



## Vulnerable People & ICT in Portugal

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The practice of more than 15 years

# FCT

Fundação para a Ciência e a Tecnologia  
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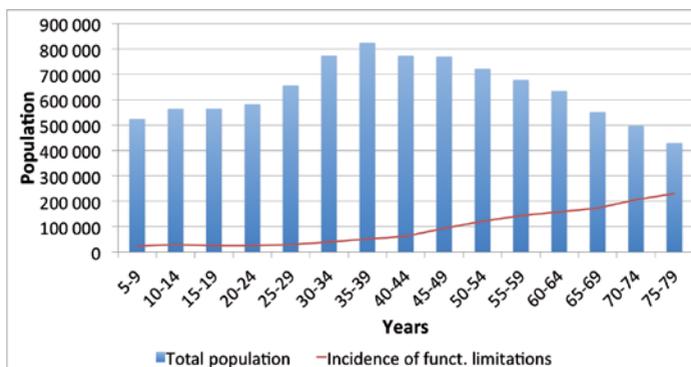


# ELECTRONIC ACCESSIBILITY TO PEOPLE WITH FUNCTIONAL LIMITATIONS

## The incidence of functional limitations in the Portuguese population

According to the 2011 Census, about 18% of the Portuguese population aged 5 or older, corresponding to 1,792,719 inhabitants, reported having limitations or even to be unable to perform certain daily activities involving visual, hearing, motor or cognitive functions. In the age group above 65 years, the same functional limitations affect more than 50% of the Portuguese population.

Figure 1: The incidence of functional limitations in the portuguese population by age. (Census 2011)



## Web Content of Central Public Administration in conformity with the W3C's WCAG

Portugal was the first Member State of the European Union to adopt the W3C's Web Content Accessibility Guidelines (WCAG 1.0), in August 1999. It was also during the Portuguese EU presidency that the WCAG arrived, for the first time, to the European action plans - the eEurope 2002, approved in 2000, is an example of this.

The latest, and most comprehensive, international accessibility review of the presence of public administrations on the Web was published in February 2011, covering all Member States of the UN. Using the European methodology "UWEM - Unified Web Evaluation Methodology", this evaluation considered in each country the sites of five ministries. In this comparative assessment of governments and public administrations' websites from 192 countries, Portugal occupies the 2nd position of the ranking, with a score of 97.6%, which corresponds to a level of fault of 2.4% only, according to the verification tests performed. Germany, which was the 1st of the ranking, has a score of 98.7%, with the Europe's average being of 75.9%.

Figure 2: Monitoring system of web accessibility is being used by the portuguese largest public bank - CGD - since 2009



In 2009, Portugal introduced a monitoring system for web accessibility at the time developed and provided by the Knowledge Society Agency and now by the National Funding Agency for Science, Research and Technology (FCT - Fundação para a Ciência e a Tecnologia), which, among other public bodies, is being used by the portuguese largest public bank - CGD - since late 2009. The certification label has a particular feature: it is a dynamic label, which notifies the entity of accessibility irregularities, if any, when editing new content.

The version 2.0 of the WCAG has been mandatory for websites of the Portuguese Government since February 2013.

## Solidarity Network



Project responsible to take several NGOs concerned with people with special needs (elderly and impaired) to the Internet, for over more than 10 years, since August 2001 to December 2011.

In 2011 the Solidarity Network involved 280 NGOs and offered:

- free broadband access point;
- use of email boxes for the target groups;
- free web hosting;
- free CMS template
- free personal domain name type '.org.pt'.

It also included videoconference connections between schools and hospitals allowing bedridden students to remotely attend classes and to keep in touch with family and friends.

## **Production of DAISY material in basic and secondary education**

The Ministry of Education and Science guiding its action by the principle that no student should be limited in his/her access to reading and written information by conditions of impairment or disability, has made a clear commitment to encouraging the production of digital materials in accessible formats for students with disabilities.

To this end, and in the context of a partnership between the Ministry of Education and Science, the Vodafone Foundation and the Porto Editora Publisher, textbooks and other books in DAISY (Digital Accessible Information System) format are being produced in Portugal since 2005, in a format with added functionalities for people who are visually impaired, dyslexia and even difficulties to control the upper limbs.

In 2013, the DAISY format was introduced as a support tool for national exams.

## **ATMs with interface accessible to the Visually Impaired since 1998**

Of the approximately 14,000 machines that make up the network of ATM of the Interbank Services Company (SIBS), over 95% have audio interface and enlarged characters for people with vision impairment. In 1998 these features were introduced in the four most frequently used operations: cash withdrawal, change PIN, loading electronic purses and electronic payment of services. More recently, the loading of electronic purse was replaced by the phone charging.

In 100% of the network it is possible to use the PIN keys to control all operations, eliminating the need to use the buttons surrounding the screen, usually positioned on a higher plane. Thus, shorter people or wheelchair users have easier access to the machines' operations.

## **ICT Resource Centres for Special Education**

The municipal and state school systems have the human and physical means to provide for the inclusion of pupils with Special Educational Needs.

The set up of a national network of ICT Resources Centres for Special Education derived from a long-lasting policy of inclusion of pupils with Special Educational Needs in the regular education. The current network consists of 25 Resources Centres spreaded around the country.

Figure 3: ICT Resources Centres for Special Education (CRTIC)

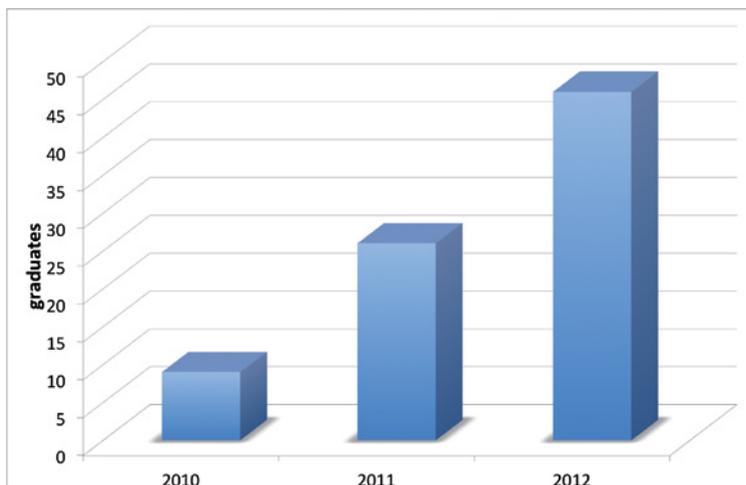


The aim of the ICT Resources Centres for Special Education is the evaluation of students with the purpose of selecting the appropriate technologies that better support their specific needs, information / training of teachers, professionals, education assistants and families about the problems associated with different domains of disabilities or impairments.

## The first university degree in Rehabilitation Engineering in Europe

Operating according to Bologna's principles since its creation in the academic year of 2007/08, the University of Trás-os-Montes e Alto Douro (UTAD) offers a 1st cycle university degree on Human Rehabilitation Engineering. The first students graduated in July 2010. Currently there are only two degrees of this kind in Europe. The second was created in 2009 at Coventry University (UK). In Portugal, this degree produced, up to now, 46 graduates; 23 of them pursued a Master's degree in the field also at UTAD.

**Figure 4: Total number of Graduates in Human Rehabilitation Engineering and Accessibility University Programme**



## **4000 titles of educational material for students with disabilities available online**

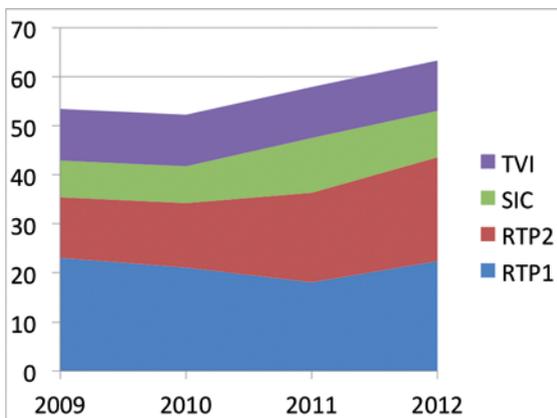
Online since 2007, the Open Library of Higher Education is the result of the acquis adapted by the 5 support services existing in higher education. The approximately 4000 titles currently available online can be found by students with special needs through the national wireless and authentication network of the higher education system in Portugal, regardless of location. The collection available is presented in full text, and a large part of it is available in format for Braille printing and / or audio. The Open Library of Higher Education can be found in: <http://baes.up.pt/>.

## **Increased use of Sign Language, Closed Caption and Audio description on Television**

Since 2003, the three main television operators in Portugal (the public service broadcaster RTP and two private channels SIC and TVI) have been providing accessibility solutions mostly for deaf and blind people through an agreement. In 2009, this area became regulated by the Government.

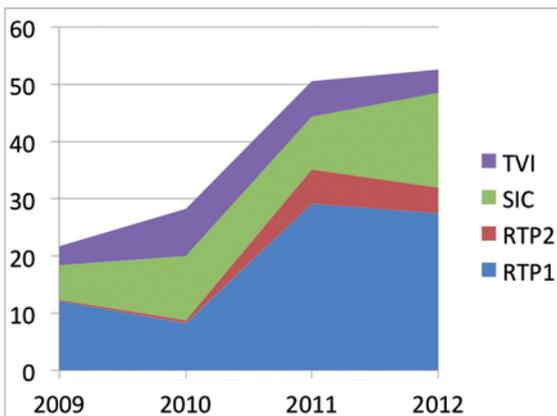
In the last four years, there was a significant increase in the transmitted hours of the television programmes with closed caption and with Portuguese Sign Language. In 2012, more than 63 hours per week of programmes with Portuguese Sign Language were transmitted and more than 52 hours of programmes with closed caption were also aired.

**Figure 5: Total amount of Sign Language broadcasted per week (in hours) by TV channel**



Source: Regulator Entity of the Social Communication (ERC) / 2013.  
Data reference: last week of September.

**Figure 6: Total amount of Closed Caption (via Teletext) broadcasted per week (in hours) by TV channel**



Source: Regulator Entity of the Social Communication (ERC) / 2013.  
Data reference: last week of September.

The public service broadcaster (RTP) has been pioneer with some good practices, namely:

- **Audio Description:** several programmes with this solution adequate for blind people are being transmitted frequently with an average of two hours per week.
- **Double Screen:** more recently, all live shows with Portuguese Sign Language are available on the Internet in two screens simultaneously, one screen of the programme and another with the sign language interpreter, which allows to see it in a larger format than on regular TV.
- **Big plan:** once a day, a programme is transmitted with the sign language interpreter in foreground and the programme itself in the background.

More information about these solutions in <http://www.rtp.pt/wportal/acessibilidades/>

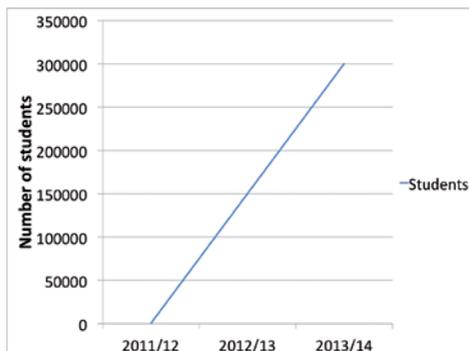
## INTERNET SAFETY AND VULNERABLE PEOPLE - BEST PRACTICES

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### Internet Safety in the Formal Curriculum

The Ministry of Education and Science implemented the “Learning Outcomes in Information and Communication Technologies (ICT)” regarding the contents for safe use of ICT and safe navigation on the Internet. As school is mandatory until the 12th grade, developing a document that defined what should be the kind of skills and knowledge that students should master at the end of each cycle of education was a very important step. This initiative allows students of all social backgrounds to have access to the same opportunities in mastering ICT. Starting in the school year of 2012/2013, specific contents on e-safety were made available as a core content within the curricula of the ICT classes for 7th graders (next year, 8th graders will also be covered). This is an important contribution to the safe use of the Internet and the decrease of children and youngster’s vulnerability online. This measure covers approximately 150,000 students of all schools in Portugal in 2012/2013.

**Figure 7: Coverage of Internet safety in the official curriculum in number of students**



## CHOICES Programme - Digital Inclusion Centres



CHOICES is a national Government Programme, established in 2001, promoted by the Presidency of the Council of Ministers and integrated in ACIDI - the High Commission for Immigration and Intercultural Dialogue, whose mission is to strengthen social cohesion by promoting the social inclusion of children and young people with low socioeconomic status, empowering them with skills that will allow them to strive for equal opportunities. The Choices Programme guarantees the funding of 110 social inclusion projects, many of which working with vulnerable communities located in areas with a strong presence of second generation immigrant and ethnic minorities.

With few exceptions, all of the local projects have a Digital Inclusion Centre where children, young people and adults are the focus of attention. In this space there is an investment in ICT training courses, sometimes by the association with companies such as Microsoft or Cisco. In general, the strategic lines of activity within the digital inclusion centres are: ICT Training, ICT courses, promotion of ICT competences and skills, informal activities of ICT exploration, homework and job searching, search for information and free leisure use.

In 2012, 89 of these local projects were involved in online safety activities, developing more than 200 activities that covered 5300 people in situation of info-exclusion and vulnerability.

### Partnerships with NGOs

The Portuguese Safer Internet Centre has vulnerable children and people as target publics. Some strategies are taking place at a national level to develop partnerships with Non Governmental Organisations (NGOs) in order to reach these publics locally on a daily bases. It is envisaged to have a set of trainers to work locally with these institutions, so that the populations which they serve have access to e-safety awareness sessions. It is expected to substantially contribute to a safer and better use of the Internet, as well as to a better capacity of being a part of the digital world and benefiting from the opportunities it provides.

# DIGITAL LITERACY AND ACCESS TO ICTS

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## ICT and the elderly

The 2011 Census data reflect the fast pace of the penetration of broadband Internet connection in private households. The access and the use of information technologies is a consolidated reality but not closed yet and with a strong dynamic evolution.

Evidence shows that the intensity of ICT usage is directly related to the educational attainment level and inversely related to age. In Portugal, around 2 million people are over 65 years old and a low education attainment level (19% of the population). This group is quite vulnerable in what concerns digital literacy, a problem that inclusion policies have attempted to soften over the last 15 years, concentrating on informal training actions and learning activities developed and adapted specifically for this population group.

As it has been evidenced by national and international researchers [1] [2], working with the elderly seem to first require the recasting of common sense representations about the elderly as “unable” to learn how to use ICT or “uninterested” by these matters. This work requires a prior preparation for adaptation of content and of technological learning purposes targeting the concrete needs of the elderly as enhanced by Rita Brito’s research upon a community of 22 senior people involved in learning ICT courses promoted in a Lisbon area:

*«The elderly respondents use the computer at home (64%) and consider the Internet a relevant service, because 59% uses it. However, a part of the sample (27%) does not use computer at home, especially due to financial difficulties in acquiring equipment. All respondents who reported not having computer, would like to have one and also access the Internet, revealing a large interest in their use».*

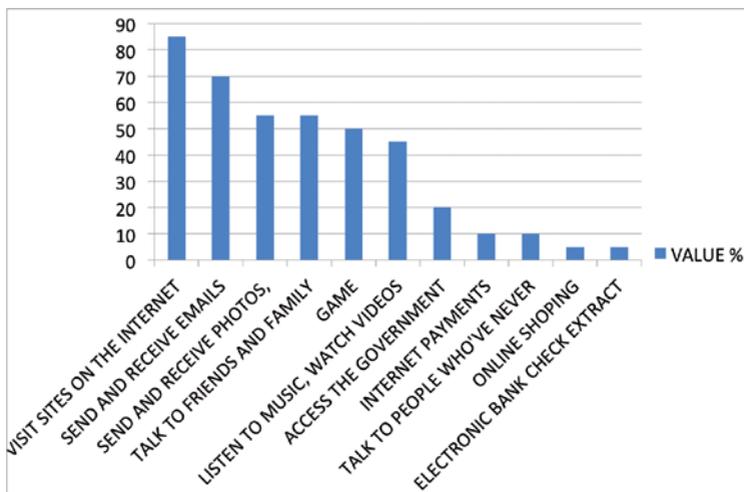
*«The ICT activities preferred by older people are visiting sites (85%) and also performing social activities, including sending and receiving email (70%), attaching photos, videos or music (55%), and talking to family and friends in the chat (55%). In addition to these activities, also gaming (50%), listening to music or watching video and programmes on the Internet (45%), among other activities detailed in the chart [below]»:*

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<sup>1</sup> Eurostat Data for 2012 point this “negative” evidence: 90.9% of the elderly population in Portugal (65 years and over) presents low formal education levels below 2, in international classification by type of education (ISCED). The level 2 corresponds to «pre-primary education, primary or even a first cycle of secondary education».

<sup>2</sup> See: Rita Brito (2012): «the use of the Internet and computer for senior citizens»; paper presented at the II nd International ICT and education Congress, Lisbon, nov-Dec.;

Figure 8: ICT activities preferred by older people



source: In Rita Brito (2012): «The use of Internet and computer by senior citizens»; paper presented at the 2nd International ICT and education Congress, Lisbon, nov-dec.

«Considering the scope of the use of the Internet, the elderly prefer to use applications where they can socialise, such as sending email (70%), Facebook® (60%), Skype® (40%) or Messenger® (20%). Effectively, the social part is a very important factor in the use of computer by older persons, enabling them to the intergenerational approach, and preventing isolation (...). The computer is an attractive tool for the elderly, as the majority of the sample (64%) said, regardless of their skills, they love using computer and the Internet and feel averagely prepared to learn new things about these (55%). However, despite this, they do not consider the computer and the Internet an indispensable tool of daily life, with only 36% stated as being very important/useful».

«Asked about the experience of (...) ICT classes, 68% of the elderly are of the opinion that these contributed to increase the satisfaction and the quality of computer use, and 59% acknowledge that it would be important to get more training in order to use this tool with more satisfaction and quality and consider important to participate in a group that provides this type of knowledge (86%)».

In Portugal, much of the efforts for the digital inclusion of the elderly have been achieved through the means of municipal telecentres, public libraries, civil parishes programmes, local development associations and Social Assistance (Misericórdias) and through Senior Universities, spread over the country, who play a key role in the process of qualifying the elderly for ICT usage. Most of the ICT facilitators employed by these organisations are highly qualified staff in a wide range of scientific areas (education, social and cultural animation, engineering, technologies...), most of them are very young and with a strong commitment to social service.

## Open and free ICT training sessions all over the country in *Espaços Internet* / Telecentres Network

The Telecentre Network is a nationwide community created in 2006 by the Knowledge Society Agency (UMIC). The network comprises several types of entities with social concerns - Local Authorities, Parish Councils, Public Libraries, Welfare Institutions, Digital Inclusion Centres, Culture and Recreation Associations, etc. - under the same purpose: to foster the widespread use of ICT among the Portuguese population (an essential requirement for the development of a Knowledge Society), in order to allow the full exercise of the citizenship in an increasingly technological and to bridge the digital divide between Portugal and the European average.

The organisations involved (1,172 units in the year 2010) assign facilities where the general public can freely use computers with Internet access and/or have ICT training sessions provided by e-facilitators. To leverage this massification concern, some e-inclusion initiatives were developed within this framework and one that stood strongly attached to the telecentres was the DCB (i.e., “Diploma in ICT Basic Skills”), conceived to recognise e-skills acquired in informal and non-formal learning contexts by any citizen.

The institutional diversity of this network allows a greater proximity to citizens and to their specific ICT training needs (e.g. the unemployed people, the elderly people, the children with low socioeconomic status).

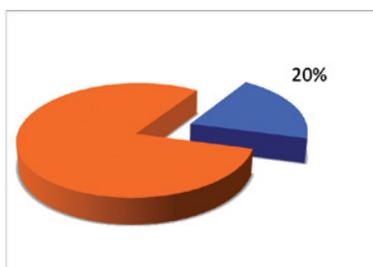
## Municipal libraries: e-Inclusion agents of national coverage

The important role of public libraries to foster digital literacy and digital inclusion is recognised by the European Commission. In Portugal the public libraries network has a very significant territorial expression: 301 libraries distributed by 308 municipalities, which means a national coverage of 97.7%.

Their natural vocation, to spread knowledge and foster literacy among all types of public have been boosted in 2004 with the “Internet Spaces” Initiative, which allowed libraries to be enhanced with IT infrastructures.

In the existing 301 municipal libraries, around 20% of the reading rooms have been equipped with assistive technologies, most of them for the visually impaired.

**Figure 9: Reading rooms of Libraries with assistive technologies**



## ICT in remote rural areas: raising awareness among elderly people

Some Municipalities develop social inclusion programmes with ICT, providing access to Internet and computers to people living in small and very small villages. Such good practice may be illustrated by the programme developed by the Municipality of Aguiar da Beira where villages and small towns over the territory are regularly visited by a van equipped with nine computers with free Internet access (called “New Technologies Mobile Unit”), whose staff also provide technical help to parish councils in maintaining their wireless network along with ICT training sessions (fostering thus informal training and certification of basic ICT skills in remote areas).

This project was born from a partnership between the Municipality and the community group “Santa Casa da Misericórdia de Aguiar da Beira” and aims to raise awareness among elderly people towards the e-skills acquisition.

## Recognition of digital skills acquired in informal and Non-formal learning contexts



Born in 2001, the “Diploma in ICT Basic Skills” (DCB) is a lifelong learning initiative conceived as a tool to fight info-exclusion, enhancing citizenship and promoting social cohesion, through the recognition of e-skills developed in informal and non-formal learning frameworks.

The exam for the DCB's award can be requested by citizens of any age in accredited centres (by FCT) available nationwide, which aims to assess three main basic e-skills:

- To write, print and save a text file
- To research information in the Internet
- To receive and send an e-mail

So far, 671,995 diplomas have been issued by: Institutions of Higher and Secondary Education, Public Libraries, Welfare Institutions, Non Governmental Organisations, Municipalities, e-Inclusion Centres (Choices Programme).

Most of these centres also belong to the Telecentre Network and so it's not unusual to have e-inclusion local programs that integrate ICT training sessions and the certification given by the DCB, but that this relies on each centre's strategy.

The dissemination of this initiative is currently made at a local and municipal level through popular communication channels such as cultural agendas. The level of digital skills recognition required by DCB has shown to be more attractive to people with low formal qualifications, the elderly or otherwise very young students from 1st to 2nd cycle of education.



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# Vulnerable People & ICT in Portugal

The practice of more than 15 years

Social inequalities can be resolved by means of ICTs that grant vulnerable groups and individuals access to political, economic, scientific and cultural activities of society.

The practice of more than 15 years in Portugal is an example of this.

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