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## INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

### IN EDUCATION FOR PEOPLE WITH DISABILITIES

#### Practice Review – Executive Summary

The UNESCO Institute for Information Technologies in Education (UNESCO IITE) and the European Agency for Development in Special Needs Education agreed in 2010 to collaborate on a joint project to develop a Review of Innovative Practice – a report presenting concrete examples of practice of the use of Information and Communication Technology (ICT) with people with disabilities in different educational contexts and settings.

The agreed goal of presenting different examples of practice was not to describe or examine the technological aspects of ICT usage in education. Rather the goal was to highlight the different possibilities and potential benefits of applying ICT in varied and potentially innovative ways in very different global educational contexts and settings for people with disabilities.

In order to achieve this goal, it was important that examples from a range of geographical and educational situations were considered. It was also necessary to ensure that examples from ‘non-traditional’ educational settings were collected as far as possible. Within the consideration of possible examples, innovation was considered as the use of ‘everyday’ technology in unexpected or untried ways within a particular educational setting or context, as well as the use of newly developed technologies for education.

The aims of this Practice Review therefore are to use the collected examples in order to:

- Highlight a range of different purposes for using ICT in education for people with disabilities;
- Identify possible key messages for policy and practice in this area.

In addition, the presentation of different types of examples of ICT being applied in new, or unexpected ways in this field is also intended to act as a source of inspiration to practitioners and policy makers in considering possible innovative ways ICT can be used in education for people with disabilities.

The Practice Review does not aim to present highly technical information relating to ICT and its application in education. Decision makers and educators working in different educational situations with people with disabilities are considered to be the main target audience for this Practice Review. They are the professionals who are considered most likely to find concrete information on the effective utilisation of ICT most useful to their own work.

The examples of practice cover different parameters of ICT application:

- *Countries and geographical regions* in order to show that ICT can be applied effectively in very different economic and ICT infrastructure situations;
- *Sectors of education* school, vocational, higher and even adult education;
- *Types of ICT equipment* and their application in educational settings, from simple multimedia tools (such as CDs or DVDs) to the development of new research based software or applications.



The Practice Review report presents a description of the work undertaken followed by a review of information on international policy for ICT and people with disabilities. Each one of the four thematic areas of the Practice Review is discussed in a separate Chapter presenting three detailed Case Studies as well as various Vignettes as further exemplars of key issues emerging within the thematic area.

*(i) Supporting personal access to information and knowledge* – Case Studies from Estonia, Finland and Grenada and Vignettes from Belgium, Estonia, Germany, Spain, UK – England and Uruguay.

*(ii) Supporting learning and teaching situations* – Case Studies from Belgium, Portugal and Syria and Vignettes from Belarus, Belgium, Denmark, Estonia, Russia, Slovenia and Sweden.

*(iii) Supporting personal communication and interaction* – Case Studies from France, Ireland, UK (England) and Vignettes from: Belarus, Belgium, Finland, Portugal and an International example.

*(iv) Supporting access to educational administrative procedures* – Case Studies from Belarus, Moldova and an International example Vignettes from Austria, Belgium, Estonia and Ireland.

## **Emerging Recommendations**

An analysis of the information presented in the review has led to a series of recommendations in line with **five key propositions identified within the 2006 UN Convention on the Rights of Persons with Disabilities** in relation to the use of ICTs in education. These recommendations are as follows:

### **1. ICTs to promote equity in educational opportunities**

1.1 – ICT in education for people with disabilities should not be seen as an end in itself – it should be seen as a means, or a tool for increasing effective access to and meaningful participation in educational opportunities. This access and participation should have the ultimate goal of increasing life chances and opportunities for people with disabilities.

1.2 – The use of ICT in education for people with disabilities needs to be geared towards supporting inclusive education. ICTs should be an integral tool for inclusion and not be something ‘separate’ to the work of all teachers/educational professionals. The goal for ICT within inclusive settings is that it should be inclusive in terms of its use as well as its purpose.

1.3 – The availability of ICT for people with disabilities must be viewed within a continuum of educational opportunities across lifelong learning. ICTs that support an individual person’s learning must be available to them in any formal or informal learning situation they wish to engage in.

1.4 – The implementation of ICT in education for people with disabilities must take a systemic approach. This means that at the level of the individual learner, an organisation or the wider educational system levels, a range of inter-connected factors need to be considered and addressed. Key amongst these factors are issues surrounding access to ICT, training of professionals, the development of new approaches and tools as well as the policy framework supporting the use of ICT in education for people with disabilities.

### **2. Access to appropriate ICTs**

2.1 – Promoting positive attitudes towards the use of ICTs within different stakeholders groups may be as important as providing learners with a range of specialist ICTs. The



attitudes teachers in particular hold in relation to using ICT are crucial. Positive attitudes can be fostered by the provision of appropriate training, support, resources and practical experiences in using ICTs. Teachers require access to such experiences to help them develop the necessary positive attitudes to using ICT effectively to support the needs of learners with disabilities.

2.2 – A consideration of the possible ‘synergy’ of combined barriers to learning should to be considered in determining the appropriateness of ICTs. Many learners with disabilities experience multiple disadvantages in terms of learning needs, social or geographic isolation and/or poverty. Within some contexts it should be recognised that gender can also be a disadvantaging factor. The need to identify and address possible combinations of factors has to be considered in identifying appropriate ICTs in education for people with disabilities.

2.3 – Access to appropriate ICTs in different lifelong learning contexts – including home based situations – often requires input from professionals coming from different fields. These professionals can provide necessary insights into different aspects of using ICT to support the learning of people with disabilities. Ensuring that the work of diverse professionals is effective, co-operation and interdisciplinary working is required. This involves coordination between individuals, services and often policies for different sectors of work. It also involves flexible approaches to financing for ICT, with possibilities for local level decision making on expenditure linked to locally identified needs.

2.4 – All learners with disabilities are involved in and have opportunities to influence the decisions made regarding their access to ICT. This means that all stakeholders agree upon the aim of people with disabilities having autonomy in using ICT. Stakeholders must then implement a range of strategies and tools to support the realisation of this aim.

### **3. Training of educational staff**

3.1 – Teacher education should provide information that makes clear the theory and rationale for using ICTs to support learning of people with disabilities, as well as practical experiences in implementing ICT tools and approaches. This means all teachers should be prepared to use ICTs to support learners with special needs in their initial training and then have access to further, in-service training later in their careers in order to develop the knowledge and skills to enhance their practice in this area.

3.2 – Teacher education for all teachers – mainstream and specialist – should take a developmental, competency approach. Competences have the components of attitudes and beliefs, as well as knowledge and skills. Teacher competences need to cover general skills in education and pedagogy, as well as inclusive education approaches. Embedded within such training, there needs to be a consideration of the use of ICT in education generally, as well as the use of ICT for learners with disabilities specifically.

3.3 – There is a need for more careful examination of successful approaches to this combined, embedded model of teacher education. Research and evaluation from the perspective of teacher educators as well as teachers working in a variety of educational contexts should be conducted in order to inform further teacher education programmes in this field.

### **4. Promotion of ICT research and development**

4.1 – The end users of technology – people with disabilities and their families and caregivers – must be involved in its design and development. This is true for major technological research projects, as well as simple adaptations and adjustments to



existing technology. ‘User involved’ as well as user centred development can lead to new tools and approaches that are useful for people without disabilities as well those users with specific needs.

4.2 – There is a need to support networks involving all stakeholders in the use of ICT in education for people with disabilities. Facilitating contact and sharing of experiences between different stakeholder groups – particularly designers of ICT, people with disabilities and the educational staff that support them – is critical for developments and new innovation.

4.3 – Both research and development initiatives as well as action plans for making technological tools available in education and training need to operate within a coherent and well co-ordinated policy and provision infrastructure. Crucially, all policy directing research and development should have clearly stated clear goals for the maximisation of possible benefits of ICT usage in education of people with disabilities.

## 5. Data collection and monitoring

5.1 – ICT in education for people with disabilities must be considered a ‘trans-sectoral’ field. There are many different sectors of expertise and information that need to be taken into account in developing, implementing and evaluating policies: stakeholder input and views; education and specifically the education of people with disabilities in inclusive settings; ICT in education and the Information Society generally; the training of teachers and educators. Coherent cross-sectoral policies must be based on a consideration of all these sources of inter-related information.

5.2 – In order to avoid confusion between stakeholders, a shared language for the use of ICT in education for people with disabilities is needed. It is important all stakeholders are clear about the terminology they are using and have shared understandings of key concepts and issues. Crucially, this shared language should be one that is easily accessible for the end users of ICT – that is learners with disabilities – via whatever communication mode or system they personally use.

5.3 – All countries need to track the implementation of their policies for ICT and education, both generally and specifically in relation to the education of people with disabilities. There are pressures – from the CRPD as well as other national and international sources – on policy makers to demonstrate how such policies are leading towards greater educational inclusion and increased life chances of people with disabilities. This results in the need for the systematic collection of qualitative and quantitative information that answers key questions in this area and can be used longitudinally to map developments. Within this context the development of indicators that will act as signposts for tracking progress in the use of ICT in education for people with disabilities may be necessary.

## Final Key Messages

An examination of all the information within the Practice Review leads to **a number of key messages that may further inform the three strands of action identified within the UNESCO-IITE work programme** on ‘ICTs in education for persons with disabilities: education policy, capacity building and best practices’:

***Increasing access to ICT infrastructure*** – the examples presented in this Review clearly illustrate the potential impact of ICT in education of people with disabilities; ICT can be an invaluable tool in the education of people with disabilities and so increasing access to ICT infrastructure remains a target.



However, it should be clear that this target is not an end in itself – the main purpose of providing ICT in education for people with disabilities must be kept in mind, and that is promoting both educational inclusion and wider social/societal inclusion. The ultimate goal of increasing access to ICTs that support learning must be increasing the short and long-term life chances and quality of life of people with disabilities.

For this goal to be achieved, it is essential that there are integrated policies across education, information technology and the social sectors that have common goals for meeting the needs of people with disabilities in relation to ICT access and usage.

**Promoting basic ICT literacy** – familiarity with and the ability to effectively use ICT for a range of purposes remains an objective for many groups of disadvantaged learners, including many people with disabilities. In reflecting upon the various examples presented in the Review, a concept that appears to be critical in promoting basic ICT literacy is ‘Design for All’. Design for All – or alternatively universal design – involves the design of products, environments, programmes and services, etc. that are usable by everyone to the greatest extent possible, without the need for adaptations.

This concept applies to the design and development of new ICT tools, but it is also a concept that must underpin the pedagogy of using ICT in education for people with disabilities. Teaching and learning approaches should also be as far as possible accessible to all people – this is an underpinning principle of inclusive education – at all stages of lifelong learning.

A clear message can be highlighted here: more flexible and especially user centred ICTs have potential benefits not just for people with disabilities – specifically developed tools and approaches that are useful for people without disabilities as well. Increasing access to ICT infrastructure benefits all citizens, not just those with particular needs. In summary, in relation to ICT, what is good for people with disabilities is often good for all ICT users; in addition, educationally, what is good for learners with different forms of disability and special educational needs is good for all learners.

**Supporting international co-operation and practice exchange** – Once again it should be emphasised that international co-operation and sharing information on examples of practice is not an end in itself. The purpose of such activities is clearly identified by the OECD (2006). Case Studies can: *inform debate, guide innovative practice, provide reference and help frame ... policies.* (p. 16)

In various ways, many of the examples in the Review suggest that increasing opportunities for international co-operation and sharing of information would be beneficial; the usefulness of illustrating ICT initiatives at different levels – organisational, regional, national, even international – is clear. However, there remains work to be done to co-ordinate this information and make it available to all relevant stakeholders in ICT in education for people with disabilities in clear, coherent and unbiased, non-judgemental ways.

In conclusion, it can be seen that these messages highlight a number of possible areas of development work for the use of ICT in education for people with disabilities. A further, over-arching area for future work is in relation to **monitoring the implementation of policy and practice developments in this area**. Both in relation to the UN Convention (2006) as well as regional (i.e. European) and national level policy, there is a need for more detailed information linked to monitoring of qualitative and quantitative indicators and benchmarks on ICT in education for people with disabilities. A number of the recommendations presented in the previous section highlight areas that require further consideration as well as careful monitoring over the short and long-term. Such



monitoring information is necessary to further to inform the work of policy makers and practitioners.

Several of the key messages here describe principles for effective education of learners with disabilities that are applicable across all of the elements of policy and practice that combine within an inclusive education approach. It can be argued that there are two main implications of this:

1. There is the need for policy makers and practitioners to not only share their experiences within their specific disciplines, but also ensure key messages are disseminated with professionals from other disciplines. In parallel to this, professionals need to be open to looking to these other disciplines for information and inspiration and using key messages as inspiration for their own work.
2. There is a need for more interdisciplinary investigations to be conducted in order to identify and disseminate key cross-sectoral messages that underpin the education of people with disabilities generally.

The work of international organisations such as UNESCO IITE and the European Agency for Development in Special Needs Education can be crucial in facilitating these areas. In particular, these organisations can effectively work to ensure that the key principles for ICT in education of people with disabilities are disseminated to a wide-ranging audience of policy makers and educators working in different educational situations, so that this information can be a source of inspiration for their work in education for people with disabilities.