for most of the activities studied, affecting aspects that we will deal with below (Helsper, 2010).

### **3. Analysis and results**

#### **3.1. Public initiatives for e-inclusion of older people**

The concern about the need to include older people in ICT has been taken up by various public authorities and international organizations leading to a significant number of media literacy initiatives for this sector of the population. Among some of the interesting projects we should mention the European Commission-funded intergenerational project called «Grandparents and grandsons» that is aimed at people over 55. It provides for the involvement of young students from vocational colleges and secondary schools with the role of «digital facilitators» who individually assist older people, guiding them in the use of Internet and e-mail <sup>1</sup>.

Also noteworthy in the European Community framework is the creation of a specific work area within the Digital Agenda adopted by the European Commission in May 2010 in Pillar 6 (Enhancing digital literacy, skills and inclusion). The Commission proposes a series of measures to promote access to digital technologies by the potentially disadvantaged, including among these older people (European Commission, 2011). As part of the e- Inclusion policies and specifically the «European i2010 initiative on e-inclusion», the Commission has set up a group of measures to improve e-Accessibility for older people. This proposal complements the initiative taken in 2007 called the «Ageing Well in the Information Society Action Plan». Particularly significant is the AAL Program to stimulate and develop technologies to help people to continue living in their home (allocated 600 million euros) or the funding of projects on older people and ICT in the Seventh Framework Programme for Research of the European Commission related to the promotion of independent living and inclusion.

One of the most ambitious studies on the issue is that called the «Social Impact of ICT» conducted under the auspices of the Directorate General for the Information Society of the European Commission, which has involved several European universities (European Commission, 2010). One of the main recommendations arising from this study is precisely that the e- Inclusion should not focus on access to ICT, but especially on operational skills and more advanced forms of digital literacy, offering support to those groups at risk being marginalized in this process, especially the elderly.

In Spain, public policy measures in relation to e- inclusion have been based on the access to web infrastructure, one of the main programs in this regard being the installation of public telecentre networks which according to Red.es are aimed at «facilitating and streamlining citizens' Internet access in rural and disadvantaged urban areas with difficult access to ICTs through telecentres and networked libraries». In Spain, the promotion of ICT has been pursued in three successive stages: infrastructure, promoting and boosting of the use of ICT and services.

The first phase would be to facilitate citizens' access to the technological equipment and devices necessary for their inclusion with regard to internet under

the best technical terms available by means of the state promoting the purchase of equipment and the hiring of Internet connection services with private operators.

Once this is completed, the second would be to seek to encourage the effective use of the same, through the training of potential users in the skills relevant to the handling of ICT and its possible uses. This would be a condition precedent to the third stage in this strategy, the development and promotion of products and services based on the Internet, from trade to electronic administration, via e-learning or other applications for social life (leisure, work, the economy, personal relationships, etc.).

Regarding the relationship of older people with ICT in these three phases, it is appropriate to emphasize the need to assess how far public policies have focused on the first of these, to some extent on the second without the expected results, which has prevented access to the third. However, there are initiatives such as the «i-Mayores» («i-Age») Program of the Government of La Rioja, the Digital Volunteer Program of the Xunta de Galicia or Seniors in the Web of the Zaragoza Town Council<sup>2</sup>, to name a few, which are a good example of public authorities' real intention to work on digital literacy.

### **3.2. Methodological proposals for the design of e- inclusion programs for the elderly**

All the studies cited above show the difficulty of integrating older people into active, advantageous and productive use of ICT. In this regard, the need to bridge the so-called digital divide for this population group without skills and abilities for the efficient use of ICT is essential, leading to the concept of e- inclusion, understood as the ability to access regularly and easily the various services and programs both 'online' and 'off-line' and to be able to use their skills linked to the specific needs of each user. The importance of digital inclusion has been put on record by the various documents of the World Summit on the Information Society held in Geneva in 2003 and Tunis in 2005 sponsored by the International Telecommunication Union, a UN agency, which defined inclusion as the «set of public policies related to the construction, administration, expansion, offering of content and local capacity building in the wired and wireless public digital networks in each country and in the entire region»<sup>3</sup>.

As a step towards digital inclusion, digital literacy, defined as «the ability to understand and use information in multiple formats from a wide range of sources when presented via computers, is essential. The concept of literacy goes beyond the simple ability to read; it has always meant the ability to read with meaning and understanding» (Gilster, 1997: 1). Critical thinking rather than technical competence is identified as the central element of digital literacy, and the critical evaluation of what is found on the web is emphasized, rather than the technical skills required to access it. Martin (2006: 19), meanwhile, defines digital literacy as «the awareness, attitude and ability of individuals to make an appropriate use of digital tools and the facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, construct new knowledge, express it through various media and to communicate with others, in the context of specific

life situations, in order to enable constructive social action; and reflect it through this process».

Theoretically there are three levels in the development of digital literacy: 1) digital competence, 2) digital use, and 3) digital transformation. Digital competence involves finding information on the Web, document preparation and processing, electronic communication, creation and manipulation of digital images, using spreadsheets, creating presentations, web publishing, creating and using databases, digital and interactive games, production of multimedia objects and the dominion of digital learning environments. Digital use involves the successful use of digital skills in life situations, the proper application of digital competence in the specific profession or in specific contexts, giving rise to a corpus of specific digital uses for an individual, group or organization. Digital transformation is to be able to make those digital applications that have been developed permit and enable innovation and creativity and encourage significant changes within the professional or knowledge areas, or in the personal or social context.

In this way one must understand the current interest in the usability of the technologies or in the Community initiative of «media literacy», which is not limited to the instrumental learning of the technologies, but rather would cover some of the powers ascribed to what is called «informational capital», which signifies the intellectual ability to filter and evaluate information, but also the motivation to actively search for it and the ability to apply it to social practices (Hamelink, 2000).

To address the media literacy of older people it is necessary to start from the basis of the complexity in dealing with aging as evidenced by several gerontologists (Binstock, Fishman & Johnson, 2006; Settersten, 2006) and the need to take into account the different aging characteristics. The traditional categories of age groups (50-64, 65-74 and 75 +) used for statistics and quantitative approaches are inadequate and according to these authors, it is necessary to employ the following groups when addressing an investigation of this matter: 1) an age more or less close to retirement age (early retirement period); 2) autonomous age as a pensioner (independent life period); 3) age with increasing handicaps (beginning of the period of dependent life); 4) age of dependent older people (dependent life period until the end of life).

Most of the projects on the digital divide, aging and e- inclusion have been linked to E -learning and few studies have focused on the needs of older people regarding new technologies and specifically on the usefulness of the Internet. One of the most comprehensive studies in this regard is that developed by a team led by Ala - Mutka regarding the potential of ICT in learning by older people to enable them to have an active life. Using this multipolar perspective, they advocate developing improved research tools to predict the future needs of those who are not yet elderly. These start from the need to redesign the content of training courses on the use of ICT to promote media literacy, and the need for financing R & D projects to develop new educational tools aimed at this group, involving the members of such group in their design (Ala - Mutka & al., 2008).

All this leads us to the proposal of a series of methodological approaches that should be considered when designing media literacy programs. The first of them

involves moving away from the inconsistency of the existence of training programs for older people on Internet and ICT use without an analysis of the personal and social circumstances of each of them. As Ferrés and Piscitelli indicate, «the in-depth study of a product is of little use if it is not accompanied or preceded by an in-depth study of the reactions of the person who interacts with this product. There is little point in analysing the meaning of a message if it is not accompanied by the analysis of the effect it has on the person facing it. And the in-depth study of what the person thinks about a product is of little use if it is not accompanied by an in-depth study of what he/she feels facing it» (Ferres & Piscitelli, 2012: 79). Especially significant is the proposal for dimensions and indicators of these authors, where they include - as an essential element to evaluate in media competence - transformations derived from neuroscience. Applying this new variable to the process of media literacy in the elderly, we consider that there is a need for a new approach with specific indicators for this sector of the population in accordance with the views expressed in this article.

The second methodological proposal involves the desirability of both public and private policies of media literacy allowing for a smooth transit between competence and digital use, but developing in particular the second of these, which involves use of the technological tools associated with an increased quality of life for older people. This is ultimately to enhance the so-called critical knowledge, which includes the understanding of media content and function, knowledge of the media and their regulation and the use made of it by users (Celot & Pérez - Tornero, 2009), for which it is necessary to know the specifics of this population group. Given this, we believe it necessary to address them, based on the significant differences between older people regarding their economic situation, social ties, personal interests or living environment. It seems clear that «different groups need different forms and levels of support if they want to use the Internet to learn» (Eynon & Helsper, 2010: 548).

The third methodological proposal states that the design of training programs should start with the selection of members of this social group organized according to the criteria specified above and a qualitative approach should be performed in relation to them, which would allow for the establishing of degrees of consensus of the group with respect to what should be, critical to the analysis because these become discourse scenarios regarding which the social and political institutions will take future operational decisions (Callejo, 2002).

#### **4. Discussion and conclusions**

The study of the digital divide cannot be limited to the analysis of Internet access (first digital divide), but must go a step further and become involved in the analysis and determination of the uses and intensity of Internet use (second digital divide), where concepts such as digital literacy, digital skills and digital inclusion acquire a greater impact.

The so-called information society measures should be applied, meaning as systems of indicators that allow one to analyse development and obtain an adequate view of the situation, at a particular time and in a specific social

environment. We must define new metrics directed not at studying the types of Internet use in older people, but the aspects that affect these uses.

In this connection, a prior qualitative approach is necessary for a better definition of ICT training programs for older people, because this approach «seeks to understand the meaning or nature of the experience of people when exploring substantive areas about which they know little or much, but seeking to obtain a new procedure. It explores the life of the people, the experiences lived, their behaviours, emotions and feelings, as well as organizational functioning, social movements, cultural phenomena» (Strauss & Corbin, 2002: 12). The focus group, understood as a discussion carefully designed to obtain perceptions on a specific area of interest allowing discursive reconstruction of the social group to which the participants belong which in turn distances them from other social groups. This is a group that is constructed and discursively remade in relation to its significant ideas. From these we obtain what must be, i.e. the norm of what is considered is the phenomenon of study to investigate (Callejo, 2002).

Therefore, a preliminary qualitative approach can influence what was established - for the design of digital literacy policies - by Cochrane and Atherton (1980), applied to the conditions for the putting into practice of actions to bridge the informational gap. Digital literacy programs must be designed by taking as their foundation (a) contextualism that allows one to adjust the materials to the cultural and social environment (with differentiation, in the case of older people, based not on age but on their dependency and economic situation, social relationships, personal interests and living environment), (b) incrementalism, which leads one to decide when to do each phase (linking training programs with the three aforementioned levels of digital literacy: competence, use and transformation), (c) motivation that allows evaluation of the receptiveness of the procedures and the process of absorption that provides criteria on what is the best way to access skills and abilities (for which one requires not just a quantitative analysis based on access rates, but rather the assessment of use as a successful employment of skills).

One of the objectives for digital literacy of older people and their inclusion in the information society should be to achieve a sufficient quality of life in old age, which may allow older persons to lead a fuller and more participatory life and can serve as essential instruments in promoting their civic participation (Culver & Jacobson, 2012). In this connection studies based on the above criteria would seek to develop training proposals that will link use, employment and enjoyment of the ICTs associated with quality of life including: health, functional abilities, economic conditions, social relationships, staying active, access to social services, quality in one's own home and in the immediate environment, satisfaction with one's own life and cultural and learning opportunities (Fernández Ballesteros, 1997). The key to bridging the digital divide for older people is not asking what is the best way to bring ICT to this population group, but rather what is the optimal way for older people to benefit from ICT to enhance their personal and social situation.

## Notes

- <sup>1</sup> Grandparents & Grandchildren Program ([www.geengee.eu/geengee](http://www.geengee.eu/geengee)) (13-12-2012).
- <sup>2</sup> «i-Mayores» Program developed by La Rioja Government ([www.conocimientoytecnologia.org/cibertecas/formacion/i\\_mayores/index.htm](http://www.conocimientoytecnologia.org/cibertecas/formacion/i_mayores/index.htm)), Voluntariado Dixital Program by Xunta de Galicia (<http://voluntariadodixital.xunta.es/es/51/el-proyecto>) or Mayores en la Red by Zaragoza City Council ([www.zaragoza.es/ciudad/sectores/mayores/mayores\\_red09.htm](http://www.zaragoza.es/ciudad/sectores/mayores/mayores_red09.htm)) (13-12-2012).
- <sup>3</sup> Geneva Declaration of Principles, Geneva Plan of Action, Tunis Commitment and Tunis Agenda for the Information Society (<https://www.itu.int/wsis/index-es.html>) (16-12-2012).

## References

- Abellán, A. & Ayala, A. (2012). Un perfil de las personas mayores en España 2012. Indicadores estadísticos básicos. Informe Portal Mayores nº 131, Madrid. ([www.imsersomayores.csic.es/estadisticas/indicadores/indicadoresgenerales/indicador esbasicos/2012/index.html](http://www.imsersomayores.csic.es/estadisticas/indicadores/indicadoresgenerales/indicador esbasicos/2012/index.html)) (12-12-2012).
- Agudo, S., Pascual, M.A. & Fombona, J. (2012). Usos de las herramientas digitales entre las personas mayores. *Comunicar*, 39, XX, 193-201. (DOI: 10.3916/C39-2012-03-10).
- Ala-Mutka, K., Malanowski, N., Punie, Y. & Cabrera, M. (2008). Active Ageing and the Potential of ICT for Learning. Institute for Prospective Technological Studies (IPTS) y European Commission. (<http://ftp.jrc.es/EURdoc/JRC45209.pdf>)(DOI: 10.2791/-33182) (22-10-2012).
- Barrio, E., Sancho, M.T., Pérez-Ortiz, L. & Abellán, A. (2009). Las personas mayores en España. Datos estadísticos estatales y por Comunidades Autónomas. Tomo I. ([www.imserso.es/InterPresent1/groups/imserso/documents/binario/infppmm2008vol1.pdf](http://www.imserso.es/InterPresent1/groups/imserso/documents/binario/infppmm2008vol1.pdf)) (21-01-2013).
- Binstock, R.H., Fishman, J.R. & Johnson, T.E. (2006). Anti-aging Medicine and Science: Social Implications. In R.H. Binstock. & L.K. George (Eds.), *Handbook of Aging and the Social Sciences* (pp. 434-453). New York: Academic Press.
- Callejo, J. (2002), Observación, entrevista y grupo de discusión: el silencio de tres prácticas de investigación. *Revista Española de Salud Pública*, 76 5, Oct. 2002. 409-422. (DOI: <http://dx.doi.org/10.1590/S1135-57272002000500004>).
- Carmona, M.M. & García, L. (2007). Difusión del uso de Internet en España: ¿Existe una brecha digital entre Comunidades Autónomas. *Revista de Estudios Regionales*, 80, 193-228.
- Castells, M. (2011). *La Galaxia Internet*. Barcelona: Plaza y Janés.
- Chaudhuri, A. & al. (2005). An Analysis of the Determinants of Internet Access. *Telecommunications Policy*, 29, 731-755. (DOI: <http://dx.doi.org/10.1016/j.tel-pol.2005.07.001>).
- Celot, P. & Pérez-Tornero, J.M. (2009). Study on Assessment Criteria for Media Literacy Levels - A Comprehensive View of the Concept of Media Literacy and an Understanding of How Media Literacy Level in Europe Should Be Assessed. Brussels: European Commission.
- Cochrane, G. & Atherton, P. (1980). The Cultural Appraisal of Efforts to Alleviate Information Inequity. *Journal of the American Society for Information Science*, 31, 283-292.
- Culver, S. & Jacobson, T. (2012). Alfabetización mediática como método para fomentar la participación cívica. *Comunicar*, 39, 73-80. (DOI: 10.3916/C39-2012-02-07).

- Demunter, C. (2005). The Digital Divide in Europe. *Statistics in Focus* 38. Luxemburg: Eurostat. ([http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-NP-05-038/EN/KS-NP-05-038-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-NP-05-038/EN/KS-NP-05-038-EN.PDF)) (09-09-2012).
- Demoussis, M. & Giannakopoulos, N. (2006). Facets of the Digital Divide in Europe: Determination and Extend of Internet Use. *Economics of Innovation and New Technology*, 15 (3), 235-246. (DOI: 10.1080/10438590500216016).
- European Commission (2010). Study on the Social Impact of ICT. ([http://ec.europa.eu/information\\_society/eeurope/i2010/docs/eda/social\\_impact\\_of\\_ict.pdf](http://ec.europa.eu/information_society/eeurope/i2010/docs/eda/social_impact_of_ict.pdf)) (23-12-2012)
- European Commission (2011). Digital Agenda Scoreboard 2011. ([http://ec.europa.eu/information\\_society/digital-agenda/scoreboard/docs/pillar/digitalliteracy.pdf](http://ec.europa.eu/information_society/digital-agenda/scoreboard/docs/pillar/digitalliteracy.pdf)) (13-12-2012).
- Eynon, R. & Helsper, E. (2011). Adults Learning Online: Digital Choice and/or Digital Exclusion? *New Media & Society*, 13, 4, 534-551. (<http://nms.sagepub.com/content/13/4/534>). (DOI: 10.1177/1461444810374789).
- Fernández-Ballesteros, R. (1997) Quality of Life: Concept and Assessment. In J. Adair, D. Belanger & K. Dion (Eds.), *Advances in Psychological Science*, vol. I: Social, Personal and Cultural Aspects. Montreal: Psychological Press.
- Ferrés, J. & Piscitelli, A. (2012). La competencia mediática: propuesta articulada de dimensiones e indicadores. *Comunicar*, 38, 75-82. (DOI: 10.3916/C38-2012-02-08).
- Goldfarb, A. & Prince, J. (2008). Internet adoption and usage patterns are different: Implications for the digital divide. *Information Economics and Policy*, 20, 1, 2-15. (DOI: <http://dx.doi.org/10.1016/j.infoecopol.2007.05.001>).
- Gilster, P. (1997). *Digital Literacy*. New York: John Wiley.
- Hamelink, C.J. (2000). *The Ethics of Cyberspace*. London: Sage.
- Hargittai, E. (2003). The Digital Divide and What to do about it. In D.C. Jones (Ed.), *New Economy Handbook* (pp. 812-839). San Diego: Academia Press.
- Helsper, E.J. (2010). Gendered Internet Use across Generations and Life Stages. *Communication Research*, 37, 3, 352-374 (DOI: 10.1177/0093650209356439).
- IMSERSO (2009). Informe 2008. Las personas mayores en España. Datos estadísticos estatales y por Comunidades Autónomas. Tomo I. ([www.imserso.es/InterPresent1/groups/imserso/documents/binario/infppmm2008vol1.pdf](http://www.imserso.es/InterPresent1/groups/imserso/documents/binario/infppmm2008vol1.pdf)) (21-01-2013)
- Instituto Nacional de Estadística (2012), Informe Anual 2011. ([www.ine.es/ss/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobheadervalue1=Content-Disposition&blobheadervalue1=attachment%3B+filename%3D-informe\\_anual\\_2010.pdf&blobkey=urldata&blobtable=MungoBlobs&blobwhere=-912%2F1009%2Finforme\\_anual\\_2010.pdf&ssbinary=true](http://www.ine.es/ss/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobheadervalue1=Content-Disposition&blobheadervalue1=attachment%3B+filename%3D-informe_anual_2010.pdf&blobkey=urldata&blobtable=MungoBlobs&blobwhere=-912%2F1009%2Finforme_anual_2010.pdf&ssbinary=true)) (21-01-2013)
- Instituto Nacional de Estadística (2011), Informe Anual 2010. ([www.ine.es/ss/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobheadervalue1=Content-Disposition&blobheadervalue1=attachment%3B+filename%3D-informe\\_anual\\_2010.pdf&blobkey=urldata&blobtable=MungoBlobs&blobwhere=-912%2F1009%2Finforme\\_anual\\_2010.pdf&ssbinary=true](http://www.ine.es/ss/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobheadervalue1=Content-Disposition&blobheadervalue1=attachment%3B+filename%3D-informe_anual_2010.pdf&blobkey=urldata&blobtable=MungoBlobs&blobwhere=-912%2F1009%2Finforme_anual_2010.pdf&ssbinary=true)) (21-01-2013)
- Jordana, J., Fernández, X., Sancho, D. & Welp, Y. (2005). Which Internet Policy? Assess in Regional initiatives in Spain. *The Information Society*, 21, 341-351. (DOI: 10.1080/01972240500253509).
- Lera-López, F., Gil, M. & Billón, M. (2009). El uso de Internet en España: Influencia de factores regionales y sociodemográficos. *Estudios Regionales*, 16, 93-115.
- Loges, W. & Jung, J.Y. (2001). Exploring the digital divide. Internet connectedness and age. *Communication Research*, 28, 4, 536-562. (DOI: 10.1177/009365001028-004007).
- Martin, A. (2006). Literacies for the Digital Age. In A. Martin, & D. Madigan (Eds.), *Digital Literacies for Learning*, (pp. 2-15). London: Facet.

- Mills, B. & Whitacre, B. (2003). Understanding the Non-Metropolitan-Metropolitan Digital Divide. *Growth and Change*, 34(2), 219-243.
- OCDE (2007). Working Party on Indicators for the Information Society. ([www.oecd.org/sti/sci-tech/38217340.pdf](http://www.oecd.org/sti/sci-tech/38217340.pdf)) (23-12-2012).
- OCDE (2011). Understanding the Digital Divide. ([www.oecd.org/dataoecd/38/57/18-88451.pdf](http://www.oecd.org/dataoecd/38/57/18-88451.pdf)) (23-12-2012).
- Ono, H. & Zavodny, M. (2007). Digital Inequality: A Five Country Comparison Using Microdata. *Social Science Research*, 36, 1135-1155. (DOI: 10.1006/j.ssresearch.2006.09.001).
- Rice, R.E. & Katz, J.E. (2003). Comparing Internet and Mobile Phone Usage: Digital Divides of Usage, Adoption, and Dropouts. *Telecommunications Policy*, 27, 597-623. (DOI: 10.1016/S0308-5961(03)00068-5).
- Settersten, R.A. (2006). Aging and the Life Course. In R.H. Binstock & L.K. George (Eds.), *Handbook of Aging and the Social Sciences* (pp. 3-19). New York: Academic Press.
- Strauss, A. & Corbin, J. (2002). *Bases de la investigación cualitativa. Técnicas y procedimientos para desarrollar la teoría fundamentada*. Bogotá: Contus-Editorial Universidad de Antioquía.
- Urueña, A. & al. (2011). *La Sociedad en Red 2010. Informe Anual*. ([www.ontsi.red.es/ontsi/es/estudios-informes/informe-anual-2010-edicion-2011](http://www.ontsi.red.es/ontsi/es/estudios-informes/informe-anual-2010-edicion-2011)) (14-01-2013).
- Vicente, M.R. & López, A.J. (2006). Patterns of ICT Diffusion across the European Union. *Economics Letter*, 93, 45-51.