



ICTs IN EDUCATION FOR PEOPLE WITH DISABILITIES

Review of innovative practice

UNESCO Institute for Information Technologies in Education

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FOREWORD

How Information and Communication Technology (ICT) can be used in the most effective ways for education of people with disabilities is currently high on the political agendas of all countries, particularly those who have ratified the United Nations Convention on the Rights of Person with Disabilities (CRPD, 2006). A number of the general principles included in the CRPD are directly linked to UNESCO's mandate. As the United Nations' leading agency for education, UNESCO is at the forefront of activities aimed at promoting quality education and lifelong learning for all society members, including disabled persons.

The educational needs of people with disabilities are extremely diverse. As with all other members of society, people with disabilities must acquire the knowledge and skills required for the community in which they live. However, they face additional demands (often referred to as special educational needs) caused by functional limitations that impact in different ways upon their ability as learners to access standard educational methods of instruction. These limitations often prevent educational progress and achievement.

In this context, the application of ICT is very important as it plays an essential role in supporting high quality education for learners with disabilities. The advantages of ICT usage in the teaching and learning process are based on the possibilities it offers for alternative means of communication, providing access to educational resources in a more convenient way and to enhancing learning motivation. By overcoming obstacles of time and space, supplementing vital human functioning and supporting the development of crucial skills, these technologies contribute to the increased effectiveness of educational processes by enabling people with disabilities to actively participate in meaningful learning experiences.

With this in mind, the UNESCO Institute for Information Technology in Education (UNESCO IITE) and the European Agency for Development in Special Needs Education (the Agency) agreed in 2010 to combine their expertise in this field and collaborate on the development of a *Review of innovative practice*. The intention for the review was to build on findings from past work – notably UNESCO IITE's activities in this area and in particular *ICTs in Education for People with Special Needs: Specialized Training Course* (2006) and the Agency's ICT in Special Needs Education project related work.

The goal of this Review therefore is to present concrete examples of the use of ICT in different educational settings in order to show the real possibilities of ICT as a tool for supporting learning and ultimately inclusion for people with disabilities.

The development of this review has been guided to a large degree by the UN Convention on the Rights of Persons with Disabilities (2006). The use of the term 'people with disabilities' is understood in this Review within the terms of the Convention:

Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others. (p. 5)

The principles and requirements impacting upon the use of ICT that are outlined within the Convention have been used as the basis for exploring a range of policy documents and literature in this area. In addition, the examples collected for this Review have been selected to illustrate how ICT in education for people with disabilities can be used effectively and in innovative ways in relation to four thematic areas that emerge from a consideration of the key messages within the UN Convention. These relate to ICT to support: personal access to information and knowledge, learning and teaching situations, personal communication and interaction, and finally, access to educational administrative procedures for people with disabilities.

This Review presents 12 Case Studies and over 20 Vignettes (short focussed illustrations of practice) linked to the four themes. These examples come from 18 different countries, covering Arabic speaking countries, Latin America, Commonwealth of Independent States (CIS) and European Countries.

On behalf of our respective organisations we wish to gratefully acknowledge the input of the many professionals from across the globe that submitted example information used as the basis for the Case Studies and Vignettes presented in Chapters 3 to 6 of this report. Without their contributions this Review would not have been possible and we wish to thank them for their contributions to this work.

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1. INTRODUCTION

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. In particular, the Review was targeted at considering examples of practice that can be considered to be ‘innovative’ within the specific educational setting and wider societal context they were situated within.

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.

In order to collect such potentially wide-ranging information, the international networks of contacts of UNESCO-IITE and the Agency were engaged to gather information on examples that may not usually be disseminated or published in such a widespread way. A very clear intention in framing the work was to use the Review of Innovative Practice – referred to from now on as the ‘Practice Review’ – as an opportunity for sharing messages from different stakeholders working in the field of ICT in education for people with disabilities who may not usually have the possibility to share their work internationally.

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.

So as to put the Practice Review report into a clear context, the next section will provide a rationale for the approach taken as well as an outline of the methodology used for collecting examples and then an overview of the structure of the Practice Review itself.

1.1 Rationale for the approach taken

The Practice Review is a project initiated by UNESCO IITE under its programme of work examining the use of ICT in education of people with disabilities:

http://iite.unesco.org/policy_and_research/icts_in_special_needs/

This programme of various activities works within the UNESCO broad view of the concept of inclusive education, and aims to support policy dialogue and the development of national e-inclusive strategies aimed at:

- Increasing the access of disadvantaged and excluded groups to ICT infrastructure;
- Promoting basic ICT literacy and vocational training programmes targeted specifically at the most vulnerable segments of society;
- Supporting regional, sub-regional and inter-country co-operation and good practice exchange on the extension of ICT usage to excluded groups.

UNESCO IITE identifies the target group for its activities as *'policy and decision-makers who are responsible for, or involved in the development of educational policies and plans; experts in teacher training and vocational development; and last but not least teachers themselves.'*

In line with UNESCO IITE's general target audiences, the main target group for the Practice Review are policy and decision-makers, teacher educators and teaching staff involved in the education of people with disabilities in all educational sectors: schools, vocational education, higher and adult education.

The current Practice Review builds upon past UNESCO IITE activities in this area most notably: ICTs in Education for People with Special Needs – Specialized Training Course (2006). In this document it is stated that: 'The key ways in which ICTs can support educational opportunities for people with SEN are as follows:

- Identifying the preliminary level of personal development (experiences and skills), that is to say the starting point of a student;
- Assisting in personal development by shaping new skills or updating existing ones;
- Improving the access to information;
- Overcoming geographical or social isolation via communication support and networks;
- Improving the image/perception of an area by enhancing motivation and awareness regarding the ICT benefits in SNE.' (p. 29)

The Practice Review builds upon this previous work and is focussed upon developing a conceptual overview for understanding the potential application of ICT as a tool in education for learners with disabilities. As a framework for exploring relevant concepts, four possible areas of application of ICT were identified from within the United Nations Convention on the Rights of Persons with Disabilities (2006) by UNESCO IITE to be covered in the Practice Review:

(i) Supporting personal access to information and knowledge – ICT as a tool for improving a learner's access to information and knowledge in formal and non-formal learning situations.

(ii) Supporting learning and teaching situations – ICT for pedagogical, didactic uses, assisting in personal, learning development and shaping new skills; ICT as a tool for teachers to support learning.

(iii) Supporting personal communication and interaction – ICT as a tool for alternative/augmentative communication to replace or supplement personal communication barriers; ICT as a tool for overcoming social and/or geographical isolation.

(iv) Supporting access to educational administrative procedures – ICT as a tool for accessing administrative procedures in organisations; ICT as a tool for administrators to improve their services for learners with disabilities.

It should be pointed out here that the four thematic areas of this Practice Review were identified in order to provide overall messages about use of ICT in education for people with disabilities. These thematic areas should not in reality be viewed in isolation, but rather be seen as interacting and mutually supportive. It can be argued that at times an example presented in one thematic area could have been used to illustrate other areas as well. In effect, the four thematic areas indicate a framework of suggested purposes of using ICT in education for people with disabilities that is a useful starting point for illustrating key messages for policy makers and practitioners.

UNESCO IITE and the European Agency for Development in Special Needs Education (the Agency) agreed upon a collaborative approach to collecting and then analysing examples of practice in these four areas in order to highlight conclusions and recommendations for policy and practice in the area. This approach is described in the next section.

1.2 Identifying relevant examples of practice

There is a substantial body of literature exploring the usefulness of examples of practice, or Case Studies to inform further practice and/or policy (for example, see Yin, 1994). Benbasat et al. (1987) suggest that case approaches are particularly appropriate for practice based problems where the experiences of the actors are important and the context of the action is critical. There are also many exemplars of Case Study or 'practice review' approaches being used by international organisations; one such exemplar is the OECD Improving School Leadership activity (2006–2008), which includes an innovative case study strand. Within this project write up it is suggested that case study methodology can *inform debate, guide innovative practice, provide reference and help frame school leadership policies in OECD countries*. (p. 16)

However, far fewer pieces of research work discuss the criteria used to select examples subsequently presented in projects. One exception to this is a study conducted by UNESCO, Paris and the European Agency for Development in Special Needs Education called Inclusive Education in Action (IEA).

The IEA (<http://www.inclusive-education-in-action.org/iea/>) project aimed to provide a resource for international and European policy makers working to develop equity and equal opportunities within education systems globally. The ultimate goal of the IEA project was to bridge the 'policy to practice gap' by exemplifying the suggested actions.

Within the project a comprehensive literature review was undertaken to provide background information on the development of a framework of criteria to support the selection of examples (Donnelly, 2010, available from: <http://www.inclusion-in-action.org/iea>).

A consideration of the literature found relating to possible criteria for selecting examples resulted in a compilation of the most commonly used criteria in the studies reviewed, three of which are of particular relevance within the context of this current Practice Review:

1. Relevance and usefulness: information is provided about what key issues for consideration the material exemplifies.
2. Diversity: of geographic location, policy contexts, settings and learners is addressed.
3. Clarity of information: the following are clearly described: rationale (supported by theory) to explain significance of work (in context); issue to be addressed, aims and planned outcomes; methods, procedures and management of change; outcomes, feedback and reflections; sufficient information must be included for readers to know if/how the content of the study might apply to their own situation.

These criteria are underpinned by a number of key concepts that were important in conducting the Practice Review work:

- The criteria are essentially *content free and are applicable to any study using examples of practice*;
- The criteria are *focussed upon the 'meta' issue of quality of information being made available* about the example being presented and not the perceived quality of the example being discussed within that information;
- The criteria can be used for *the purpose of selecting examples that clearly illustrate specific topics* and not used to select examples based on their perceived quality per se.

In summary, the criteria for selecting examples of practice have been used in order to find 'good examples of practice' with the emphasis on the quality of information provided, rather than examples of 'good practice' where judgements regarding the quality of the practice being described have to be made.

The final 'meta' criteria used for selecting the Case Studies focussed upon the availability of clear information relating to the following aspects of the initiative being described:

- A description of the initiative including the aims and objectives of the initiative;
- Information on the learners and educators involved;
- Contextual information indicating the importance of using ICT within the context of the initiative;
- Participants' reflections and evaluation of the initiative.

The application of 'meta', information related criteria can be seen to remove unhelpful 'comparisons' between examples of work as crucially, judgements were made regarding the selection or rejection of an example for the Practice Review based upon the relevance and quality of the information made available to the reviewers and not on any perceptions of quality of the work presented in example itself.

Within the Practice Review the examples sought and collected were considered 'innovative examples of ICT practice' relating to one of the four thematic areas for the Practice Review and not examples of 'good' practice. Such an approach was considered to be more appropriate and balanced in nature and also less open to question from third parties.

In taking such an approach, it was clear that the most appropriate title for the collaborative work on the Practice Review was Review of Innovative Practice and not the more subjective title of *Best Practice Review*.

1.3 Methodology

In order to collect relevant examples of practice relating to these four thematic areas, a two-stage approach to information collection was used within the Practice Review. Each phase is outlined in the following sections.

1.3.1 Phase 1 work

In Phase 1, key professionals working in the field were asked to send outline information briefly describing an example they would like to be considered for the Practice Review. This outline information was collected via a short survey.

The survey was developed using the rationale outlined in section 1.1 collaboratively by staff from UNESCO IITE and the Agency.

The survey was circulated as widely as possible via the UNESCO IITE and Agency websites and also via direct mailings to a broad range of Agency and UNESCO IITE key contacts working in the field.

The coverage of this initial call for examples included: the Arabic speaking countries; Asia, Australasia and the Pacific Rim countries; Commonwealth of Independent States (CIS) countries and the Baltic States; European countries; North and Latin America.

In total there were over 40 replies to the Phase 1 survey covering:

- 7 examples from CIS countries (including Belarus, Moldova, Russia and Ukraine);
- 1 example from an Arab State (Syria);
- 3 examples from Latin America and the Caribbean (Brazil, Grenada and Uruguay);
- 33 examples from Europe including Austria, Belgium (specifically the Flemish speaking community), Denmark, Estonia, Finland, France, Germany, Ireland, Portugal, Slovenia, Spain, Sweden, United Kingdom (specifically England).
- 2 international examples covering different countries and even continents.

All the outline examples received were then considered for balance in terms of focus, illustrating the four thematic areas, geographical spread and coverage of different educational situations.

12 of the most relevant examples were then identified and agreed upon as the focus for the more detailed information collection in Phase 2 work.

1.3.2 Phase 2 work

In Phase 2, more detailed information relating to the 12 selected practice examples was collected via a detailed questionnaire.

Again, staff from UNESCO IITE and the Agency developed the questionnaire collaboratively. Four different versions of the questionnaire were produced – each containing general information required in order to draft Case Study Overviews, but each also focussing upon specific questions relating to one of the four thematic areas for the overall Practice Review.

In addition, a decision was taken to collate the brief information provided in a number of the phase 1 replies relating to other interesting examples of practice as a further source of information within the final Practice Review. Such focussed and specific information is presented in the form of 'Vignettes' to further illustrate the four thematic areas of the Practice Review alongside the Selected Case Studies.

The contributions of the educational professionals submitting both Case Study and Vignette information for the Practice Review must be gratefully acknowledged. These professionals from across the globe (see section *Contributors*) provided the necessary information and were also engaged in a thorough procedure of checking drafts of material to be used in the Review.

1.3.3 Case Studies and Vignettes

It is not possible within the remit of this Practice Review for the selected examples to cover all potential applications of ICT in education for people with disabilities. However, as far as possible, 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* covering 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 Case Studies and Vignettes listed below were agreed upon for the different thematic areas of the Practice Review. In some cases there are multiple examples from the same country where the specific examples were considered to be useful in illustrating the thematic areas for the Practice Review.

- (i) *Supporting personal access to information and knowledge* – Case Studies from Estonia, Finland and Grenada and Vignettes from Belgium, Estonia, Germany, Spain, United Kingdom and Uruguay.
- (ii) *Supporting learning and teaching situations* – Case Studies from Belgium, Portugal and Syria and Vignettes from Belarus, Belgium, Denmark, Estonia, Russia and Sweden.
- (iii) *Supporting personal communication and interaction* – Case Studies from France, Ireland, United Kingdom and Vignettes from Belarus, Belgium, Finland, Portugal, Slovenia 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.

Essentially the information presented in the examples is descriptive; it covers what has been done in the initiative concerned, why and possible reflections on the impact of the work. This information is in line with the aim of the Practice Review to present information demonstrating different possibilities of using ICT in education for people with disabilities in different ways and contexts.

1.4 Structure of the Practice Review

The Practice Review report is organised as follows:

Chapter 2 provides an overview of information on international policy for ICT and people with disabilities. This review of policy literature puts the Case Studies and Vignettes presented in the Practice Review into a clear policy context. The information covered is structured around the four thematic areas of the Practice Review.

Chapters 3, 4, 5 and 6 each cover one of the four thematic areas of the Practice Review. Each chapter presents three detailed Case Studies as well as various Vignettes as further exemplars of key issues emerging within the thematic area. The Case Study and Vignette write-ups are essentially descriptive – they have a consistent format, with the same structure and key information being presented – the aim being to illustrate different practice rather than analyse it.

The examples are linked via a narrative that attempts to highlight emerging issues and themes in relation to the thematic area of each of the chapters.

Chapter 7 presents an analysis of the critical factors apparent across the various examples. The aim of this chapter is to outline a conceptual framework for using ICT in education for people with disabilities by outlining the key messages and recommendations for policy makers and practitioners. These recommendations identify possible areas of development work for the use of ICT in education for people with disabilities.

The Conclusions consist of final messages emerging from the Practice Review in the form of a series of underpinning principles for policy and practice.

The Practice Review also includes full contact details of Contributors of the Case Study and Vignette information, as well as a Glossary of key terms and References for all citations given in the texts.