



INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FOR INCLUSION

Denmark

1. Policy Frameworks

This information was provided by Lone Ring (Special Consultant).

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

The Danish Government has a strategy on ICT in the compulsory school sector. The overall strategy also impacts upon ICT for inclusion. The main political goal for compulsory education is to challenge the pupils and students to become as proficient as possible. The government strategy on ICT in the compulsory school sector and the initiatives in the strategy support the main political goal.

The aim of the government's strategy on ICT in the compulsory school sector is to increase and qualify the use of ICT as an integrated part of education. The initiatives in the government strategy are:

- supporting the purchase of digital learning resources in order to develop a sustainable market and a supply of high-quality digital learning resources;
- access to efficient and sufficient infrastructure for all pupils and students;
- research and pilot projects on ICT-based learning;
- transparent goals for the use of ICT and digital learning resources.

The strategy's focus is the qualified use of ICT, while infrastructure and hardware are its foundation. The initiatives are implemented in collaboration with the organisation for the Danish municipalities: Local Government Denmark (LGD). As part of a political agreement, LGD is responsible for implementing the initiative concerning infrastructure. Furthermore the municipalities co-finance the purchase of digital learning resources.

The strategy impacts upon ICT for inclusion primarily through the increased use of ICT and digital learning resources and research into ICT-based learning. Initial research and experiences reveal that ICT has potential for increased inclusion and differentiated teaching. The government will gain further knowledge in the area as implementation of the initiatives progresses.

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.

The increased use of ICT for inclusion will contribute to promoting equity in educational opportunities.

1.2 (ii) Access to appropriate ICTs as an entitlement

No information is available on this issue.

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

One of the initiatives in the government's strategy on ICT is research and pilot projects on ICT-based learning. Through this initiative, the government will also gain knowledge on the use of ICT by educational staff.



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

No information is available on this issue.

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

No information is available on this issue.

1.3 Strategic plans for implementing policy on ICT for inclusion

One of the initiatives in the government's strategy on ICT is to support the purchase of digital learning resources in the municipalities which support increasing the use of digital learning resources. The municipalities are important change agents in implementing the government's strategy on ICT.

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

Initial research and preliminary results suggest that ICT has a positive effect on inclusion, motivation and increased use of differentiated teaching.

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

No information is available on this issue.

1.6 Current issues in relation to ICT for Inclusion

The central issues in relation to ICT for inclusion include, among other things:

- insufficient knowledge on ICT for inclusion and ICT in general;
- the development of high-quality digital learning resources;
- training of educational staff in the use of ICT.

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

No information is available on this issue.

2. Country Practice

This information was provided by Erik Arendal (Special Consultant, Aarhus University; previously employed by the Danish Centre for Assistive Technology and the National Board of Social Services).

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

Accessibility and the use of assistive technology are high-priority issues when it comes to assessments, tests and exams for pupils with reading and writing difficulties in Denmark.

Compulsory national tests are digital and in many subjects they are fully compatible with reading and writing technologies. Primary and lower secondary school pupils who use these technologies because of reading and writing difficulties are allowed to use them during tests and exams. Pupils in need of assistive technology can use it for their exit exams from the Danish Folkeskole, once they have received permission from the school principal. The Ministry of Education also provides digital test materials for exams.



Since 2000, access to curriculum materials for pupils with reading and writing difficulties or dyslexia has been extended considerably. Section 17 of the Danish Copyright Act permits the use and distribution of published works specifically intended for these pupils, and lots of educational materials are scanned and used for teaching. A database has been developed for primary and lower secondary schools, from where pupils can download digital materials such as teaching books, fiction and other relevant materials.

However, only pupils included in Section 17 of the Copyright Act are entitled to use these materials; therefore, a larger target group which could potentially benefit from them is being excluded. Aside from this, not all materials are made available in digital formats. Nevertheless, Denmark is undergoing rapid development in terms of digital learning resources and educational materials. The Ministry of Children and Education has earmarked DKK 500 million to purchase digital learning resources for primary and lower secondary schools and will make financial support available in the future if, amongst other requirements, the focus is on accessibility to learning resources. Standard digital learning resources are therefore expected to be available for assistive technology aimed at differentiated teaching and inclusion of pupils with reading and writing difficulties.

Access to appropriate assistive technology for pupils with reading and writing difficulties is becoming increasingly important to support equal participation in education (please see also 2.1 ii).

2.1 (ii) Access to appropriate ICTs as an entitlement

During recent years, the use of a so-called assistive technology package has become increasingly popular amongst pupils in primary and lower secondary schools. The package contains both hardware, in the form of a laptop and perhaps a scanner, and software, e.g. text-to-speech, word prediction and OCR software. Funding for assistive technology packages for pupils with dyslexia have increased considerably since 2000 and they have become extremely popular. The package was originally targeted only at dyslexic pupils, but is now gradually replacing the use of more general reading and writing technologies aimed at a larger group of pupils and potentially at all pupils in primary and lower secondary education. From being a means of individual support, it is turning into a learning resource for all pupils, as the focus is still on differentiated teaching and the inclusion of pupils with reading and writing difficulties. Reading and writing technologies are being made available to primary and lower secondary education pupils in an increasing number of municipalities and schools. Reading and writing technologies are expected to become a means of support for all pupils, in line with the increasing use of digital learning resources.

Financial support for assistive technology for young and adult dyslexics has increased considerably during the past ten years. This, together with the increased use of assistive technology in primary and lower secondary schools, means that the Danish market for software development is extremely competitive, and the quality of the software has improved greatly during this period.

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

The increased use of assistive technology by pupils with reading and writing difficulties means that teachers and consultants are increasingly educated and trained within this field. Reading consultants and advisors, special teachers and, more recently, teachers with special education as their main subject receive additional education and training in assistive technology. However, the use of ICT for inclusion is not a high priority in itself, since ICT is part of the general education course. ICT for inclusion of pupils with reading and writing difficulties is mainly disseminated through projects and professionals with a specific interest in this subject. Local and school-based projects serve as platforms for



enhancing professional expertise through courses and experience exchange amongst teachers.

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

The development of new software for people with reading and writing difficulties has mainly involved teachers and professional consultants. Professionals have joined developers in the process, and user associations such as the Danish Dyslexia Association have also been involved. Schools, municipalities and the state are the main buyers of hardware and software for pupils with special needs, and vendors have mainly focussed their attention on this group of customers. The Danish market is limited by a special and restricted linguistic area, so a lot of software is translated from foreign languages and adapted to Danish conditions.

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

Information and documentation about assistive technology are made available by various means in Denmark. Teachers and practitioners in schools rely on education and training of professionals to keep them informed and updated. Web portals are also important tools for information sharing about research and other results and for the exchange of experiences between teachers and other professionals. The 'SkoleKom' national portal is especially useful for this purpose. The database that has been developed for primary and lower secondary schools, and from where pupils can download digital materials (see section 2.1 i) is a very useful tool for the dissemination of innovative knowledge amongst teachers who work with pupils with reading and writing difficulties.

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

The 'SkoleKom' national portal is the largest and most common web-based network tool. Not only does it feature topics on inclusion, but also on education and the use of IT services in general.

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

No information is available on this issue.

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

No information is available on this issue.

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

No information is available on this issue.

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

No information is available on this issue.

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

The three most important factors that support the use of ICT to promote learning for pupils with reading and writing difficulties are:



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1. easy access for all to appropriate and pedagogically suitable reading and writing technologies – both for computers and for tablets;
 2. easy access for all to digital and accessible learning resources and educational materials to support reading and writing technologies;
 3. education and in-service training of teachers and other professionals, with a specific focus on the use of ICT for differentiated teaching and inclusion.

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

No information is available on this issue.