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## INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FOR INCLUSION

### Portugal

#### 1. Policy Frameworks

This information was provided by Special Needs Education Services, Directorate-General for Education (DGE), Ministry of Education and Science (MEC).

##### **1.1 Policies that impact on ICT for inclusion in the compulsory school sector**

Legislation produced by the MEC, namely Decree-Law no. 3/2008, of 7 January, defines the scope and target population for special needs, as well as the respective support measures. The DGE, through its Special Needs Education (SNE) Services is responsible for the implementation and monitoring of the measures.

Among the support measures, a network of 25 ICT Resource Centres for Special Needs (CRTIC) was created to assess requirements for assistive technology among pupils with special educational needs (SEN). Consequently, the MEC has financed assistive technology. Freeware and open-source software for special needs have been promoted by CRTIC, as well as teacher training on specific products.

Policies on ICT for inclusion in compulsory schooling are stated in the current National Strategy for Disability (ENDEF), which contains measures within the scope of education.

The Technological Plan/Digital Agenda (2015) includes educational measures: namely, to promote the use of next-generation networks by the educational community with services and contents, using the infrastructure and equipment already available in public schools. The most relevant measures include:

- creation of a learning management system;
- virtual spaces for parents, pupils and teachers on School Portal;
- virtual notebook; disciplinary exercises;
- cyber school for Portuguese language;
- online enrolment and certification;
- virtual maths tutor.

Please see: [http://www.unic.pt/images/stories/noticias/PWP\\_AgendaDigital2015.pdf](http://www.unic.pt/images/stories/noticias/PWP_AgendaDigital2015.pdf) and <http://www.agendadigital.gov.pt/default.aspx?site=agenda-digital>

The Educational Projects Services/Educational Resources and Technology Unit (DGE, <http://www.erte.dge.mec.pt/index.php?section=1>) responsible for ICT projects for schools. Several initiatives regarding infrastructure have been undertaken, including one in partnership with the Foundation for National Scientific Computing (FCCN) to guarantee connectivity in all schools. Other recent initiatives have involved providing computers to pupils and teachers ('e-escola' and 'e-escolinha'), School Portal ('Portal das Escolas') and other ICT European projects.

The Web Accessibilities Programme ('Programa Acesso') has promoted projects on e-accessibility and has disseminated the Web Content Accessibility Guidelines 2.0. At present, it is under the MEC and closer partnership will be pursued to promote e-access in schools.



## **1.2 Current policy on ICT for inclusion in relation to the main project themes**

### *1.2 (i) ICT as a tool for promoting equity in educational opportunities.*

All the initiatives mentioned above were directed at all schools, universally. It is important that schools are equipped and connected, so that all pupils may access new media, improve their learning and acquire ICT skills.

### *1.2 (ii) Access to appropriate ICTs as an entitlement*

The ICT Resource Centres for Special Needs provide advice and recommend appropriate technology to meet pupils' specific needs.

A general law, involving the Ministry of Health and the Ministry of Employment and Social Security, grants assistive products to people with disabilities; this initiative is co-ordinated by the National Rehabilitation Institute, while the Ministry of Education is also linked with these entities.

### *1.2 (iii) Training of educational staff in the use of general and specialist ICTs*

The network of teacher training centres (about 90 associations of schools) has provided in-service training on ICT use for teachers in general. Educational Projects Services/Educational Resources and Technology Unit (DGE) have also promoted several accredited ICT courses. SNE Services at the DGE has also promoted teacher training on inclusion and technology.

Peer training in assistive technology has been guaranteed by the ICT Resource Centres for Special Needs and some courses on assistive technology have been organised in partnership with the teacher training centres and assistive technology companies.

Higher education institutions are responsible for pre-service training and the tendency is to include ICT training in the respective curricula.

### *1.2 (iv) The promotion of ICT research and development requiring a multi-stakeholder approach*

ICT research has been promoted by higher education and technology companies. With regards to special needs and disability, some higher education institutions have created inclusion units (Resource Centre for Digital Inclusion, Polytechnic Institute of Leiria; Digital Inclusive Support Unit, Polytechnic Institute of Porto; Centre for Rehabilitation Engineering in Information and Communication Technologies, University of Trás-os-Montes and Alto Douro).

ICT Resource Centres have also developed case studies on the use of assistive technology they have recommended to pupils they have assessed.

Some higher education institutions have developed projects, such as:

- the MagicEye product from the Polytechnic Institute of Guarda, which is marketed by Portugal Telecom Special Solutions: <http://youtu.be/7S0MeOiw3a0>;
- an electric vehicle for children with reduced mobility and motor skills, produced by a Portuguese company working with Spanish researchers: <http://youtu.be/35uhhUQdkJQ>

Portugal Telecom has sponsored other inclusion initiatives, as has Vodafone, in partnership with the MEC (video-conferencing systems for pupils with disabilities; EasyReader for textbooks, etc.).

Many studies have been carried out as part of master's degrees about special needs and ICT, for example:

- *ICT and Pupils with SEN: perceptions of SNE teachers in the area of Viseu* (2012, Catholic University of Portugal): <http://repositorio.ucp.pt/handle/10400.14/8722>
- *ICT in the Education of Pupils with SEN: a training programme for schools* (2012, University of Aveiro): <http://ria.ua.pt/handle/10773/9198>
- *Case Study: Use of ICT by pupils with trisomy 21* (2011, Polytechnic Institute of Castelo Branco): <http://repositorio.ipcb.pt/handle/10400.11/1168>
- *ICT in inclusive classrooms, in primary schools* (2011, Lisbon Polytechnic Institute): <http://repositorio.ipl.pt/handle/10400.21/1205>
- *Case Study: ICT integration in the learning of children with SEN* (2010, University of Trás-os-Montes and Alto Douro): <http://repositorio.utad.pt/handle/10348/2082>

### *1.2 (v) Data collection and monitoring in the use of ICT in inclusion*

ICT in inclusion has been monitored every year as part of the activity of ICT Resource Centres for Special Needs in schools. The Centres present annual activity reports that are analysed and a global report is produced with all relevant quantitative and qualitative data.

Statistics on education are the responsibility of the Ministry of Education's central department of education statistics, including general ICT statistics in schools: <http://estatisticas.gepe.min-edu.pt/cat.jsp?id=224&edit=false>

### **1.3 Strategic plans for implementing policy on ICT for inclusion**

ICT plans and policies are centralised by the MEC. Schools are granted a certain level of autonomy, but are financially dependent on the state budget.

Some responsibilities are delegated to municipalities, such as contracting assistant staff, pupils' transport, meals, school buildings and equipment.

Municipalities support connectivity maintenance in primary schools.

Schools have autonomy to create a culture of inclusion within schools.

### **1.4 Monitoring and evaluation of policies or strategic plans relating to ICT for inclusion**

A study on the implementation of SNE legislation (Decree-Law no. 3/2008) was produced in 2010; the Ministry of Education established a protocol with a higher education institution and an American consultant: <http://dge.mec.pt/educacaoespecial/index.php?s=directorio&pid=6>

Most of the measures stated in the National Strategy for Disability (<http://www.inr.pt/content/1/1487/estrategia-nacional-para-deficiencia-edef>) and in legislation on pupils with SEN have been implemented. However, there is a shortage of human, financial and equipment resources.

Pupils with SEN lack computers as well as assistive technology; approximately half of the assistive technology recommended every year has been financed by the Ministry. Staff contracts have also been reduced for financial reasons.

### **1.5 Main policy developments in ICT for Inclusion that have taken place since 2000**

Important projects and programmes have taken place since 1986, while the latest Technological Plan invested significant financial resources in infrastructure and contents for all schools between 2008 and 2011: <http://www.pte.gov.pt/pte/EN/index.htm>

The developments include the following:

- connectivity in schools: 100% of primary and secondary schools (12<sup>th</sup> grade) have broadband internet connections (64 Mbps);
- there is LAN and wireless in every classroom;
- pupils, teachers and adult learners have been provided with laptops with broadband connections at low prices through the New Opportunities Programme. By 2011, over 1,300,000 computers had been delivered;
- more than 600,000 personal computers for primary school pupils have been delivered, at low cost or no cost;
- technological kit: 1 computer for every 2 pupils; 1 projector per classroom; 1 interactive whiteboard for every 3 classrooms;
- technical support centres for schools through contracts with companies;
- School Portal with validated pedagogical contents;
- the Web Accessibilities Programme that has been carried out by 'Programa Acesso'.

### **1.6 Current issues in relation to ICT for Inclusion**

Technology issues regarding maintenance and upgrade will be on-going and the trend will be towards regression, on account of the financial crisis.

All necessary assistive technology should be granted to pupils with SEN that may require it, as well as computers and other common equipment.

### **1.7 Important short and long-term developments in ICT for Inclusion**

These include:

- global coverage of schools in the use of mobile technology (laptops/notebooks/netbooks/tablets) and wireless extended to the whole school;
- making internet connections in schools robust and reliable;
- the use of technology by all teachers and pupils as a regular tool for learning.

## **2. Country Practice**

This information was provided by Special Needs Education Services, Directorate-General for Education, Ministry of Education and Science (MEC).

### **2.1 Main developments in practice in ICT for Inclusion since 2000 in relation to the main project themes**

#### **2.1 (i) ICT as a tool for promoting equity in educational opportunities**

The main developments in the last decade have been towards a generalised use of ICT in learning. Curricula have been revised to integrate ICT. ICT use is not allowed for assessment/exams, except in the case of pupils with SEN.

Adapted materials have been provided to pupils with SEN, namely school books in DAISY format and embossed and Braille material.

#### **2.1 (ii) Access to appropriate ICTs as an entitlement**

Since 2009, the MEC has financed part of the assistive technology recommended by the ICT Resource Centres for Special Needs.



Computers were provided under the 'e-escola' and 'e-escolinha' programmes until 2011.

### *2.1 (iii) Training of educational staff in the use of general and specialist ICT*

ICT training has been offered by teacher training centres.

The ICT Resource Centres for Special Needs have provided training in assistive technology on a peer-training basis and in partnership with teacher training centres and specialist companies.

However, teachers complain about the lack of training and teacher training centres struggle due to the lack of financial resources.

### *2.1 (iv) The promotion of ICT research and development requiring a multi-stakeholder approach*

Usually all parties are involved in research projects that develop and test products.

Some products enter the market, such as the examples mentioned in the first section of this survey. MagicKey, developed by a polytechnic institute, is now sold by Portugal Telecom Special Solutions at a reduced price; another company involved in research on the vehicle for kids with reduced mobility is also selling it; another company has been developing inclusive software.

### *2.1 (v) Data collection and monitoring in the use of ICT for inclusion*

Monitoring processes are necessary every year to identify pupils with SEN and their respective requirements. Specific measures and activities should be addressed to the respective target public, almost on a personal basis.

The network of ICT Resource Centres for Special Needs is connected via the DGE's Moodle community and also promotes local communities with SNE teachers, informing and training them.

## **2.2 ICT to promote learning in inclusive settings**

### *2.2 (i) Country-based networks to support teachers in using ICT to promote inclusive learning*

As previously mentioned, there is a network of ICT Resource Centres for Special Needs and there are also projects targeted at ICT teachers who may carry out joint initiatives with SNE teachers at school level.

### *2.2 (ii) Initial teacher education in using ICT to promote inclusive learning*

Many initial teacher training courses include ICT skills and the younger generation of teachers are natural users of digital tools.

### *2.2 (iii) Practical support in classrooms to help teachers' use of ICT to promote inclusive learning*

ICT teachers have traditionally provided support in schools. Peer-to-peer support is the norm.

### *2.2 (iv) Important information sources about new developments, hardware and software products and ideas for using ICT to promote learning in inclusive settings*

The ICT Resource Centres' Moodle community is a means of disseminating developments in hardware, software and inclusive learning strategies. Repositories of resources on special needs issues and technology are shared.



The MEC promotes many initiatives and runs projects to promote the use of ICT in schools. Schools also promote initiatives on their own and apply to European projects, such as Comenius, eTwinning, etc.

At present, SNE Services (DGE/MEC) is involved in a European project SENnet, coordinated by European Schoolnet.

The European Agency's reports and publications are also disseminated by SNE Services to the respective target public.

### ***2.3 Current obstacles to using ICT to promote learning in inclusive settings***

Traditional classroom organisation and pedagogy is still prevalent. More open approaches based on problem solving and inquiry-based learning – in short, more pupil-centred approaches – making extensive use of digital media, should be made widespread.

Too much focus on exams and rankings is not conducive to more personalised learning.

Classes are growing bigger and teachers are becoming overburdened.

In many cases, there are also shortcomings in adequate equipment and broadband.

### ***2.4 Factors that support using ICT to promote learning in inclusive settings***

Pupils enjoy using digital media that can enhance their schoolwork and give them a sense of accomplishment and sharing with others. Teachers should be the main promoters.

Pupils with SEN can overcome their limitations with the correct educational measures, use of appropriate assistive technology and/or adapted materials.

Every pupil should have a laptop with an internet connection to allow them to access digital resources and collaborate with their peers.

### ***2.5 Perceived short and long-term developments that will have an impact on ICT for Inclusion practice***

Universal design for learning should become mainstream. In the meantime, special arrangements must be guaranteed for those who require special and extra assistance.