Education and Culture DG

Education and Training

Compendium of Good Practice Cases of e-learning

Cases selected by Members of the ICT Cluster

Danish Technological Institute (ed.)
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Contents

Introductory remarks on the Compendium

The cases collected in this Compendium are examples of good practice in e-learning in Europe. They were all selected by countries participating in the ICT Cluster and Peer Learning Activities managed by Directorate General Education and Culture (DG EAC). In total, 43 cases were selected and described.

A template was used for all the cases in order to obtain a comprehensive overview of good-practice cases in Europe. This makes it easier to compare them and discuss learning points between the different countries[1]. The Danish Technological Institute (DTI) edited all the cases in order to make them more comparable, but format differences remain and this should be borne in mind when reading the cases.

This Compendium updates the cases presented in the reports 'Implementation of the Education and Training 2010 Work Programme — Report on Mapping of Recommendations' and the 'Progress Report' produced by DG EAC in 2004. It was produced by DTI under the framework contract to support peer learning activities in the context of Education and Training 2010.

The above Recommendations and Progress Report grouped the initiatives according to the four recommendations for policy and practice proposed by the 2003 Report of the ICT Working Group.

The Compendium uses a number of themes cross-cutting the various cases in order to present the good-practice examples. The advantage of this approach is that it focuses the discussion on learning issues which can be debated against the backdrop of national contexts. Therefore, this approach also provides an opportunity to discuss which practices can be transferred between countries and which may be specific to a national context. It also facilitates discussion on whether there are any preconditions for making an e-learning initiative successful.

The cases were presented to the ICT Cluster group meeting on 15 January 2008, and the group agreed that the Compendium should not be seen as a simple update of the 2004 report but as a useful body of evidence that can be used for continuous peer learning and knowledge exchange. It can also illustrate and document current DG EAC/Member State e-learning priorities

The Compendium can be used as a stand-alone document to support the work of the ICT Cluster group in its domestic ICT strategies. However, as the cases have been grouped along Lifelong Learning Programme priorities, it can also help to identify good practices regarding themes relevant to achieving success for the Lifelong Learning Programme objectives, as well as practices that support current EU policies and strategic priorities, such as innovation. It can also help strengthen and support EU-wide dissemination activities and cooperation.

[1] However, since the relevant contact persons at the countries' Education Ministries filled in the template themselves, it was in some cases difficult to maintain standard formulations, length and information on each subject.

Definition and assessment of good practice

Good-practice cases are cases which fully or substantially achieve their own objectives, have beneficial impacts on the environment and provide useful learning points and lessons for other Member States and European countries. The quality of the cases was assessed using the following criteria:

- managing e-learning implementation
- use of ICT
- innovativeness
- real practical results and impact
- functionality
- visibility
- valuable learning points and transferability

List of cases

No	Country	Cases	Category
1	**Austria**	• ePortfolios in Education	*Learning Management System*
2		• Future Learning	*Learning Management System*
3	**Bulgaria**	• ICT in National Education Strategy	*National Strategy Reform*
4	**Cyprus**	• Increasing the number of personal computers (PCs) in schools	*ICT Infrastructure*
5		• Whiteboards in all schools	*ICT Infrastructure*
6		• Internet for all schools	*ICT Infrastructure*
7		• Intranet between all schools	*ICT Infrastructure*
8		• Training teachers in ICT	*Teacher Training*
9		• Use of multimedia in teaching through developing electronic content	*New Learning Environment*
10		• Implementation of a Learning Management System	*Learning Management System*
11	**Estonia**	• UNIVe project — Creating a network-based e-university model for small countries in the context of e-learning in Europe	*New Learning Environment*
12		• Hello Spring (Tere Kevad)	*New Learning Environment*
13		• LeMill web community for teachers	*New Learning Environment*
14		• eKool — Centralised Student Information System	*ICT Infrastructure*
15		• Teachers' ePortfolio	*Teacher Training*
16	**Finland**	• Netlibris	*e-Skills*
17		• KenGuru — Virtual Teacher In-Service Training	*Teacher Training*
18		• Avoinamk.fi eLearning Portal for the Finnish Polytechnics	*ICT Infrastructure*
19	**France**	• PrimTICE portal of best eLearning practice	*Learning Management System*
20	**Germany**	• Online-supported distance education for further training of teachers of German as a second language	*Teacher Training*

21		• Arbeitsräume im Internet für Schulen (ARIMIS)	*ICT Infrastructure*
22	***Greece***	• eLearning Platform	*ICT Infrastructure*
23	***Hungary***	• Utilisation of the Moodle Course Management System (CMS) in Secondary Schools	*Learning Management System*
24		• Learning with Lego-Robots	*New Learning Environment*
25		• House of the Future — School of the Future — Digital Storytelling	*New Learning Environment*
26		• House of the Future — School of the Future — Teacher Training	*Teacher Training*
27	***Luxembourg***	• eBac eLearning Platform	*Digital Literacy*
28	***Malta***	• Rescue La Vallette — An Adventure in Time	*New Learning Environment*
29		• Euro Changeover	*New Learning Environment*
30		• One2one In-Class Teacher Training Programme	*Teacher Training*
31		• Online Community for Teachers	*Learning Management System*
32		• Automated Testing System (SSr) in ICT	*ICT Infrastructure*
33		• Malta National eLearning Strategy	*National Strategy/Reform*
34	***Norway***	• Learning Networks	*New Learning Environment*
35		• Knowledge Promotion	*National Strategy/Reform*
36		• Federated Electronic Identity (FEIDE)	*National Strategy/Reform*
37	***Poland***	• Scholaris — Online Educational Resource Centre	*New Learning Environment*
38		• EuroProf	*New Learning Environment*
39		• Virtual Textbook	*New Learning Environment*
40	***Slovakia***	• Fluency in Information Technology — Application of ICT in Subjects (FIT)	*e-Skills*
41	***Slovenia***	• Teachers Train Other Teachers	*Teacher Training*
42		• New ways of teaching and learning with new educational e-content	*New Learning Environment*
43	***Turkey***	• Microsoft Cooperation in Education	*Teacher Training*

EU Programme for Lifelong Learning 2007–2013

E-learning is part of the EU Programme for Lifelong Learning 2007–2013 comprising fundamental actions enabling the EU to achieve the Lisbon goal of becoming an advanced knowledge economy. More specifically, the Lifelong Learning Programme supports and supplements actions by Member States, and fosters interchange, cooperation and mobility between education and training systems within the Community to turn European educational systems into a world quality reference.

The good-practice cases in this Compendium are national policies for improving the use of e-learning across European countries. Thus, they are not directly connected to the Lifelong Learning Programme as such. However, these e-learning initiatives are situated in a lifelong learning context and thus complement the work done on lifelong learning at both EU and national levels. Therefore, we suggest grouping the cases according to the specific objectives concerning lifelong learning in the EU in order to:

1. **Create a tool for the Commission:** if the Commission is to achieve the goals of the Lifelong Learning Programme, an evidence base of education and e-learning policies in the EU needs to be created. The Compendium is an ongoing process of collecting e-learning initiatives across Europe, providing the Commission with an overview of what is going on at national levels.

2. **Analyse whether national e-learning policies could contribute to lifelong learning:** the Lifelong Learning Programme is a major Commission investment, and it is therefore interesting to find out to what extent existing national policies for e-learning reinforce the agreed lifelong learning priorities and supplement the sectoral programmes such as Comenius and Leonardo da Vinci.

3. **Discuss synergies between ICT and lifelong learning:** grouping the cases according to the lifelong learning objectives stimulates discussion of synergies between e-learning and lifelong learning. The aim of the cluster activities is to facilitate discussion of learning issues regarding ICT and education in general. The possible synergy between e-learning and lifelong learning is one such issue, as it compounds potential links between specific, national initiatives and shared EU objectives.

Contributing to the development of quality lifelong learning, and promoting high performance, innovation and the European dimension in systems and practices

Cyprus	• Training teachers in ICT	*Teacher Training*
	• Implementation of a Learning Management System	*Learning Management System*
Estonia	• Hello Spring (Tere Kevad)	*New Learning Environment*
Finland	• Netlibris	*e-Skills*
France	• PrimTICE portal of best eLearning practice	*Learning Management System*
Hungary	• Learning with Lego-Robots	*New Learning Environment*
	• Utilisation of the Moodle Course Management System (CMS) in Secondary Schools	*Learning Management System*
Malta	• Rescue La Vallette — An Adventure in Time	*New Learning Environment*

	• Euro Changeover	*New Learning Environment*
	• One2one In-Class Teacher Training Programme	*Teacher Training*
	• Malta National eLearning Strategy	*National Strategy/Reform*
Slovakia	• Fluency in Information Technology — Application of ICT in Subjects (FIT)	*e-Skills*
Slovenia	• New ways of teaching and learning with new educational e-content	*Teacher Training*

Supporting the realisation of a European area of lifelong learning

Helping improve the quality, attractiveness and accessibility of the opportunities for lifelong learning

Austria	• ePortfolios in Education	*Learning Management System*
	• Future Learning	*Learning Management System*
Estonia	• Teachers' ePortfolio	*Teacher Training*
Finland	• KenGuru — Virtual Teacher In-Service Training	*Teacher Training*
Germany	• Online-supported distance education for further training of teachers of German as a second language	*Teacher Training*
Hungary	• House of the Future — School of the Future — Teacher Training	*Teacher Training*
Malta	• Online Community for Teachers	*Learning Management System*
Norway	• Learning Networks	*New Learning Environment*
Luxembourg	• eBac eLearning Platform	*Digital Literacy*
Slovenia	• Teachers Train Other Teachers	*Teacher Training*
Turkey	• Microsoft Cooperation in Education	*Teacher Training*

Reinforcing their contribution to social cohesion, active citizenship, intercultural dialogue, gender equality and personal fulfilment

Norway	• Knowledge Promotion	*National Strategy/Reform*

Helping promote creativity, competitiveness, employability and the growth of an entrepreneurial spirit

Cyprus	• Use of multimedia in teaching through the development of electronic content	*New Learning Environment*
Hungary	• House of the Future — School of the Future — Digital Storytelling	*New Learning Environment*

Contributing to increased participation in lifelong learning by people of all ages, including those with special needs and disadvantaged groups

Promoting language learning and linguistic diversity

Poland	• EuroProf	*New Learning Environment*
	• Virtual Textbook	*New Learning Environment*

Supporting the development of ICT-based resources

Bulgaria	• ICT in National Education Strategy	*National Strategy Reform*
Cyprus	• Increasing the number of personal computers (PCs) in schools	*ICT Infrastructure*
	• Whiteboards in all schools	*ICT Infrastructure*
	• Internet for all schools	*ICT Infrastructure*
	• Intranet between all schools	*ICT Infrastructure*
Estonia	• eKool — Centralised Student Information System	*ICT Infrastructure*

Finland	• Avoinamk.fi eLearning Portal for the Finnish Polytechnics	*ICT Infrastructure*
Germany	• Arbeitsräume im Internet für Schulen (ARIMIS)	*ICT Infrastructure*
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Poland	• Scholaris — Online Educational Resource Centre	*New Learning Environment*
Norway	• Federated Electronic Identity (FEIDE)	*National Strategy/Reform*

Reinforcing their role in creating a sense of European citizenship based on respect for European values and tolerance and respect for other peoples and cultures

Promoting cooperation in quality assurance in all sectors of education and training

Improving their quality by encouraging the best use of results, innovative products and processes and the exchange of good practice

Estonia	• UNIVe project — Creating a network-based e-university model for small countries in the context of eLearning in Europe	*New Learning Environment*
	• LeMill web community for teachers	*New Learning Environment*

Trends and issues of good-practice cases concerning e-learning

Looking at the core dimensions of the template, the following observations of a quantitative and qualitative nature can be made for the cases:

Quantitative issues

Level of implementation

Most cases are implemented at national level, and accompanied by roll-out at regional and local level. In reality, this means that the *reach* is national but that in most cases, as they are learning environments, services and projects implemented at individual schools, they are implemented at local level. In a few instances the project started as a local pilot one, which was then implemented on a national scale.

Target groups

The cases concern different target groups. These groups can roughly be divided into:

- students (e.g. primary, secondary students)
- teachers
- adult learners
- vocational learners
- parents
- formal educational institutions
- educational administrators
- associations, youth clubs, etc.

Many of the case examples address several target groups at the same time. The most common target group is students at primary- and secondary-school level, followed by teachers.

Budget

The budget allocated and used in implementing the projects and initiatives varies greatly. In some cases the budget is described as the budget spent per year, in other cases as the total budget for the project/system. In some cases, the budget will include overheads and participation, in others what is indicated is the cost of running a given service. Additionally, real costs are very different across the countries. In general the total costs will be much higher, for instance, in the Nordic countries compared to those in Eastern European countries. This makes it difficult to compare budget sizes across the cases.

Qualitative issues and trends

- **Teacher Training**

The importance of training teachers in and by ICT is recognised in all European countries, and increasing resources and efforts are being allocated to this area. The Compendium contains many cases addressing this issue. Experience in various countries like Finland, Estonia, Norway, Slovakia and Germany shows that teachers are much more engaged in the use of ICT when the methods employed are flexible and adaptable according to their needs and experiences. Also such experience shows that the content of Learning Management Systems can be qualitatively improved if teachers are provided with the opportunity to amend them.

- **New Learning Environment**

New-learning-environment systems are not only those that integrate ICT into the existing learning environment and therefore create an ICT-enhanced system, but also innovative learning systems resulting from thinking in ICT terms right from their early development. In other words, exploring ICT capabilities not only improves teaching, but can also help to design very different learning and teaching systems. One example is the Estonian 'Hello Spring' project, which is a nature and science project that integrates use of the Internet into day-to-day teaching. It is aimed at 7 to 14 year-olds, and it has had an impact in terms of improving motivation and also improving teamwork skills of both teachers and students. Other examples include the ARIMIS project in Germany, which provides a good-practice example on development of Learning Management Systems like Moodle for various e-learning needs. In the ARIMIS case, a system was built to advance ICT-based distance learning.

- **Learning Management Systems**

There are interesting examples of applying new learning management systems across Europe. A Learning Management System (LMS) is a system where the software tools are designed and integrated into the training process in order to manage user learning interventions. In Austria, the 'ePortfolio in Education' project aimed to create a tool in the lifelong learning context. It sets out to integrate secondary schools, adult education institutions and university institutions in Austria in a project where portfolios of students' achievements are tested in several classes, study groups and lessons. The system developed Open Source tools for organising personal portfolio structures on electronic learning platforms (Exabis Moodle extension). It resulted in a portfolio project that provides new forms of personal learning and which will be a new form of assessment applied to final examinations (mixture of marks and students' "original work").

- **Digital Literacy**

Improving digital literacy has become a key priority in the context of the EU's social inclusion agenda, e-Inclusion agenda and the renewed Lisbon Strategy. Digital literacy is a set of competences that enables the individual to improve his or her life chances and quality of life. It is commonly understood that digital literacy and e-competences should improve access to services (including public services), provide greater ability to cope with life's daily burdens such as access to and use of information concerned with transport, opening hours, leisure, schools, etc., help improve Government-citizen relations, public administrations, access to education, training, work and jobs, and enhance personal capacities.
The 'Learning Networks' in Norway and the eBac in Luxembourg are examples of promotion of general e-competences. eBac is aimed at adults/early school leavers and offers them a blended distance e-learning-platform which allows e-learners to prepare for their baccalaureate online without being forced to attend classes at a specific time and in a specific place. Traditional presence classes are offered to e-learners, but they are optional so as to make for maximum flexibility. The baccalaureate exam as such is held in a traditional school together with the students who attended presence classes. eLearners receive exactly the same diploma as traditional learners.

- **e-Skills**

The development of e-skills amongst teachers and pupils is being increasingly recognised as a key element in implementing a successful e-learning strategy, and for optimum use of the new digital and collaborative learning environments in education and training. This is also linked with the good-practice cases of teacher training and there seems to be an awareness of the importance of improving teachers' e-skills as a prerequisite for improving those of pupils. Examples in the Compendium include the Finnish Project 'Netlibris'. This is a pedagogic method of teaching literature. Netlibris schools cooperate in offering an enriched literature programme to selected groups of students. The process consist of literature discussions, virtual and face-to-face reader group meetings, teachers working in virtual teams as tutors, and collaboration between teachers, librarians, teacher educators and schools. Netlibris has provided professional development courses for teachers locally and nationally. More than 200 teachers are involved in developing the programme.

- **National Reforms and Strategies**

On a more general level, the cases collected include a number of national e-learning strategies or reforms for the entire educational system in a given country. The case from Bulgaria shows how the issue of better use of ICT in education is closely related to the general development of its educational system. This gives rise to discussion as to what developments of the overall educational system are pivotal for successful use of e-learning in Europe. In Norway, 'Knowledge Promotion' is a good example of a national reform programme. It is the latest reform in the 10-year compulsory school and in upper-secondary education and training. The objective of the reform is to help all pupils develop fundamental skills that will enable them to participate actively in the knowledge society. The reform took effect in autumn 2006 for pupils in grades 1 to 9 of 10-year compulsory school and for pupils in their first year of upper-secondary education and training. It is too soon to assess the reform's impact, but an early learning point to emerge is that more emphasis on teacher training is necessary to implement new reforms. In the follow-up actions of the Programme for Digital Competence (2004–2008) ICT in teacher training will be prioritised.

- **ICT infrastructure**

The examples in the Compendium show that improving the ICT infrastructure of Europe's schools is still an issue, but that there are many useful solutions from which to learn. Improving ICT infrastructure is a many–layered issue — it is just as much about basic upgrading of the number of PCs in each school and broadband access to the Internet as it is about integrating new digital tools, such as interactive whiteboards, into the classrooms and introducing ICT systems into the administrative procedures and the e-service offerings for parents and pupils, such as online submissions of reports, electronic application procedures, etc. In Cyprus, the Ministry of Education and Culture has set infrastructural goals of increasing the number of PCs in schools as follows: in primary education — 1 PC/3 students; secondary education — 1 PC/2 students; and technical/vocational education — 1 PC/2 students. To help fund this, a loan of €110 million was obtained from the CEB and the EIB. Additional funding of €20 million was provided from the European Social Fund. The results are improved technological literacy and increased use of Intranet applications.

Country cases

AUSTRIA

Category	*Learning Management System*
Title of the initiative	ePortfolios in Education
Contact details including weblinks	Erwin Bratengeyer, Christian Schrack, Christian Dorninger and others. Weblinks: www.e-portfolio.at www.elearningcluster.at /ePortfolio
Start- and end-date	January 2007 – December 2010
Objectives of the initiative	• To create a tool in the context of lifelong learning for pupils and students at schools and higher educational institutions. • To integrate secondary schools, adult education institutions and university institutes in Austria in a project, where portfolios of students' achievements are tested in several classes, study groups and lessons. • To develop Open Source tools to organise personal portfolio structures on electronic learning platforms (Exabis Moodle extension).
The motivation of the initiative	According to the Chief Executive of the European Institute for e-Learning (EIfEL) Serge Ravet, "*ePortfolios are now a central element in some national learning policies."* Austrian education institutions will participate in this initiative.
Level of implementation	National programme of Austria including all sectors of education and all educational actors.
Target group	School and university students from 13 to 25; adult learners; teachers, if initiative is successful for learners.
Budget	€2 000 000 over 4 years (is part of the FutureLearning budget).
Participants	Schools, university institutes, Fachhochschulen, adult education institutes, service providers, public-private partnerships with IT- and IT-training companies.
Short description of the project	The portfolio concept should be applied to document the student learning and working progress. There are some open learning forms in secondary education and the students have to manage project work during the end of secondary education. ePortfolios give students the opportunity to gather different solutions, oral and visual presentations and seminar papers any time and also at home. The presentation of your own portfolio can be arranged, if desirable and possible. The working portfolios will be transferred into a presentation portfolio of school graduates and can be extended during university studies and practical work in companies.
Methods applied to reach the objective (technological and/or pedagogical)	• Using the Networking and e-partnership programmes between schools and university institutes. • Processing from working portfolio to presentation portfolio. • Using a European perspective.
Implementation	• Steady use of the cluster structures of the schools and study courses over 2

	years. • Providing an e-learning platform tool for all students.
Specific results	120 of the 300 eLearning schools involved to test portfolio structures. About 3 000 users at schools and 1 000 in higher education. Participation in international discussions regarding ePortfolios and LMS.
Impacts	The portfolio project provides new forms of personal learning and will be a new form of assessment in the final examinations (mixture of marks and students' "original work"). The project also entails strong vocational components by creating new relations with labour markets and employers.
Lessons learnt	• Proceed slowly with a meaningful topic in a European environment. • Support personal creative thinking and working of the students. • Topics like ePortfolios must be established as a network in all education institutions in secondary, higher and adult education.

Category	***Learning Management System***
Title of the initiative	FutureLearning — the successful next development of the eFit initiative
Contact details including weblinks	IT/eLearning steering group of the Ministry of Education, H. Strohmeyer, C. Dorninger et al. (see supplement). Weblinks: www.bmukk.gv.at/schulen/fl/futurelearning.xml http://www.schule.at/index.php?url=news&news_id=4517
Start- and end-date	Start: 2 October 2007; end: October 2010.
Objectives of the initiative	"FutureLearning" intends to open up a connection for all pupils, students and teachers to a web-driven communication and learning tool (this could be defined as Mobile Computing Interface) and to adjust the learning possibilities to reasonable learning and school environments. Three objectives: 1) New methods of learning and eLearning. 2) Creativity and learning. 3) Mobile computer interface for all students.
The motivation of the initiative	The Internet is losing its pure "publication" function because of newly developed portals and is becoming interactive. The web is changing within a very short period of time not only in a technical way but also in all areas of application and especially in using the net. With the next steps of "social software" and "Web 2.0" the Internet is changing to a distributed net. In contrast to other mass media it is very easy in a "web by users for users" not only to be a recipient but also to be an author and sender of messages to an infinite number of users.
Level of implementation	National programme in Austria including all school and adult education sectors and all educational actors; follows "eFit".
Target group	Pupils and school students from 6 to 19; adult learners; teachers and special target groups (isolated children and children in hospitals — project IICC, migration pupils, mentally and physically disabled pupils).
Budget	€15m over 4 years.

Participants	Schools, service providers, public-private partnerships with IT- and IT-training companies.
Short description of the project	The large-scale project Future Learning includes: eContent and mid-term IT-services for complete education, social software and Web 2.0 at schools, new equipment, new initiatives (sub-laptops, mobile telephones for learning, PDAs, iPods), teacher training (e-learning didactic-courses, online academies, eBuddy/eTutor concepts, real-time platforms, eGovernment content for teachers, participating in EPICT and others), equipment guidelines and equipment initiatives for all schools, educational offers for adult learners and employed persons, reduction of barriers for specific target groups, quality projects in schools and integrative IT-use (Quality initiative and education standards), arts and creative projects (together with art institutes like the Ars Electronica Center Linz).
Methods applied to reach the objective (technological and/or pedagogical)	Networking and e-partnership programmes (twinning concepts for teachers and schools); the “eLearning Cluster” (eLC) and “eLearning im Schulalltag” (eLSA) networks consist of about 300 schools. Regional initiatives outside big cities. FutureLearning Competence Centres (FLCC) with learning platforms and eContent planned in 2008; an example is the successful “edu-moodle” initiative to which 400 schools belong.
Implementation	• Some money for the schools coming together and taking part in the networks (about €3 000 per year). • Four conferences and cluster meetings for different projects and target groups within a year. • Cooperation of education eLearning server institutions in provinces.
Specific results	300 eLearning schools (40% of secondary schools); 450 schools using (edu-)moodle and other platforms; Education standards with eLearning components; eContent material for 35 subjects, e-schoolbooks of school book publishers.
Impacts	eLearning initiatives are “subculture — mainstream” programmes for advanced schools, teachers and students; eLearning in these schools means “everyday learning”; “sub-culture” means there is not a big response from the political level and from public media.
Lessons learnt	After 150 different projects in the eFit area, consolidation of projects has been launched. All IT/e-learning initiatives are now close to new learning processes and pedagogical mainstream projects and school quality initiatives. Networking of schools and organisational development of lesson management is more important than eLearning offers; “eEducation” in Austria means that the schools are prepared for using eContent, platforms and new devices.

BULGARIA

Category	*National Strategy/Reform*
Title of the initiative	ICT in National Education Strategy
Contact details	Ministry of Education and Science 2A Dondukov blvd, Sofia 1000 www.mon.bg
Start- and end-date	2005 – 2007
Objectives	• Improving students' access to computers and moving the focus from lab-orientated provision to computers in the classroom. • Improving connectivity so that all schools have access to the Internet. • Addressing the dearth of good, fit-for-purpose Bulgarian e-learning content, especially for secondary school students. • Improving teaching skills and confidence through basic ICT skills training and ICT pedagogy training. • Reforming the curriculum to introduce ICT into lower secondary education. • Promoting a strategic, innovative approach to ICT development at school-leader level.
Motivation	There is a common understanding that ICT is the key to modernising the wider educational system. ICT-based education will present a chance to deliver knock-on benefits for the whole culture of education in Bulgaria, nurturing innovation and openness to new ideas, raising quality and promoting standards, to the benefit of all stakeholders.
Level of implementation	National level.
Target group	Students, teachers, school leaders.
Budget	€70m, State budget funding.
Participants	• Ministry of Education and Science. • 3 000 schools in Bulgaria. • National ICT Agency.
Short description of the project	The initiative implied supplying all Bulgarian schools with ICT infrastructure (including broadband). Moreover, a national educational portal with educational resources and shared content was constructed. In order to ensure successful implementation of the new hardware and software, teachers have had ICT training on core ICT skills and productivity tools. Finally, the curriculum was reformed to promote effective, creative use of ICT across all subjects, including the introduction of one hour a week of ICT as a subject for all schools from Grade 5, with the option of introducing ICT as a subject from Grade 1.
Methods applied to reach the objective	• Centralised provision of computers, peripherals, networks and ICT services. • Commissioning content creation and a national educational portal. • Training teachers in the use of ICT, moreover using the cascade method in teacher training which has the advantage that large numbers of teachers can

	be trained in a relatively short time span. • Encouraging teachers and students to develop educational content through organising competitions and National Olympiad in Information Technology.
Implementation	• Development of implementation programme for every year. • Monitoring implementation. • Studying good international practices. • Teacher training and reform of the curriculum are synchronised with the European Framework of Key Competences for Lifelong Learning.
Specific results	All 3 000 Bulgarian schools have computers, broadband connections, laptops and projectors for use in the classrooms. • National educational portal which allows sharing of resources. • Commissioning content creation — 30 e-lessons across the curriculum. • Content created by Bulgarian teachers and students — 500 projects per school year. • Content created by Bulgarian educational software developers.
Impacts	• Increased efficiencies in teaching through use of technology. • Transforming the learning process. • Access to learning resources for everyone.
Lessons learnt	How quickly ICT in Education will develop in Bulgaria depends on the how quickly the fundamental reforms necessary to modernise Bulgarian education in general are introduced.

CYPRUS

Category	*ICT Infrastructure*
Title of the initiative	Increasing the number of personal computers (PCs) in schools
Contact details including weblinks	Ministry of Education and Culture, Cyprus.
Start- and end-date	2005 – 2008
Objectives of the initiative	To increase the number of personal computers in schools as follows: Primary Education: 1 PC/3 students Secondary Education: 1 PC/2 students Technical/Vocational Ed.: 1 PC/2 students
The motivation of the initiative	Not available.
Level of implementation	Nationally. All State schools.
Target group	All students/approx. 110 000 students/100% of pupils attending State schools.
Budget	In €: 2005: €81 782.58 2006: €139 889.95 2007: €312 697.10 2008: €6 840 000.00 (contract signed)
Participants	Ministry of Education and Culture, schools, companies.
Short description of the project	Installation of PCs in classrooms and laboratories.
Methods applied to reach the objective	Technological/tendering process.
Implementation	A loan of €110m was obtained from the CEB and EIB.
Specific results	Improvement of teachers' and students' digital skills. Use of computers by more students and more time.
Impacts	Improved technological literacy.
Lessons learnt	Teachers and students use the technology if it is the latest available.

Category	*ICT Infrastructure*
Title of the initiative	Endowing each classroom with a projector and an interactive whiteboard
Contact details including weblinks	Ministry of Education and Culture, Cyprus.
Start- and end-date	2005 – 2009
Objectives of the initiative	To install and use interactive whiteboards in all classrooms and laboratories
The motivation of the initiative	Training in the use of interactive whiteboards.
Level of implementation	Nationally. All State schools.
Target group	• All students/approx. 110 000 students/100% of pupils attending State schools. • All teachers at all levels of education: 13 000.
Budget	In €: 2005: €1 747 937.50 2006: €34 601.27 2007: €4 698.79 2008: €581 400
Participants	Ministry of Education and Culture, teachers, schools, companies.
Short description of the project	Installation of projectors and interactive whiteboards in all classrooms and laboratories.
Methods applied to reach the objective (technological and/or pedagogical)	• Technological/tendering process. • Pedagogical: training teachers to use interactive whiteboards.
Implementation	A loan of €110m was obtained from the CEB and EIB.
Specific results	• Improvement of teachers' and students' digital skills. • Use of interactive whiteboards to improve the results in the classroom.
Impacts	Technological literacy has been improved and use of interactive whiteboards has increased across all subjects.
Lessons learnt	The teachers and students use the interactive whiteboards to a satisfactory degree.

Category	*ICT Infrastructure*
Title of the initiative	Provision of Internet Access for all PCs in State Schools
Contact details including weblinks	Ministry of Education and Culture, Cyprus http://www.schools.ac.cy/klimakio/index.html
Start- and end-date	2001 – 2009
Objectives of the initiative	• To connect all terminals in State schools with the Internet via broadband connec
The motivation of the initiative	• Training in use of Internet applications and how to use them in lessons.
Level of implementation	National: all State schools.
Target group	All students/approx. 110 000 students/100% of pupils attending State schools. All teachers at all levels of education: 13 000.
Budget	In €: 2005: €1 110 205.50 2006: €307 866.43 2007: €78 922.45 2008: €2 052 000.00
Participants	Ministry of Education and Culture and companies.
Short description of the project	Connecting all schools with broadband and Internet connection.
Methods applied to reach the objective (technological and/or pedagogical)	• Technological/tendering process. • Pedagogical: training teachers to use Internet applications.
Implementation	A loan of €110m was obtained from the CEB and EIB.
Specific results	• Improvement of teachers' and students' digital skills. • Use of the Internet for projects and communication.
Impacts	Improved technological literacy and increased use of the Internet in education. Positive attitudes towards using the Internet in teaching were developed.
Lessons learnt	The teachers and students use the Internet in the classroom for a variety of activities. However, it is important to be aware of the potential security issues.

Category	*ICT Infrastructure*
Title of the initiative	Interconnection of all schools through a dedicated educational Intranet
Contact details including weblinks	Ministry of Education and Culture, Cyprus.
Start- and end-date	2005 – 2009
Objectives of the initiative	• To develop the infrastructure for implementing a secure educational Intranet fo schools.
The motivation of the initiative	Not available.
Level of implementation	Nationally. All State schools.
Target group	All students/approx. 110 000 students/100% of pupils attending State schools. All teachers at all levels of education: 13 000.
Budget	In €: 2005: €10 925.20 2006: €22 765.23 2007: €440 379.72 2008: €9 133 347.69 (contract signed)
Participants	Ministry of Education and Culture and companies.
Short description of the project	Connecting all State schools with the Data Centre of the Ministry of Education and Culture to form an educational Intranet.
Methods applied to reach the objective (technological and/or pedagogical)	Technological/tendering process.
Implementation	A loan of €110m was obtained from the CEB and EIB. Additional funding of €20m from the European Social Fund.
Specific results	• Improvement of teachers' and students' digital skills. • Solving technological issues. • High-speed connection/security issues solved.
Impacts	Improved technological literacy and increased use of Intranet applications.
Lessons learnt	There are fewer problems in implementing eLearning initiatives if hi-tech investments are made.

Category	*Teacher Training*
Title of the initiative	Training teachers in ICT
Contact details including weblinks	Pedagogical Institute of Cyprus, Ministry of Education and Culture, Cyprus http://www.pi.ac.cy/
Start- and end-date	2005 – 2009
Objectives of the initiative	Training all teachers in using ICT for themselves and in the classroom.
The motivation of the initiative	Not available.
Level of implementation	Nationally. All State schools.
Target group	All teachers at all levels of education: 13 000 (approximately).
Budget	In €: 2005: €918 340.11 2006: €1 740 634.65 2007: €2 766 827.88 2008: €5 909 760.00
Participants	Ministry of Education and Culture, Pedagogical Institute, teachers, University of Cyprus.
Short description of the project	Training teachers in two major programmes: A. ICT Skills (i.e. ECDL). B. Application of ICT in Curricula.
Methods applied to reach the objective (technological and/or pedagogical)	Pedagogical: teacher training — cores.
Implementation	• A loan of €110m was obtained from the CEB and EIB. Additional funding of €20m from the European Social Fund. • Every teacher completing the training received €600 (approximately). • Certification of ICT skills for all teachers completing the training.
Specific results	Improvement of teachers' and students' digital skills. A lot of teachers enrolled in the teaching programmes.
Impacts	Improved technological literacy and increased use of ICT applications in classrooms.
Lessons learnt	The response will be good if the planning is good.

Category	*New Learning Environment*
Title of the initiative	Use of multimedia in teaching through developing electronic content
Contact details including weblinks	Ministry of Education and Culture, Cyprus
Start- and end-date	2006 – 2009
Objectives of the initiative	To develop electronic content for all subjects.
The motivation of the initiative	Training in using the Learning Management System.
Level of implementation	Nationally. All State schools.
Target group	• All students/approx. 110 000 students/100% of pupils attending State schools. • All teachers at all levels of education: 13 000 (approximately).
Budget	In €: 2005: € - 2006: € - 2007: €1 941 498.09 2008: €1 294 333.20
Participants	Ministry of Education and Culture, Pedagogical Institute, teachers.
Short description of the project	To develop electronic content for all subjects by reconstructing curricula.
Methods applied to reach the objective (technological and/or pedagogical)	Pedagogical: training teachers.
Implementation	A loan of €110m was obtained from the CEB and EIB. Additional funding of €20m from the European Social Fund.
Specific results	Improvement of teachers' and students' digital skills. Teachers responded positively to the new content and are using it.
Impacts	Improved technological literacy and increased use of ICT in classrooms.
Lessons learnt	The content is used if good training is provided and the Learning Management System is simple to use.
Category	Reconstruction of curricula.

Category	*Learning Management System*
Title of the initiative	Implementation of a Learning Management System
Contact details including weblinks	Ministry of Education and Culture, Cyprus. http://www.pi.ac.cy/
Start- and end-date	2007– 2010
Objectives of the initiative	• To apply a Learning Management System with electronic content and communication abilities.
The motivation of the initiative	Not available.
Level of implementation	Nationally. All State schools.
Target group	All students/approx. 110 000 students/100% of pupils attending State schools. All teachers at all levels of education: 13 000 (approximately).
Budget	In €: 2005: € - 2006: €1 637 725.14 2007: €750 613.91 2008: €690 564.79
Participants	Ministry of Education and Culture, Pedagogical Institute, teachers, companies.
Short description of the project	• Training in use of the Learning Management System. • Establishment of a Learning Management System. • Access for students/teachers/parents.
Methods applied to reach the objective (technological and/or pedagogical)	Pedagogical/training teachers to use the system.
Implementation	A loan of €110m was obtained from the CEB and EIB. Additional funding of €20m from the European Social Fund.
Specific results	Improvement of teachers' and students' digital skills. Teachers respond positively to use of the new content and the Learning Management System.
Impacts	Improved technological literacy and increased use of ICT applications in classrooms.
Lessons learnt	The content is used if good training is provided and the Learning Management System is simple to use.

ESTONIA

Category	*New Learning Environment*
Title of the initiative	UNIVe project — Creating a network-based e-university model for small countries in the context of e-learning in Europe
Contact details including weblinks	http://www.e-uni.ee/Minerva/
Start- and end-date	01.10.2003 – 31.12.2005
Objectives of the initiative	• To promote and provide access to improved methods and educational resources as well as results and best practices of online education. • To create new quality in European e-education among universities through integration of available e-learning know-how of previous relevant EU projects. • To create an e-university model for small countries with limited resources and ICT/ODL experience.
The motivation of the initiative	To develop and expand the activities of the e-University consortium and ensure the sustainability of e-learning in Estonia.
Level of implementation	National.
Target group	Students, teachers, adult learners and educational institutions.
Budget	€530 000.
Participants	Eight universities: University of Stirling, University of Joensuu, University of Art and Design Helsinki, Mid Sweden University, University of Tartu, Tallinn University (former Tallinn Pedagogical University), Tallinn University of Technology, Estonian Business School. Two Associations: Estonian Information Technology Foundation, European Association of Distance Teaching Universities.
Short description of the project	In order to provide an e-university model that would be relevant for different European countries, the e-learning know-how of the previous successful international projects was integrated and analysed. The main activities are the analysis of previous EC-supported international and national initiatives in the field, designing activities of the small-state e-university model and launching a series of integrated pilot projects. The main output is the small-state e-university model. The model will be described in a compendium and on a CD/DVD ROM. The strengthened European network of the main players in the e-learning field can be considered as a more general output of UNIVe.
Methods applied to reach the objective (technological and/or pedagogical)	Experts from 6 key learning areas, authors of innovative and well-functioning e-university applications, contribute with their e-university models for adaptation, testing and validation in creating the new e-learning model.
Implementation	The small-state e-university model which was the main outcome of the project was

	successfully implemented in Estonia and resulted in the Estonian e-University consortium still fully functional and growing today.
Specific results	A total of 2 200 e-courses have been created for higher and vocational education with more than 25 000 students for both consortia. More than 2 500 teachers and lecturers from vocational and higher education have participated in the staff training programme. Hundreds of people participate in the annual e-learning conferences and seminars. More than 10 thematic networks concentrating on a certain subject area and involving teachers from different institutions are actively operating.
Impacts	The UNIVe project laid the foundations for the activities and priorities of the Estonian e-University consortium in the field of e-learning in higher education in the following years. Based on its success a similar consortium for vocational schools was formed in 2005 involving more that 30 schools across Estonia. To ensure smooth running of both consortia, the Estonian e-Learning Development Centre was established in 2006 as a central coordination body.
Lessons learnt	The UNIVe project and the resulting developments with the consortia confirmed that e-learning and the use of ICT in the learning process give great benefits in cost reduction and synergy effects when deployed via good coordination.

Category	***New Learning Environment***
Title of the initiative	Hello Spring (Tere Kevad)
Contact details	Viktor Muuli (viktor.muuli(at)genomics.ee) http://tere.kevad.edu.ee http://tere.kevad.edu.ee/eng/index.html
Start- and end-date	Spring 2001, 2002, 2003, 2004, 2005, 2006, 2007
Objectives of the initiative	• For students to observe and study wildlife and nature throughout springtime, sharing the results with students from other schools using a special web environment. • To learn more about local nature and its history and be able to use the Internet for this purpose. A subsidiary objective of the project could be said to be the mainstreaming of ICT applications into the teaching process.
The motivation	To make natural sciences for students more interesting and attractive.
Level of implementation	Mainly national.
Target group	Mostly 7 to 14 years of age.
Budget	€15 500 — 2007.
Participants	Schools (primary education). Location of participants: http://tere.kevad.edu.ee/2007/skriptid/osalejad.php

Short description of the project	The Hello Spring project is a nature and science project which integrates Internet use into day-to-day teaching. The pupils have to observe changes in nature and afterwards be able to find additional information on specially designed websites on the Internet. This includes the ability to recognise sounds from frogs and birds on the Internet. The project also includes looking back to former times and thus integrates ICT, biology and history in such a way that the pupils will obtain a more thorough understanding of their local nature and its history.
Methods applied to reach the objective	The pedagogical method is observation of nature, recognising species and subsequently searching the Internet for additional information. Moreover, the project has integrated ICT into biology and history. The technological method is a project web-based database.
Implementation	• Pupils take field trips and identify the species of plants and animals that indicate the arrival of spring. • Pupils compile the descriptions of the species and create web-pages with stories, pictures and sounds where possible. • Pupils who observe the indicator species in nature enter the date of their arrival or appearance (flowering) to the project web-based database. All results of observations will instantly appear in the web in the form of maps or tables and can be followed by anyone interested.
Specific results	In 2007 the project database contains observation results from 4 837 pupils and it can be used by all pupils, teachers and other interested people. The project has also resulted in web-pages created by participants with their project work.
Impacts	The main impact of the Hello Spring project is improved motivation of pupils to learn natural sciences. Though not being a direct impact there could be some association with Estonia's improved PISA tests in natural sciences. The project has also improved the teamwork skills of teachers and pupils.
Lessons learnt	In order to ensure the success of a project on integrating the application of ICT into everyday teaching it is vital to have a clear vision and a good team of leaders. Moreover, the activities have to be interesting and attractive enough for pupils to participate while remaining meaningful in a learning context.

Category	***New Learning Environment***
Title of the initiative	LeMill
Contact details including weblinks	Teemu Leinonen (teemu.leinonen(at)taik.fi) http://lemill.net http://calibrate.eun.org
Start- and end-date	October 2005
Objectives of the initiative	• To build a web community where teachers can find, create and share free and open educational resources.
The motivation	To provide a commons-based alternative to the traditional textbook publishing industry. All the learning resources in LeMill are published under an open licence that gives individual teachers the possibility to adapt the learning resources according to their specific needs.

Level of implementation	LeMill is implemented at European level as it is developed within the CALIBRATE (http://calibrate.eun.org) project funded under the European Commission's 6th Framework Programme.
Target group	The main target groups of LeMill are primary and secondary school teachers in Europe. The LeMill community also includes educational administrators, researchers, teachers, students and open-content activists in various countries.
Budget	€460 000 (October 2005 — March 2008).
Participants	LeMill is designed and developed by an international team that includes partners at universities and research institutions: University of Art and Design Helsinki (Finland), Tallinn University (Estonia), SZTAKI (Hungary), Intermedia, University of Oslo (Norway). After the CALIBRATE project ended in March 2008 the development of LeMill was continued by Helsinki University of Art and Design and Tallinn University.
Short description of the project	LeMill is a web community for finding, authoring and sharing open and free learning resources. Its main target groups are teachers and learning-content authors, but anyone is free to join. All the resources are freely usable by anyone in any context it is released under Creative Commons Attribution-ShareAlike 2.5. LeMill has four sections: Content, Methods, Tools and Community. In the Content section there are different templates that enable teachers to create web-based learning resources, media pieces can be uploaded and used as learning resources and references to external resources can be added. In the Methods section teachers share descriptions of various educational methods. The Tools section contains descriptions of tools that can be used in teaching and learning. The tools can be physical (such as a classroom or a blackboard) or virtual (software for drawing mindmaps). The Community section allows the user to browse the other members' materials and work with them in groups.
Methods applied to reach the objective	• Participatory design. • Commons-based peer production. • Integration of different subjects. • Collaborative learning.
Implementation	LeMill has been presented at several conferences and seminars. Teacher training courses have been organised in various countries. In Estonia, the Tiger Leap Foundation organised a competition for teachers to create educational resources in LeMill. Similar competitions are planned in some other EU countries and have been organised in the Czech Republic and Hungary.
Specific results	By the end of March 2008 more than 2 300 teachers and learning content creators from more than 40 countries had joined LeMill. They have created 1300+ reusable learning content resources, 200+ descriptions of teaching and learning methods, and 400+ descriptions of teaching and learning tools. The most active countries in LeMill are Estonia, Hungary, Georgia, the Czech Republic, Lithuania and Finland.
Impacts	LeMill is expected to have a wider impact on school culture. In LeMill teachers will see the benefits of co-creation of knowledge artefacts and they will implement similar kinds of collaborative learning practices with their pupils
Lessons learnt	For an educational software project to be successful it is important to include users in the early phase of the project. LeMill has been designed and developed in close cooperation with teachers. Design sessions with teachers were organised in four countries. Early prototypes of software were made available for users. This gave important feedback from the teachers and helped to improve the

	system and add new features gradually.

Category	*ICT Infrastructure*
Title of the initiative	eKool — Centralised Student Information System
Contact details including weblinks	Service address: https://www.ekool.ee Additional information: http://www.ekool.eu Project management and information: ene(at)ekool.ee
Start- and end-date	January 2002, the Estonian Look@World Foundation had a competition to find new Internet-based public services. The eKool project was chosen as one of the winners. Today 330 Estonian schools (about 60% of all schools) use eKool as their school information system.
Objectives of the initiative	• To make school activities and the information that is being created at school available to parents and students. • To create an application that can be used by all schools immediately in line with each school's readiness and needs. • To generate most of the school reports required by the municipality and the Ministry of Education by making it possible to apply the same data used for analysing information in different correlations and for taking management decisions. • To improve communication between pupils, parents and school and distribute information concerning the school.
The motivation of the initiative	The project was started because there was a lack of communication between schools and parents. On the other hand, schools needed tools for organising essential information and to provide easy reporting to the municipalities and the Ministry of Education.
Level of implementation	eKool is implemented at the local level (schools).
Target group	The target group for the eKool project consists of pupils and parents who also constitute 94% of all users.
Budget	Schools pay a small monthly fee of up to €112 for using eKool. The fee covers initial training, application hosting, development and user support.
Participants	Schools, teachers, parents and pupils.
Short description of the project	eKool contains data on the learning process and uses an Oracle database. The information accessible to users is always up-to-date and contains a full description of school lessons and information on grades, attendance, homework assignments and progress. Overall this means that pupils, parents and teachers have an improved picture of the information generated at school and in class plus the option to group such information differently and receive reports. eKool also implies development of seamless integration of assignments and eLearning material making it easier to recompose exercises and/or use existing ones again, and this makes it possible to track and evaluate results.
Methods applied to reach the objective	In pedagogical terms eKool works via a self-controlled environment in which the information in the database is constantly updated and improved by the

(technological and/or pedagogical)	users themselves. This bottom-up approach ensures motivation among users to use and improve the system. The technological method is a centrally hosted Oracle database. eKool is platform-independent and accessible by every major browser.
Implementation	The web application is centrally hosted but the implementation is done by the potential users at each school. The project is voluntary and bottom-up which means that the data stored in the database belong to the school, the school decides the content and how it will be published. Thus, implementation depends on how each school, school leader, teacher, parent and pupil will use the application.
Specific results	eKool is now used by about 13 000 teachers, 63 000 students and 74 000 parents. Some schools outside Estonia have started to use and test eKool as well.
Impacts	eKool has increased teachers' awareness of and demand for a good ICT infrastructure. In four years almost every teacher who has been involved with eKool (about 80% of Estonian teachers) are now using the Internet more widely. Moreover, the school as an institution has become more open towards parents, and these in turn are more aware of their children's learning results. Finally, the school management has a better overview of grades and attendance.
Lessons learnt	The eKool project has shown that it is easier to engage users, if a bottom-up approach is applied. The voluntary participation of schools and teachers and the possibility to shape the content of the database in accordance with own needs ensures that the content is concordant with teachers' knowledge and experience. By being able to constantly update the database the information is more precise and newer than if a top-down approach had been used. Moreover, the private sector has been involved in the project and ensured usage of a feasible business model.

Category	***Teacher Training***
Title of the initiative	Teachers' ePortfolio
Contact details including weblinks	http://eportfoolio.opetaja.ee http://www.htk.tlu.ee
Start- and end-date	01. Oct 2005 – 31.12.2007
Objectives of the initiative	• To support teachers' professional development with the help of an innovative web-based ePortfolio system. • To develop the educational technology competences of university staff and teachers through all three levels of teacher education — initial training, induction year and continuing professional development.
The motivation of the initiative	Estonian teachers use ICT mainly for activities with their students whereas the role of technology in professional development planning has hitherto been insignificant. Recently approved professional qualification standards for teachers are not known and not used by teachers.
Level of implementation	National.
Target group	Students, university staff, mentors and teachers involved in all three levels of teacher education: initial TE, induction year programme, in-service teacher

	training.
Budget	Not available.
Participants	Tallinn University (coordinator), Haapsalu College, University of Tartu, State Examination Board, National Association of Teachers.
Short description of the project	The ePortfolio is a project for the development of a new open-source e-portfolio tool (with the acronym DIPO) and its implementation in the context of teacher education. ePortfolio demonstrates a practical way of making use of professional qualification standards and modern Web 2.0 tools for planning, documenting and presenting a teacher's own professional development.
Methods applied to reach the objective (technological and/or pedagogical)	The technological method of the project is a participatory approach. The pedagogical methods included the development of a new reflection model (called Saka circle) that is intended to guide the user of ePortfolio through five steps of deep reflection on one's own professional development experiences.
Implementation	The implementation was structured around an analysis of existing e-portfolio platforms, design sessions with representatives of all target groups, pilot testing of early prototypes in the context of school practice of student teachers and extensive testing of later versions of ePortfolio within the induction year programme. Moreover, the in-service teacher training course DigiCommunity was used.
Specific results	More than 800 registered users and 220 in-service teachers passed the 40-hour course on professional development planning with ePortfolio.
Impacts	ePortfolio is implemented as an official virtual learning environment for initial teacher education and the induction year programme at Tallinn University and the University of Tartu. The follow-up project is in the planning phase. ePortfolio software has been implemented in several pilot projects in domains other than teacher education, such as adult guidance, vocational training of telecommunication technicians and of HRD specialists in the business sector. Inspired by a former project, called OPAH, a task force group has been formed to explore the possibilities of providing a free e-portfolio service to every citizen of Estonia as a part of the citizens' portal eesti.ee.
Lessons learnt	The project has shown that the best way to implement new technology-enhanced learning systems and tools is based on clearly defined needs, an innovative pedagogical model, cooperation between key actors in the field (in our case, teachers' union, state examination board and all major teacher education institutions), synergy of pedagogical research and software development, and a long-term sustainability strategy.

FINLAND

Category	*e-Skills and Use of ICT in Education*
Title of the initiative	Netlibris
Contact details including weblinks	www.netlibris.net
Start- and end-date	1996 – 2007
Objectives of the initiative	To promote: • ICT skills for boys and girls; • enrich reading experiences; • collaborative learning methods and individual curriculum implementation; • building communities of readers. Initially the objectives were to: • encourage and challenge good readers; • make pupils read more and different books; • make pupils share their reading experiences with other book lovers; • increase reading among other pupils by using the pupils' resources in the classroom and at the school.
The motivation of the initiative	The original project is designed for students who were like Dahl's Matilda: boys and girls who loved reading and did not have many academic challenges at school. Now the programme caters for all kinds of readers: those with special educational needs and challenges, pupils with Finnish as their second language and whole classes as readers, etc. The aim is also to make pupils more responsible and empowered owners of their own studies of literature by making it possible for them to choose the literature, setting goals, designing activities and evaluating the process.
Level of implementation	Local, regional, national and international.
Target group	Pupils of all levels and teachers.
Budget	Currently €8 000 a year.
Participants	Schools, pupils, teachers, librarians and teacher educators.
Short description of the project	Netlibris is a pedagogic method of teaching literature. Netlibris schools collaborate in offering an enriched literature programme to selected groups of students. The process consist of asynchronous literature discussions, virtual and face-to-face reader group meetings, teachers working in virtual teams as tutors, collaboration between teachers, librarians, teacher educators and schools. Netlibris has provided professional development courses for teachers locally and nationally. There are more than 200 teachers involved in developing the programme.
Methods applied to reach the objective (technological and/or pedagogical)	The core of the Netlibris method is asynchronous threaded discussion of literature among the members of the group, and the use of ICT forms an active part of this process. Every group has members from 2 to 4 schools and the discussion is centred on the pupils. Netlibris is also a vivid network of teachers, librarians and teacher educators. The pedagogic discussion forum is very active in developing the method.

Implementation	The Netlibris website contains a database of books, information about the reading programme and a collaboratively published online magazine. In-service training and peer support is provided in collaborative networks of Netlibris schools. The new "Reader Diploma Programme" provides individual readers with the challenge and opportunity to receive an award for high-quality achievement as readers.
Specific results(number of users, new learning methods, improved digital skills)	There are more than 200 teachers and over 2 000 students/year using Netlibris, including also groups for struggling readers. Annually more than 70 000 messages are posted in Netlibris discussion forums. The spread to new kinds of users has, for instance, included a group of Swedish-speaking Finns who now have their own Netlibris programme involving most of the Swedish-speaking minority schools.
Impacts	Netlibris has become a "brand name" for a pedagogic method of teaching literature and has had an impact on the national and local curricula for teaching literature. In seven years the concept has spread not only geographically but also from the primary-school level to the secondary and upper-secondary schools and from gifted pupils to all levels of readers. Netlibris developers have been developing similar projects together with the British Council and given courses for teachers in several countries: Hungary, the Czech Republic, Ukraine, Estonia. The British Council started its international Literature Circle programme in more than 10 countries in 2007.
Lessons learnt	The concept of Netlibris is a low-cost easily transportable method used across various user groups, subjects and cultures. The technology required is available in many countries. The most important ingredients are the network of dedicated teachers and the opportunity for collaboration and in-service training.

Category	***Teacher Training***
Title of the initiative	Virtual Teacher In-Service Training (KenGuru)
Contact details including weblinks	National Board of Education http://www.edu.fi/kenguru/
Start- and end-date	2005 – 2007 (time for building the service)
Objectives of the initiative	• To provide online resources for teacher in-service training on pedagogical use of ICT.
The motivation of the initiative	Almost all teachers have basic technical skills. 50-60% of teachers have participated in training aimed at improving pedagogical ICT skills, thus indicating that teachers want to improve their ICT skills for pedagogical use.
Level of implementation	National and local (and individual).
Target group	Teachers (at all levels), adult learners.
Budget	€200 000.
Participants	Schools, administration, research institutions, ICT companies.

Short description of the project	The KenGuru project includes a large package of online material on pedagogical use of ICT available from 2007 onwards. Resources are targeted on teachers wishing to use ICT in education. The main contents are: • ICT Literacy (skills to use ICT as a tool in the learning and teaching process). • Media Literacy and Internet Safety. • Skills to acquire and create knowledge. • Learning-process-based planning of teaching with ICT with 20 good cases. The online resources were designed to provide self-directed learning resources for the teachers who wish to study pedagogical ICT skills on their own. Also all in-service training organisations may use the resources for free.
Methods applied to reach the objective (technological and/or pedagogical)	The pedagogical method and aim is to teach teachers a new e-learning method that involves conducting the online learning process via learning tasks. The material itself is based on the same scheme, while it gives an overview of the content mentioned above.
Implementation	In order to ensure implementation of the service it was promoted at several teacher events and in in-service training, and peer-to-peer recommendation was used. Moreover, the resources were designed from the start to be easy to use.
Specific results	Currently about 20 000 visitors/month, which is more than initially expected.
Impacts	Since KenGuru is a new service, the results will be followed closely. The expected results are: to recapitulate and rehearse previous in-service training, train untrained teachers with new skills via learning by doing (on the Internet).
Lessons learnt	There seems to be a larger demand for this kind of service for teachers than hitherto anticipated. Due to unexpectedly large demand, in the near future the service needs to be translated into other languages.

Category	***ICT Infrastructure***
Title of the initiative	Avoinamk.fi eLearning — Information Portal for Finnish Open Polytechnic education
Contact details including weblinks	www.avoinamk.fi
Start- and end-date	1.9.2005 – 31.10.2007
Objectives of the initiative	The main objective was to build a portal for the Finnish open polytechnics. The primary aim was to provide a single point of access for marketing the courses. Another important target was to provide tools for handling the enrolment and participation process from start to finish.
The motivation of the initiative	All the Finnish polytechnics had their own webpages for marketing their courses and handling the enrolment process. A centralised portal was seen as a definite advantage for students.
Level of implementation	National.
Target group	Adult learners, students, immigrants.

Budget	About €150 000 for purchased services + internal project management expenses.
Participants	All Finnish polytechnics (28).
Short description of the project	The portal contains links to the webpages of all open universities of applied sciences and information useful to both students and personnel. The eServices system of the portal provides the following main functions: 1. Searching for suitable courses. 2. Enrolling for a course. 3. Handling the enrolment (accept/reject). 4. Registering the grade which is visible to the student. 5. Giving feedback about the course. 6. Managing the billing information. 7. Course basket and study plan for the student. 8. Making course requests.
Methods applied to reach the objective (technological and/or pedagogical)	The functionality of the portal was primarily defined by a team consisting of personnel from several Finnish open polytechnics. This was to guarantee the portal's applicability to actual needs and suitability for all participating organisations. Much attention was paid to usability issues: graphical layout and ease of operation.
Implementation	The portal was implemented in connection with the Finnish Online Polytechnic portal (www.oncampus.fi). The eServices system was embedded in the portal seamlessly. The portal and the eServices implementation were acquired from different vendors.
Specific results	Since then adoption has been quick: as of writing there are about 350 courses available and 380 registered students in the system at the beginning of the project.
Impacts	From the view of marketing the courses, the system has been a great success. The project as a whole demonstrates that it is entirely possible to achieve common solutions to common problems. It encourages the development of shared information systems or other aims in the future as well.
Lessons learnt	There are several factors which define whether an information system succeeds or fails. Commitment is the most important one: both the customer and the vendor must be really committed to the project. End users must be involved when the system requirements and specifications are drawn up. Open communication during all phases and between all parties is required as well.

FRANCE

Category	*Learning Management System*
Title of the initiative	PrimTICE
Contact details including weblinks	http://primtice.education.fr jean-serge.vigouroux(at)education.gouv.fr
Start- and end-date	Start: the project was written in 2003–2004, and really begun in 2005. End: still going on
Objectives of the initiative	• The PrimTICE project was set up to enable the identification, description, indexing and pooling of ICT uses in primary education. The PrimTICE project highlights teachers' best practices on the use of ICT.
The motivation of the initiative	Encourage and give value to the use of ICT in primary education.
Level of implementation	National and local.
Target group	Teachers.
Budget	Around €20 000/year since 2005 + staff.
Participants	Teachers, inspectors, ICT advisers, teacher trainers.
Short description of the project	PrimTICE is, first and foremost, a directory of several hundred teaching scenarios involving the use of ICT, from reception classes to the third stage of primary education in France, that is, for 3 to 11 year-old pupils. It enables teachers to benefit from the experience of their colleagues, to create their own sessions, sequences and projects. The scenarios are written by teachers, for teachers. The PrimTICE portal has a dedicated search engine. Within the PrimTICE framework, the Department of ICT (of the Ministry of Education) has initiated a number of operations to support the use of ICT.
Methods applied to reach the objective (technological and/or pedagogical)	The project is managed within the educative community; the teachers, inspectors, etc. have specific tasks. There is a writing guide on the PrimTICE website: it helps teachers and inspectors to write and to validate the teaching scenarios. Triggering operations allow them to pick up scenarios (interactive whiteboards in 2 000 classrooms, computers, interactive whiteboards together with laptops).
Implementation	The steering committee defines the overall strategy and methods deployed and meets twice a year. The project cell plays a supporting role in project-management activities, which are ensured by the Department of ICT (of the Ministry of Education). This group consists of ICT supervisors and coordinators, teacher trainers, etc. A flyer describing the project is distributed as often as possible. The PrimTICE tool enables teachers to practice eLearning, but it can also be used to train teachers. Some scenarios are created during teacher training sessions. Collaboration with the *Agence des usages* (French National Centre for Educational Documentation) for the production and dissemination of audiovisual material relating to classroom experiences for use on digital media players.

Specific results	• 922 teaching scenarios in the database. • 20 000 to 25 000 distinct visitors every month. • 50 *départements* out of 100.
Impacts	An impact study was published in early 2007. It showed that when teachers know PrimTICE they like it and use it, but PrimTICE is not widely known.
Lessons learnt	More communication on PrimTICE is needed. Primary teachers' work and inspectors' work is promoted through the PrimTICE project. It allows teachers to engage in exchanges on their ICT uses. It gives an overview on what is happening in France regarding ICT in primary education. PrimTICE can be interconnected to virtual learning environments, and can be easily connected to the LRE (Learning Resources Exchange platform).

GERMANY

Category	*Teacher Training*
Title of the initiative	Online-supported distance education for further training of teachers of German as a second language
Contact details including weblinks	Susan Kaufmann FIF — Förderung von Integration durch Fortbildung c/o KEB Rheinland-Pfalz Welschnonnengasse 2-4 D-55116 Mainz kaufmann(at)fif-rlp.de http://www.fif-rlp.de and http://moodle.fif-rlp.de
Start- and end-date	June 2005 – November 2007 (end of implementation). The programme is being continued.
Objectives of the initiative	The objective of the initiative is to train teachers to give "integration courses" for migrants as specified in the 2005 Immigration Act.
The motivation of the initiative	Participation in teacher training is mandatory for all teachers in integration courses without a university degree in second- or foreign-language acquisition and teaching. The motivation for doing this via ICT-based distance education was to make the training more flexible and adaptable to individual needs while minimising travelling costs and increasing the general ICT competences of the teachers involved.
Level of implementation	National/regional: primarily Rhineland-Palatinate but also other parts of Germany, especially southern and eastern regions.
Target group	The target group consists of teachers of German as a second language most of whom are already teaching in "integration courses" funded by the Federal Agency for Migration and Refugees. Many are women with a migration background themselves.
Budget	Approximately €150 000 in 2007.
Participants	(1) the Association of Adult Learning Centres. (2) Catholic Adult Education. (3) Protestant Adult Education. All of these in Rhineland-Palatinate.
Short description of the project	The training for teachers of "integration courses" comprises 32 curricular building blocks in 4 modules on subjects like migration, intercultural learning, German as a 2nd language, didactics, language for special target groups. The further training is based on the ICT learning platform, self-study materials and several one-day attendance sessions. There are two different versions of the further training course, depending on the teacher's experience/qualifications. Participants get to know each other at the attendance sessions and are introduced to the learning platform. All are tutored and have to work through the learning platform.
Methods applied to reach the objective	FIF uses the Moodle platform for achieving its objective. Moodle offers virtual "classrooms" in which participants find learning activities and materials. FIF uses

(technological and/or pedagogical)	the following: fora, wikis, surveys for exchange of information and cooperation, activities and feedback for processing and reflection. Pedagogically the Moodle platform is supplemented by a monthly attendance session where ideas and learning points can be discussed.
Implementation	To ensure implementation, efforts were made to have the "FIF online-supported distance education for further training of teachers of German as a second language" accredited by the Federal Agency for Migration and Refugees during a period of intensive guidance and quality control. The end result offers teachers of German as a second language an ICT-based possibility to acquire the obligatory professional qualification. The initiative is listed on the webpage of the National Centre for Distance Education so that everyone can access information on it.
Specific results	In 2007, 48 teachers of German as a second language successfully finished their further training. Another 70 are currently being trained.
Impacts	At a personal level participants undergo remarkable learning progress and a resulting change in teaching practices and professional status. At a professional level the initiative has gained much recognition among colleagues and institutions for its high quality.
Lessons learnt	The most important lessons learned concern the major significance of tutoring. Participants' motivation and contentment appear to depend to a high degree on the presence, competence and skills of the tutors. This is most notable amongst long-term teachers who are tired of training that does not really offer anything new. The platform itself was also found to be instrumental in bringing the group together. Continuously being in contact with each other and the tutor via the platform and meeting monthly appeared to be a very good combination. Another lesson learned refers to the enormous heterogeneity of the target group. ICT-based training is clearly the appropriate approach to tackle the diversity of learners' needs, motivations and capacities.

Category	***ICT Infrastructure***
Title of the initiative	Arbeitsräume im Internet für Schulen (ARIMIS)
Contact details including weblinks	Landesinstitut für Schulentwicklung Rotebühlstraße 131 70197 Stuttgart Germany http://www.arimis.de/ hans.zaoral(at)ls.kv.bwl.de
Start- and end-date	April 2005 – 31 December 2008
Objectives of the initiative	• To implement and improve distance learning based on learning management systems in schools across Baden-Württemberg. To achieve the aim, technical, didactical and pedagogical requirements of distance learning need to be identified and tested. • The project identifies best practice to compile guidelines for teaching and learning, specifying technology and producing or using content for eLearning.

The motivation of the initiative	Some teachers working in vocational and secondary schools had already started to work with distance-learning modules and LMS and they voiced the need for exchanges with other teachers and for assistance in integrating distance learning courses within their LMSs (predominantly the open source system Moodle).
Level of implementation	Regional: Baden-Württemberg.
Target group	Vocational and secondary school teachers.
Budget	€1 850 000.
Participants	Teachers, administrators of web servers. Publishers of distance-learning resources and scholars of regional universities have been involved on a supportive basis.
Short description of the project	ARIMIS is about integrating distance learning with LMS, and a web-based space and coordinated technical support has been offered to a group of schools. In the course of the project technical, didactical and pedagogical requirements for distance learning are being identified. Accordingly, existing technical solutions are being evaluated to see if they correspond to the intentions of the respective types of schools and classes. Teachers, administrators and heads of school departments are participating actively in the testing of learning management systems. Cooperation with professional publishers provides publishers and teachers with the opportunity for mutual exchange.
Methods applied to reach the objective (technological and/or pedagogical)	The project team and the regional school network company provide technical support and a unique version of Moodle that has been modified according to the needs of the schools, with a special focus on data protection. Teachers of the same subject collaborate in workshops, coordinated and supported by the project team, to test web-based courses and modules within their respective LMS. Learning objects offered by publishers are customised in content packages for use and evaluation in classes.
Implementation	Coordinated as well as individual cooperation in the form of workshops, lectures, visitations and evaluation sustain collaboration with the project participants. The project can be modified to suit the teachers' needs. Cooperation with regional institutions ensures compliance and sustainability.
Specific results	More than 60 schools participate actively in the project and have developed around 50 online lessons so far. Technical infrastructure and knowledge management at schools have improved. The website www.elearning-bw.de made results available to the public.
Impacts	Publishing good practice emerging from the project and from connected institutions demonstrates nationally the state of eLearning in Baden-Württemberg. The evaluation of results serves to advance the current project as well as monitor eLearning initiatives and projects with schools. The implementation of learning management systems in schools at the same time assists and accelerates the development of schools according to Governmental premises (such as profiling, use of new technologies, etc.).

Lessons learnt	Teachers participating in the project have been willing to develop online lessons at their own expense. However, one of the most important lessons learned from the project is that teachers cannot possibly develop professional courses in addition to their regular classes. Adequate and sustainable eLearning in schools requires central coordination and facilitation of material. Distance-learning products should be customised to teachers' needs, i.e. offer more products that can be combined flexibly and uploaded easily into different learning management systems such as Moodle. Moreover, schools need to be provided with the means to deploy licensed material. The school head should encourage this development and the teachers involved, and the teachers should structure lessons around a student-centred approach.

GREECE

Category	*New Learning Environment*
Title of the initiative	Greek School Network (a platform of eLearning and telematic services for the Greek educational community embedded in GSN)
Contact details including weblinks	Dr Michael Paraskevas mparask(at)cti.gr URL: http://www.sch.gr, email: info(at)sch.gr
Start- and end-date	From 01.01.03 to 01.01.08
Objectives of the initiative	The school network is used by a large number of teachers, students and administrative staff to: – communicate with each other by exchanging experiences in using educational software in their everyday work, scientific articles, exercises, pedagogical scenarios; – be informed from several websites about the subject they teach; – be informed about administrative subjects; – download scenarios for educational use of ICT in everyday lessons; – use advanced services such as teleconferencing, asynchronous open distance learning and Video on Demand, as advanced means for facilitating the work of Greek teachers.
The motivation of the initiative	There was a need to initiate official support for the educational community in the teaching/learning process by offering advanced telematic/e-learning services.
Level of implementation	National network.
Target group	Teachers, students, administrative staff.
Budget	€8 002 114.
Participants	The following institutions participate in implementing and operating the GSN: Ministry of Education and Religious Affairs, Research Academic Computer Technology Institute (RACTI), Institute of Communication and Computer Systems (ICCS/NTUA), Aristotle University of Thessaloniki, Democritus University of Thrace, National & Kapodistrian University of Athens, Aegean University, University of Thessaly, University of Ioannina, University of Crete, University of Macedonia, Technological Education Institute of Athens, Technological Education Institute of Thessaloniki, Internet Service Provider: Greek Research and Technology Network.
Short description of the project	The Greek School Network (GSN) connects schools, teachers, students, administrative staff and libraries across Greece. The GSN network is currently being massively upgraded to broadband. GSN provides ICT-related services to teachers and partly to students, such as e-mail, mailing lists, caching, proxy, web access, web filtering, webpage generator, web hosting for schools' and teachers' sites, discussion forums, 2 network portals — for teachers (www.sch.gr) and for students (http://students.sch.gr), personal calendar, newsgroups, chat, helpdesk, network statistics, web file folders — virtual drives, electronic cards, monthly official e-magazine (http://e-emphasis.sch.gr), etc.

	The GSN has recently incorporated the following cutting-edge services: remote management of the school PC labs, activation of the IPv6 protocol, QoS service (guaranteed quality of services), digital signatures (PKI/CA), application hosting services (ASP). Moreover, the GSN provides real-time broadcasting of events, a portal for providing various educational open software, video on demand, asynchronous tele-education — eLearning platform, electronic class administration, synchronous tele-education.
Methods applied to reach the objective (technological and/or pedagogical)	GSN is a closed educational Intranet — students' security is a primary issue. Central infrastructure services: Domain Name Service (DNS), Directory Service (LDAP), distributed helpdesk, online statistics, GIS schools' system). Administration services: users' administration, network administrators' documentation, network operation monitoring, network security (CERT), remote administration of school routers. The development of all ICT-based services is being implemented with open source software and is php-based — a significant contribution to the OSS community. The eLearning platform included the philosophy of social constructivist learning pedagogy. Last but not least, GSN users enjoy ongoing support and training concerning the services offered.
Implementation	Integration of 12 implementation entities in various Greek areas.
Specific results	Interconnection of 13 830 schools, 2 628 administrative units, 494 school, 71 public and 29 municipal libraries, 60 general national archives. Personal access for 63 979 teachers and 12 969 students. Sound improvement in the digital skills of the educational community through the aforementioned actions.
Impacts	The educational community is becoming more familiar with new and advanced electronic services. The incorporation of selective services in the teaching/learning process makes eLearning more useful in everyday teaching. New teaching and learning needs have been facilitated.
Lessons learnt	Internet applications are beneficial for the educational process and teacher training, when they: – satisfy actual needs; – comply with the curriculum; – have been properly designed; – are effective; – are constantly supported. As for teachers, it is vital that they are: – properly informed; – know how to use the applications; – want to use the applications; – are interested in enhancing the teaching process.

HUNGARY

Category	*Learning Management System*
Title of the initiative	Utilisation of the Moodle Course Management System (CMS) in Secondary Schools
Contact details including weblinks	Leövey Klára Gimnázium (LKG) 1096 Budapest, Vendel u. 1. Tel.: (06-1)-215-9590 Fax: (06-1)-215-6258 School websites: www.leovey.hu http://www.e-lkg.hu/ Moodle sites: http://server.lkg-bp.sulinet.hu/htdocs/moodle/ http://nov.lkg-bp.sulinet.hu/moodle/
Start- and end-date	01.02.2006 – ongoing
Objectives of the initiative	• To introduce and implement a Learning Management System (Moodle in particular) including Course Management Systems and Virtual Learning Environments.
The motivation of the initiative	Improving learning experiences and effectiveness while also compensating the limited supply of classes in adult education. This is feasible because a number of useable educational contents is already available and access to computers and the Internet is not an issue anymore (computer penetration is at 99%, Internet penetration at 98% in the homes of LKG students).
Level of implementation	The project started as a pilot, but became institution-wide in the process.
Target group	Regular secondary school students, adult students, teachers.
Budget	None. Participants acquired the necessary knowledge and created the infrastructure in their free time.
Participants	The school (Leövey Klára Gimnázium), the National Institute for Public Education and the Centre for Multimedia in Education, Faculty of Science, Eötvös Loránd University.
Short description of the project	The project aims to introduce an e-learning framework at the secondary school involved. The framework coordinates and tracks the work of 60 teachers and over 850 students, 210 of whom are adults. The learning management system supports development of learning materials, presents the material, keeps track of students and their achievements, logs activities, evaluates activities, provides a communication interface, and provides a collaboration interface. The school uses Moodle and work is currently organised as follows: the IT class provides the tool, which enhances the learning experience and teaching effectiveness. Other subjects provide the goal, content, practice and feedback. Competent IT knowledge must be used in non-IT classes also.

Methods applied to reach the objective (technological and/or pedagogical)	Training in various subjects regarding Moodle and social constructionist pedagogy.
Implementation	Implementation was achieved by incorporating the necessary software into the school IT infrastructure and training staff and students.
Specific results	For the pilot project: 80 students/5 teachers, 5 subjects/6 courses. Current status: 500 students/20 teachers, 10 subjects/60 courses. New learning methods: blended learning and social construction. Digital literacy is improved because ICT skills are used in all classes, not only dedicated ones. Thus knowledge is greatly deepened and collaborative working is strongly encouraged.
Impacts	The school started to transfer to Moodle as a standard tool for organising education. Feedback has been positive from all affected parties.
Lessons learnt	Choosing the IT background correctly is crucial in delivering the infrastructure in time (LAMP -- Linux, Apache, MySQL, PHP as opposed to a Novell NetWare-environment).

Category	***New Learning Environment***
Title of the initiative	Learning with Lego-Robots
Contact details including weblinks	Tamas Gilicze tamas(at)bjg.hu Maria Giliczene Laszlo Kokai marika(at)bjg.hu www.bjg.hu/lego. Batsanyi Janos Secondary Grammar and Technical School Csongrad
Start- and end-date	Learning with Lego-Robots is a continuous project.
Objectives of the initiative	• To enhance technology learning amongst students by actually using it.
The motivation of the initiative	To experiment with learning approaches to technology by giving children the opportunity to create something physically themselves and making them understand how the computer can be used in this process.
Level of implementation	Local: the activities and work in the school. Regional, national, international: the championships.
Target group	Direct target group: students, teachers, and older students as mentors. Indirect target group: parents, companies, potential sponsors, etc.
Budget	Not available but each class needs: bigger tables (suitable for 3 to 4 children) for the building, constructing activity, one computer for each group of children, and Lego Mindstorms (RCX or NXT) kits.
Participants	Schools, organisations, groups, after-school clubs which deal with children, youngsters.
Short description of	The Lego-Robots project is about the history and basics of robotics, building

the project	practice, drives, stability and cognition of GUI interface. After some time the children will be able to programme the robot and make different kinds of robots in line with theoretical tasks. The project can follow children and youngsters to the end of secondary school and thereby gradually improve their knowledge and skills of programming — even for scientific observations. At the very beginning the teachers have “traditional” teaching roles, but later on they become collaborators and organisers in the teams.
Methods applied to reach the objective (technological and/or pedagogical)	New learning paradigms including project methods, challenges, active participation of students, self-supporting research, peer-to-peer activities, collaborative learning, learning through hands-on and exploratory play.
Implementation	Action to ensure implementation takes place at all levels by facilitating networks and championships. Children learn about the Logo programming language, different kinds of data gathering are used, measuring devices. During and at the end of the project the students can share their ideas with other teams and learn from each other. The following measures ensure sustainable development: parents’ feedback, competitions, personal meetings, staying in touch via the Internet.
Specific results	Some specific results are: children of all social backgrounds can participate, using the diverse experiences of the children and increasing peer-to-peer learning. Most of the children are interested in trying out robot building and programming. Afterwards they can choose whether they want to gain deeper knowledge in this area and participate in longer projects or not.
Impacts	During the activity students create “tangible works”, in this way they can experience the delight of creating and can feel real success. This initiative is an effective tool for forming cooperation between children and giving them useful experiences in project work and teamwork. The project has helped the development of key competences such as: comprehension competence, reflection competence.
Lessons learnt	Robotics is an effective way for teachers to cover important areas of their science, technology, engineering, maths curricula and it has been possible to integrate several scientific disciplines ranging from technical knowledge of speed and gears through ICT skills of programming and algorithm structures to creative problem solving. Moreover, some new learning paradigms have come to the forefront: self-supporting research, searching for experts, professionals, brainstorming. When children actively construct things in the physical world it helps them to build knowledge in their minds.

Category	***New Learning Environment***
Title of the initiative	House of the Future — School of the Future Digital Storytelling
Contact details including weblinks	Jövő Háza Központ Kht. Tamás Barát 1026 Budapest Kis Rókus u.16-20 www.millenaris.hu/jovoiskolaja www.diok.hu

Start- and end-date	2007.10.01 – 2008.07.01
Objectives of the initiative	• To teach students appropriate and effective use of computers.
The motivation of the initiative	To improve students' knowledge and relevant skills by using ICT tools.
Level of implementation	National.
Target group	Students, teachers.
Budget	Not available.
Participants	Schools.
Short description of the project	To popularise digital storytelling, an educational method currently unique to educational institutions in Hungary. Participants are introduced to the necessary theoretical knowledge and methodology. During a workshop, participants create short digital films as a demonstration of self-directed learning. They also receive a digital toolkit they can take home and use independently in the future.
Methods applied to reach the objective (technological and/or pedagogical)	Self-directed learning, cooperation, teamwork, group work, project work.
Implementation (actions taken to ensure implementation)	During the training course participants are introduced to the basics of digital filmmaking. Initially a storyboard is written based on a story chosen by the participants, followed by the creation of a short film using Windows Movie Maker software. All films are viewed and evaluated by the entire group of participants.
Specific results	5 000 students/year.
Impacts	Not available.
Lessons learnt	Not available.

Title of the initiative	**House of the Future — School of the Future Teacher Training**
Contact details including weblinks	www.millenaris.hu/jovoiskolaja Jövő Háza Központ Kht. Tamás Barát 1026 Budapest Kis Rókus u.16-20
Start- and end-date	2007.10.01 – 2008.07.01
Objectives of the initiative	• To give teachers the opportunity to take part in a training course free of charge which introduces them to practical ICT methods they can then use in the classroom.

The motivation of the initiative	To make all teachers familiar with modern teaching methods which enable students to acquire new knowledge through ICT.
Level of implementation	National.
Target group	Teachers.
Budget	Not available.
Participants	Schools.
Short description of the project	The project consists of a training course which includes the following main elements: • practical use of the interactive blackboard; • open tenders and competitions, other possibilities of procuring ICT tools; • software applications in practice; • practical use of online community portals.
Methods applied to reach the objective (technological and/or pedagogical)	Self-directed learning, cooperation, teamwork, group work, project work.
Implementation	The project was implemented via a training course entailing presentations on information and communication technologies in education, demonstrations of completed relevant projects, grant possibilities, future technologies, educational software and practical use of digital curricula in the classroom.
Specific results	2 000 participants/year.
Impacts	Interest in the project is increasing steadily. Participating teachers can share their experiences at 4 or 5 conferences a year.
Lessons learnt	Not available.

LUXEMBOURG

Category	*Digital Literacy*
Title of the initiative	eBac eLearning Platform
Contact details including weblinks	epilotage(at)ebac.lu http://www.ebac.lu
Start- and end-date	July 2005 — no end
Objectives of the initiative	• To create an eLearning platform that gives adults who dropped out of the traditional school system before the baccalaureate the possibility to take a BA in a blended learning structure with 25% presence learning and 75% distance learning.
The motivation of the initiative	The drop-out rate for traditional evening classes is very high (about 90%) as it is very difficult for adults to combine studies, family and job. As presence learning showed its limits at this level, the Ministry of Education, in collaboration with mySchool!, decided to create the modular and blended-learning system of the eBac.
Level of implementation	At this moment some 80 eLearners are preparing for their baccalaureate and are therefore subscribed to the eBac.
Target group	Basically adults who left the traditional school system without a diploma. Due to the increasing interest of Luxembourg schools in the eBac-structure, the eLearning platform will soon be available for students from the age of 16.
Budget	As the eBac depends on various departments, it is very difficult to give an exact amount for the budget.
Participants	mySchool!, the pedagogical platform of the Ministry of Education in Luxembourg, and eTeachers coming from different traditional schools.
Short description of the project	The eBac is a blended distance eLearning platform which allows the eLearners to prepare for the baccalaureate online without being forced to attend classes at a specific time and specific place. Traditional presence classes are made available to eLearners but in order to allow them maximum flexibility such classes are optional. The baccalaureate itself takes place in a traditional school together with the students who attended presence classes. The eLearners receive exactly the same diploma as the traditional learners.
Methods applied to reach the objective (technological and/or pedagogical)	Technically all the material of eLearning subjects is online and takes the shape of a website that can be accessed by the eLearners at any time and from any place. The websites are powered by the pedagogical platform mySchool!. The pedagogical needs are exactly the same as in a traditional school.
Implementation	Implementation takes place at the traditional schools as an extra service and this is supplemented through a steering committee.
Specific results	The most interesting thing is that some traditional schools have contacted the eBac steering committee to adopt the modular and far more flexible learning schema in their own school. Targeting the good students rather than the weak

	implies an opportunity to proceed faster and in a more autonomous and constructivism-orientated way.
Impacts	Although eBac has just started it is possible to see how the new modular system made traditional schools rethink some part of their own pedagogical approach and to plan possible integration of a modular system into their own school. Hence, the lessons from eBac might have an impact on the structure of adult learning elsewhere.
Lessons learnt	In blended adult learning, self-evaluation must be proposed but also has to stay optional. There is no reason for a strict stance since temporary students will drop out quickly and all the others who recognise the worth of their learning do not need watching over to do a serious job. The presence lessons are very important because eLearning without human contact leads to drop-out. Skype and VoIP form the core of efficient guidance of the eLearner by the eTeacher.

MALTA

Category	*New Learning Environment*
Title of the initiative	Rescue La Vallette — An Adventure in Time
Contact details including weblinks	manuel.zammit(at)schoolnet.gov.mt http://skola.gov.mt/ictsec/gamesite/scsp.html
Start- and end-date	Started beginning of 2007
Objectives of the initiative	• For students to work collaboratively in a fun and motivating environment and to acquire ICT skills in the process.
The motivation of the initiative	To show that there are other ways of teaching a skills-based subject. Using a scenario and an interesting storyline, students can learn ICT skills in a context they understand and are familiar with.
Level of implementation	The game has a historic orientation and is set in a Maltese context so originally it was intended to be implemented at just the national level. However, following the EU eLearning Award, teachers from other countries are also trying it out.
Target group	Students aged 10 to 13. Last year in primary to first years in secondary schools.
Budget	Not available.
Participants	Primary and secondary schools.
Short description of the project	The La Vallette Adventure is a project using storytelling, games and quests to make pupils use the available technology of Word, Excel, PowerPoint, the Internet and email to carry out tasks.
Methods applied to reach the objective (technological and/or pedagogical)	The basic methodology is group work. The four members of each team have a particular role to perform although as a team they also have to decide on best options. The game follows a similar method employed in WebQuests although the tasks are not set at the start of the quest but unveiled as the learner progresses through the game.
Implementation	At the moment the game is not part of any formal system. Anyone who would like to try out a different method of teaching ECDL skills is welcome to try the game.
Specific results	A thorough evaluation is still to be implemented.
Impacts	The main impact is a new and better way of teaching ICT skills.
Lessons learnt	The pedagogy is what drives the technology and not the other way round. A shift in methodology is required where the teacher becomes a supporting actor rather than the main guru on the stage. The teacher still has a very important role to play as the learning outcomes can be influenced by the enthusiasm shown by the teacher. Documentation suggests a number of supplementary activities for the learners. Much more than the suggested activities can be done with a little creativity from all the participants.

Category	*New Learning Environment*
Title of the initiative	Euro Changeover
Contact details including weblinks	franco.costa(at)gov.mt, http://skola.gov.mt/euro/
Start- and end-date	7 September 2007 – December 2008
Objectives of the initiative	• To train children in the primary sector to convert from Lm to Euro and vice versa. • To get used to the different Euro coins from different countries. • To give information related to the Euro.
The motivation of the initiative	Changing the monetary system of a country is a big change which can be difficult for children to grasp and the aim was to resolve this issue in an innovative manner.
Level of implementation	National.
Target group	Pupils in primary schools.
Budget	Lm3 000 — €6 988.12.
Participants	Public employees and schools.
Short description of the project	The Euro Changeover project is an educational website which includes five interactive games and was launched to facilitate the concept of conversion from Lm to Euro for all primary schools. The interactive website incorporating five games: 1. Euro Converter/calculator 2. Vending Machine 3. Jig-saw Puzzle 4. Memory Game 5. Fly to the Euro Countries
Methods applied to reach the objective (technological and/or pedagogical)	Technological methods have included websites and online games. The pedagogical aspects were integrated through the interactivity of the games. The games are based on current pedagogical principles which involve students in an interactive and constructivist approach which encourages independent learning.
Implementation	Students access the website during their lessons and from home through the school's main portal <http://skola.gov.mt/euro/>.
Specific results	Number of users/website loads: 124 955. New learning methods: learning through playing. Improved digital skills: students improve their ICT skills through the interactive features of the games.
Impacts	Students will become familiar with the Euro prior to its actual implementation.
Lessons learnt	Given the high participation rate of students, the department finds that the project was a complete success due to the pedagogical aspects, interactivity, interface and design of the website and games.

Category	*Teacher Training*
Title of the initiative	One2one In-Class Teacher Training Programme
Contact details including weblinks	http://schoolnet.gov.mt/ictprimary/supportinitiatives/one2one.html
Start- and end-date	Ongoing
Objectives of the initiative	• To train teachers to use and apply ICT across the curriculum using their actual working environment.
The motivation of the initiative	More focused coaching in the use of ICT in the primary classroom, complementing regular in-service courses carried out outside the classroom.
Level of implementation	State primary schools.
Target group	Primary school teachers.
Budget	Not available.
Participants	State primary schools and teachers.
Short description of the project	A programme of 12 hours or more in which class teachers are coached by ICT tutors (peripatetic teachers) in hands-on application of ICT across the curriculum. Teachers volunteer for the training programme and are awarded a participation certificate upon completion.
Methods applied to reach the objective (technological and/or pedagogical)	Technological methods involve hands-on application of ICT equipment available in the classroom, including the Internet. Pedagogical methods constitute tailor-made programmes according to individual participants' personal knowledge of ICT — a differentiated approach in training. Focus on teaching methodology with specific emphasis on classroom management and teamwork through ICT activities.
Implementation	• Promotional sessions during staff development meetings. • Brochures and guideline documents. • Website: • http://schoolnet.gov.mt/ictprimary/supportinitiatives/one2one.html • Voluntary application by participants. • Progress Journal used during the programme. • Concluding session is the participants' lesson delivery monitored by an education officer. • The completed Progress Journal is included in the participant's Performance Management Programme.
Specific results	• 90 teachers have completed the programme so far. • All programmes were completed successfully. • 51 new teachers have applied for this scholastic year. • Great improvement in both ICT skills and pedagogical approach was noted especially from participants who were previously weak in ICT skills.
Impacts	Teachers in schools are more ICT-conscious. Many participants in the programme recommended the programme to their colleagues and there was an increase in applications from year to year.

Lessons learnt	There are still teachers who have a problem in overcoming the initial ICT hurdle. These can be addressed individually. The programme can be extended to secondary and special-needs teachers. A fixed ICT/eLearning teacher in school would greatly improve the programme's effectiveness.

Category	***Learning Management System***
Title of the initiative	Online Community for Teachers
Contact details including weblinks	http://schoolnet.gov.mt/ictsen http://www.specialneedsit.com
Start- and end-date	Started January 2007/upgrades scheduled for January 2008 (ongoing)
Objectives of the initiative	• To provide a structure that encourages teachers to exchange resources. • To provide teachers with a place other than the school environment where they can request support and share ideas. • To provide a portal where teachers and parents alike can access information and find contacts to solve problems they may encounter. • Eventually this will be extended to students too.
The motivation of the initiative	Teachers needed encouragement to share resources. Teachers do not have time to meet and discuss their professional life in a special school environment and the Government wanted to encourage mutual support and sharing of good principles of practice.
Level of implementation	National schools, including most teachers in special schools and facilitators and inclusion coordinators (incos) in mainstream schools.
Target group	Teachers, facilitators, incos and also school administration.
Budget	Not available.
Participants	Schools, the ICT Learning Centre Special Needs Unit.
Short description of the project	The development of a Special Needs Portal for educational professionals for the main purpose of creating a dynamic online community.
Methods applied to reach the objective (technological and/or pedagogical)	Accessible web design and development, digital dissemination and promotion of portal during inset training courses.
Implementation	Regular contact with the people who have joined the mailing list, and soon an e-newsletter will be created aimed at keeping professionals up to date with new technologies.
Specific results	Not available.
Impacts	The teachers that used the forum and visited the portal regularly showed increased IT knowledge and enthusiasm though coverage was not satisfactory. Now some sections are being re-designed which should give more control and interactivity potential for the users.

Lessons learnt	Sound technical knowledge is pretty useless without a fine-tuned dissemination strategy. The initiative will be reviewed towards the end of February 2008, because it was not effective enough in obtaining the desired feedback.

Category	***ICT Infrastructure***
Title of the initiative	Automated Testing System (SSr) in ICT
Contact details including weblinks	Secondary Support Unit at DTiE http://skola.gov.mt/ictsec
Start- and end-date	September 2004 — July 2006
Objectives of the initiative	• Testing of practical skills in ICT.
The motivation of the initiative	The multi-user automated test system SSr was designed to facilitate the process of assessing students individually while completing a practical task.
Level of implementation	National.
Target group	Students.
Budget	€37 000.
Participants	State schools.
Short description of the project	As part of their final ICT assessment, students took a test during their ICT lesson using a computer. Results were collected automatically in a password-protected database on the school server. The support staff at the Department of Technology in Education (DTiE) collected the results remotely through the State schools' network infrastructure. Ultimately, all results were collated into one database. This system eliminated hours of marking, standardised the assessment, by-passed the manual method of collecting, recording and transcription of results, and provided immediate feedback at the end of every test.
Methods applied to reach the objective (technological and/or pedagogical)	Pilot testing and running in selected schools to collect feedback from students and teachers.
Implementation	In-service training to all ICT teachers; exposure of the system to all school heads; support given at the DTiE by Secondary Support Unit; collaboration with Education Division Assessment Unit.
Specific results	System implemented for annual assessment of all Form 3, 4 and 5 students (age group 13 to 15) at State schools amounting to 10 800 students. ICT skills were tested in a practical way using computers rather than pen and paper.
Impacts	Feedback from students and teachers is very positive. Statistics indicated an improvement in assessment marks for students and less marking time for teachers. Since data is collected and collated centrally, statistics can be produced in a much quicker and accurate way.

Lessons learnt	This automated testing system received support from the school administration, teachers and students but it requires ongoing support by a team of specialist teachers, developers to produce the questions, maintaining the test engine, uploading tests to school servers and refinement. SSr can be applied to the whole secondary age group (11 to 15 year olds) if the necessary support can be obtained.

Category	***National Strategy/Reform***
Title of the initiative	Malta National eLearning Strategy
Contact details including weblinks	Not available.
Start- and end-date	2007 – 2010
Objectives of the initiative	• To provide strategic direction and a roadmap for the development of eLearning in Malta.
The motivation of the initiative	To develop a strategic approach seeking to bring all stakeholders together to take education to the next level in which technology is embedded in learning with clear objectives of improving learning. For all learners this means access to personalised, flexible learning content and opportunities.
Level of implementation	National.
Target group	Students in primary and secondary schools (6 to 18 year-olds).
Budget	First year of piloting: €90 000.
Participants	Ministry of IT, Ministry of Education, Internet Providers & Shireland Collegiate Academy, U.K.
Short description of the project	The action plan is based on the three strategic directions of infrastructure, skills and content. In 2008 the project is to be piloted in three schools after which tenders for a learning platform will be issued.
Methods applied to reach the objective (technological and/or pedagogical)	On the technological side, new computers (10Mbits) were deployed. Teachers were trained to train other teachers. Selection of an eLearning champion in each school for support.
Implementation	A strategic plan for the next three years has been drawn. Cabinet approval.
Specific results	Pilot = 1 500 Students as users.
Impacts/ Lessons learnt	Too early to assess.

NORWAY

Category	*New Learning Environment*
Title of the initiative	Learning Networks
Contact details including weblinks	http://www.skolenettet.no/ln/ Torbjørn. D. Moe, tdm(at)ls.no
Start- and end-date	2004 – 2009
Objectives of the initiative	• To build networks as a tool for competence development and knowledge exchange. • To stimulate ICT-based development work in schools and teacher training institutions, and support their work through creating a forum for sharing and developing knowledge and experience.
The motivation of the initiative	Insufficient competence in the use of ICT for pedagogical purposes among teachers and school leaders.
Level of implementation	National project.
Target group	Teacher training institutions, school leaders, teachers and students.
Budget	Annual budget of NOK. 20m.
Participants	Teacher training institutions, school leaders, teachers and students.
Short description of the project	The Learning Networks is a project which helps teachers to create networks which they can use to exchange knowledge. The networks should be "learning" in the sense that they should create dialogue and reflection as a basis for a change of practice. The project is part of the Government's *Programme for Digital Literacy 2004 – 2008* and is coordinated by the Directorate for Education and Training. Networks cover the entire country. So far around 480 schools have taken part in the project, and 27 colleges and universities are responsible for coordinating a total of 28 networks. ITU (Network for IT Research and Competence in Education) has been given the main responsibility for implementing a national evaluation scheme, which is to complement a number of regional evaluations.
Methods applied to reach the objective (technological and/or pedagogical)	Strong involvement from the teacher training institutions leading the networks.
Implementation	Ongoing evaluation of the project. Follow-up from the National Directorate for Education and Training.
Specific results	Close to 500 schools have taken part in the networks. It is, however, difficult to measure the impacts on learning outcome.
Impacts	Reports and feedback from teacher training institutions and schools in the networks indicate that the project has led to an increased focus on ICT, to knowledge-sharing between institutions and to improved ICT competences and

	practice among teachers and school leaders of participating schools.
Lessons learnt	Involvement of school leaders is essential for the success of the project. School leaders have to facilitate participation in school development projects and give teachers the opportunity to actively contribute.

Category	***National Strategy/Reform***
Title of the initiative	Knowledge Promotion
Contact details including weblinks	Norwegian Ministry of Education and Research http://www.regjeringen.no/en/
Start- and end-date	2006 —
Objectives of the initiative	Knowledge Promotion is the latest reform in the 10-year compulsory school and in upper-secondary education and training. The reform's aim is to help all pupils to develop fundamental skills that will enable them to participate actively in knowledge society. The reform took effect in autumn 2006 for pupils in grades 1 to 9 in 10-year compulsory school and for pupils in their first year of upper-secondary education and training (i.e. the 11th grade). Five basic skills are defined: • the ability to express oneself orally; • the ability to read; • the ability to do arithmetic; • the ability to express oneself in writing; • the ability to make use of Information and Communication Technology. These basic skills have been incorporated into all subject curricula.
The motivation of the initiative	Low performance in diverse international surveys. Need to strengthen the general level of education.
Level of implementation	Digital skills have been implemented in all subject curricula from grades 1 to 13.
Target group	Pupils in primary and secondary education.
Budget	Several support measures have been put in place to contribute to implementing the reform.
Participants	The Knowledge Promotion Reform involves the entire school sector, including teacher training institutions.
Short description of the project	Strong emphasis on basic skills, including the ability to use ICT.
Methods applied to reach the objective (technological and/or pedagogical)	Emphasis has been put on development of digital content as a lever to improve implementation of the pedagogical use of ICT.
Implementation	The Knowledge Promotion Reform was accompanied by new subject curricula in all subjects. Subject curricula are to be deemed to be legal regulations.

Specific results	Not available.
Impacts	It is premature to measure the impacts of the reform.
Lessons learnt	More emphasis on teacher training is necessary to implement new reforms. Teacher training schemes will be put in place. In the follow-up actions of the Programme for Digital Competence (2004 – 2008) ICT in teacher training will be prioritised.

Category	***National Strategy/Reform***
Title of the initiative	Federated Electronic Identity (FEIDE)
Contact details including weblinks	http://feide.no/content.ap?thisId=1309
Start- and end-date	Not available.
Objectives of the initiative	FEIDE is based on the principle that every user in the educational sector — pupil, student or employee — receives a user name from their school, college or university, which can be used throughout the sector. The same user name works everywhere, both at the user's own organisation and for shared national services, with the same password or certificate.
The motivation of the initiative	Increased interoperability in the education sector.
Level of implementation	• 90% of higher education institutions have implemented FEIDE. • 100% of primary and schools in 2010. • 100% of upper-secondary schools in 2008.
Target group	FEIDE is an identity management system on a national level for the educational sector in Norway.
Budget	Yearly budget of 20 million Norwegian crowns.
Participants	All educational institutions, private and public.
Short description of the project	Users know that schools have correct information about them, and if anything is wrong they can contact their own school and have it corrected once and for all. Users know that FEIDE is careful about who obtains data about them, and that users themselves are informed about which data are used where. The schools know that FEIDE sets requirements for the services, and is restrictive about distributing personal data. FEIDE makes it possible for the services to serve hundreds of thousands of meticulously registered users, without even storing their data in a user directory.
Methods applied to reach the objective (technological and/or pedagogical)	Not available.
Implementation	Implementation is closely linked to the examination systems. Increased use of ICT

	during formative and final assessment requires implementation of FEIDE.
Specific results	Not available.
Impacts	The introduction of FEIDE has led to more effective use of ICT in education, despite the fact that FEIDE is not a product directly related to the pedagogical use of ICT.
Lessons learnt	Not available.

POLAND

Category	*New Learning Environment*
Title of the initiative	Scholaris — Online Educational Resource Centre
Contact details including weblinks	Ministry of National Education Al Szucha 25 00-918 Warszawa http://www.scholaris.edu.pl http://www.men.gov.pl
Start- and end-date	I stage 2002 – 2004 II stage 2005 – 2006 III stage from 2007
Objectives of the initiative	• To increase access to digital resources for teachers. • Dissemination of the use of ICT in teaching across all school subjects.
The motivation of the initiative	The quality of educational resources for teachers and pupils has been poor and this issue has been particularly acute in rural areas.
Level of implementation	National. Initially, the project covered 7 provinces from among 16.
Target group	Teachers, pupils and parents, as well as the personnel of the educational sector.
Budget	I stage: approximately 2 200 000 PLN. II stage: approximately 17 700 000 PLN. III stage: 700 000 PLN (until end of 2007).
Participants	Teachers, pupils and parents, as well as the personnel of the educational sector.
Short description of the project	Scholaris is composed of three parts: Applications (services), Educational Resources and Information Resources. The Scholaris applications allow for easy use of electronic educational resources in schools: • Individual account gives an opportunity to note which educational materials are most valuable and useful. • Scholaris offers an e-school service by which a virtual class can be created; pupils' and teachers' data can be entered, individual subjects can be created and electronic registers are run. • A tool called A*ssignments*, with the use of which teachers prepare assignments for students and store them on their individual accounts. Educational resources cover all school subjects at all stages of education. The Scholaris portal also contains information on education and offers access to the information from schools of the sixteen regions of Poland. In the III stage workshops for pedagogical advisors and teachers of science subjects and humanistic subjects are held.
Methods applied to reach the objective (technological and/or pedagogical)	Teachers took part in the production of educational resources and the aim was to cover all core curriculum issues.

Implementation	Co-financed with the Rural Development Programme and the European Social Fund. I and II stage had their own resources and in 2008 from European Funds.
Specific results	Educational portal established offering a free-of-charge, quality database of digital and multimedia educational resources for teachers and students. Some of the contents include: • e-Lessons Teacher — 530 • e- Lessons Student — 530 • Interactive exercises — 2 860 • Interactive courses — 6 • Multimedia presentations — 738 • Simulations of phenomena and processes — 432 • Lesson scenarios — 6 743 • Tests and class tests — 461 • Student's work chart — 1 520
Impacts	The database of digital and multimedia subjects increased the educational resources available for teachers and students. Moreover, tools for implementing eLearning were improved, for instance by the creation of a virtual school service.
Lessons learnt	There is need to work on criteria of quality of digital resources.

Category	***Teacher Training***
Title of the initiative	EuroProf
Contact details including weblinks	Teacher Training Centre (CODN) (within the Ministry) Al. Ujazdowskie 28 00-477 Warszawa tel. (22) 621-30-31, fax (22) 621-48-00 The Spanish Embassy in Poland ul. Myśliwiecka 4 00-459 Warszawa Cervantes Institute in Warsaw ul. Myśliwiecka 4 00-459 Warszawa
Start- and end-date	From April 2004 onwards (ongoing)
Objectives of the initiative	Preparation of teachers' group for teaching two foreign languages at Polish schools.
The motivation of the initiative	To enrich the educational offer of schools in foreign languages.
Level of implementation	National.
Target group	Teachers of foreign languages throughout the country and from different types of school.
Budget	Not available.

Participants	Teachers of foreign languages throughout the country and from different types of school; partners (line 2).
Short description of the project	Realisation of EuroProf will take place during three years. Teachers will learn basic Spanish. – In the first year participants take an exam known as *DELE – level 1*. Passing this is the condition for proceeding to the second stage of EuroProf. – Second year – continued study of practical Spanish language and an examination at *DELE level 2*. – Third year – continued study of Spanish plus teacher training course. – After three years participants passing the exams receive the diploma *DELE 3* and the certificate of completion of the teacher training course, thus making them fully qualified to teach Spanish in schools.
Methods applied to reach the objective (technological and/or pedagogical)	Blended methodology is used. Regular meetings motivate participants. Three editions of the programme are planned.
Implementation	Implementation includes active involvement of relevant participants from across the country. There are representatives of every province and of different types of school. Participants obtain the approval of their school headmaster who then introduces Spanish as a subject. The participants are able to obtain a certificate in the Spanish language and qualifications in teaching Spanish.
Specific results	60 out of 90 participants took the exam.
Impacts	Encouraging teachers' intellectual development and realising a "European dimension in teaching" as well as multilingual teaching.
Lessons learnt	Experience of enrolment, logistics, distance learning; eLearning courses should contain elements of motivation because participants' enthusiasm is lower and this poses a challenge. Meetings and internal exams are carried out.

Category	***Learning Management System***
Title of the initiative	Virtual Textbook (electronic content for bilingual schools with French)
Contact details including weblinks	Teacher Training Centre (CODN) (within the Ministry) Al. Ujazdowskie 28 00-477 Warszawa Tel. (22) 621-30-31, Fax. (22) 621-48-00
Start- and end-date	From September 2006 onwards (ongoing)
Objectives of the initiative	Preparing and publishing online electronic educational materials for bilingual teaching in different school subjects in classes in French.
The motivation of the initiative	Enlargement of the number and access to quality digital educational resources for teaching in bilingual classes using French.
Level of implementation	National.

Target group	Teachers, students at bilingual schools in Poland.
Budget	The agreement between the partners defines their contribution to the project. We have no data on financial resources. Creation of materials is paid for from the Ministry budget. Training — study visits — was paid for from European programmes (among others).
Participants	Teachers from bilingual schools with French; partners from line 2.
Short description of the project	Participants receive training in ICT and have constant contact via a digital eLearning platform. Educational resources are verified. This process is led by pedagogical experts.
Methods applied to reach the objective (technological and/or pedagogical)	Systematic training is achieved by using the Internet, multimedia applications and pedagogical subjects. A study visit was organised to the CAVILAM Training Centre in Vichy (France). Some 40 quality electronic resources are published on the Internet.
Implementation	Constant verification of published resources by experts. The idea of a quality mark for publishing resources is being worked out.
Specific results	A network of coordinators was created. It is a fully operating and efficient network capable of undertaking the training in the regions.
Impacts	Increased amount of electronic didactic materials for bilingual schools with French. ICT is being used more often in the classroom.
Lessons learnt	Experience of the teacher's network was useful. Teachers' ICT skills were improved.

SLOVAKIA

Category	*e-Skills*
Title of the initiative	Fluency in Information Technology — Application of ICT in Subjects (FIT)
Contact details including weblinks	MPC v Trencine, Pod Sokolicami 14 911 01 Trencin, Slovakia jakubekova(at)gmail.com, www.fitucitela.sk
Start- and end-date	August 2006 — November 2008
Objectives of the initiative	• To improve key competences and skills of pedagogical staff in active use of ICT in the teaching/learning process. • To encourage the readiness of teachers of particular subjects to develop innovation in teaching with the support of information and communication technologies.
The motivation of the initiative	The Lisbon Strategy goals and the national Lisbon Strategy goals were a crucial motivation factor: providing continuous training in ICT, improving teachers' ICT competences and providing personal resources for the information society and education sector. The project was initiated as part of the overall aim of improving Slovak schools and to provide continual education by helping teachers with the use of ICT in everyday pedagogical practices.
Level of implementation	National educational project and partly financed from European funds.
Target group	40 000 teachers at primary and secondary schools in the Slovak Republic.
Budget	51 000 000 Sk/approx. €1 500 000.
Participants	The FIT project is designed by staff at pedagogical institutions led by the Slovak Republic Ministry of Education in cooperation with Universities and IT centres.
Short description of the project	The project aims to prepare teachers for innovative pedagogical practices with ICT in lessons (subject matter) and cross-curricular projects. It includes upgrading of ICT literacy courses and addresses the needs of pedagogical practices at an advanced level using an e-learning environment. The project helps to upgrade teachers' ability and professionalism towards an international comparable level of information literacy — fluency in IT.
Methods applied to reach the objective (technological and/or pedagogical)	The technological approach includes construction of an e-learning portal with study materials and assignments. Pedagogically, education is organised on a distance basis for advanced users or face-to-face for less skilled users. The participating teachers have to solve direct assignments and also analytical and creative assignments.
Implementation	Implementation includes: • Building an educational portal. • Preparing the methodology for subject matters.

	• Training multipliers for each region. • Information meeting in each region. • Coordinating the project in cooperation with regional government. • Different forms of education. • Conferences. • Yearbook. • Portal with participants' outcomes. Implementation included training courses, and participation was initiated individually by teachers (online registration) or in groups managed by regional educational offices or regional teacher training centres. Courses can be organised at the request of school leaders. They are informed via the project website, workshops, regional coordinators, etc.
Specific results	• 40 000 teachers are using the project tools. • New didactical methods for learning using different ICT tools. • Wide use of e-learning. • New programme for achieving FIT literacy with the effects of project outcomes assumed to be long-lasting. • 35 e-learning courses for ICT use in the educational process for different subjects. • Hundreds of new methodical instruments and study materials.
Impacts	The FIT project is associated with improved and increased used of ICT in education. Teachers become acquainted with e-learning and use the hardware and software for teaching. Preparation of the portal with the project outcomes can serve as an inspiration for all teachers. Overall ICT usage in education in primary and secondary schools throughout the Slovak Republic will be improved.
Lessons learnt	The combination of ICT courses and new pedagogical tools has proven valuable. This included eLearning in teaching/learning, electronic communication in project tasks, project education with information systems applications, ICT-based self-evaluation of students, new ways of evaluating teaching/learning activities, enrichment in using multimedia tools and new methods in using presentation software.

SLOVENIA

Category	*Teacher Training*
Title of the initiative	Teachers Train Other Teachers
Contact details including weblinks	http://info.edus.si/sem_zrss/ http://www.zrss.si Nives Kreuh, National Education Institute Nives.kreuh(at)zrss.si Borut Campelj, Ministry of Education and Sport Borut.campelj(at)gov.si
Start- and end-date	1995 – ongoing
Objectives of the initiative	• To support teachers in innovative use of ICT in classrooms.
The motivation of the initiative	Generally improving use of ICT in teaching and doing this in an innovative manner.
Level of implementation	National.
Target group	Teachers and other experts in schools.
Budget	About €1 300 000 a year (there are some 25 000 teachers in Slovenia's schools).
Participants	Schools and companies.
Short description of the project	Seminars are promoted, organised and carried out (face-to-face, online and offline) by the National Education Institute but mostly by private companies because they are more interested in organising seminars. Experts and research groups covering various subjects and fields prepare and upgrade seminar content (programme, materials). This year the project will be upgraded again to aim at e-competence for teachers in almost every subject and fields. Hence, teachers will be even more interested in achieving the upgraded standard.
Methods applied to reach the objective (technological and pedagogical)	Teachers to teachers from (new) practice to practice.
Implementation	The Ministry of Education and Sport supports the project (finance, promotion and recommendation to schools). A seminar is held for teachers, most often arranged by a private company after a public tendering process. All teachers, schools and the Ministry have one contact point which improves efficiency in organisation and implementation. The seminars are prepared by a range of experts on the subject.
Specific results	• The seminar's content is updated once a year. • At least 6 000 teachers (out of 25 000) are trained every year.
Impacts	The teacher's role in the classroom is changing and the pupils have become active in the learning process. This has happened because teachers have acquired new teaching and learning competences.

Lessons learnt (most important lessons from the initiative)	Real changes in an educational system should be done by taking the classrooms as the basis rather than imposing top-down initiatives and rules from the Ministry.

Category	***New Learning Environment***
Title of the initiative	New ways of teaching and learning with new educational e-content
Contact details including weblinks	http://www.mss.gov.si Borut Campelj, Ministry of Education and Sport Borut.campelj(at)gov.si
Start- and end-date	2006 – 2013
Objectives of the initiative	• Design of new standards for e-content. • Development of new ways of teaching and learning.
The motivation of the initiative	The motivation is the wish that teachers change their activities in classrooms and that pupils become more active in classrooms. We would like to change learning and teaching. ICT could be a tool to help teachers. But no more than 20% of teachers in the whole of Europe use it. ICT should help teachers (and parents) to encourage pupils to obtain new knowledge and competences and oversee them in the process.
Level of implementation	National.
Target group	Teachers and other experts in schools, and pupils.
Budget	About €2 500 000 a year (national and European Social Fund).
Participants	Companies, research institutions, schools, non-governmental institutions, universities.
Short description of the project	Experts and research groups develop new ways of teaching and learning through preparing new e-content on the Internet (SCORM standard) in different subjects and fields. New training programmes for teachers are developed and seminars organised.
Methods applied to reach the objective (technological and/or pedagogical)	New standards for educational e-content from pedagogical and technological aspects.
Implementation	The Ministry of Education and Sport supports the project (finance, promotion and recommendation to schools). Experts prepare new e-content on the Internet and develop new ways teaching. They then organise seminars for teachers to apply the "know-how".
Specific results	• New e-content. • New standards of e-content. • 1 500 teachers trained every year.

Impacts	With new e-content and competences teachers have changed their way of teaching and learning. Teachers have a new role in the classroom and pupils have assumed a more active role in the learning process.
Lessons learnt	Real changes in an educational system should be done by taking the classrooms as the basis rather than imposing top-down initiatives and rules from the Ministry.

TURKEY

Category	*Teacher Training*
Title of the initiative	Microsoft Cooperation in Education
Contact details including weblinks	http://egitimdeisbirligi.meb.gov.tr user id: okalkan password:123456 e-mail: okalkan(at)meb.gov.tr , tsisman(at)meb.gov.tr
Start- and end-date	01.01.2005 – continuing
Objectives of the initiative	Through distance education via the Internet all teachers and the personnel of the Ministry and the provinces (directorates of education) are meant to acquire the necessary skills to use information technology tools and improve their knowledge of the following themes: ● *Basic Concepts of Information Technology* ● *Microsoft Windows XP* ● *Office software* ● *Communication*
The motivation of the initiative	Because of the large number of teachers (650 000), it is very easy to reach all teachers and train them on a web-based platform by using ICT tools. Teachers do not have to spend extra time in a classroom environment by attending in-service training to achieve this aim, but instead they can take the courses anytime and anywhere.
Level of implementation	National.
Target group	Teachers.
Budget	Microsoft covered all the expenses but the Ministry of National Education (MoNE) spent 200 000 USD for infrastructure purposes.
Participants	Teachers and public employees.
Short description of the project	The programme “Microsoft Cooperation in Education” (e-learning) is based on a protocol signed by MoNE and Microsoft in 2004. This is a distance-learning programme for creating and improving teachers’ ICT literacy. IDs and passwords are supplied to all teachers working in the schools affiliated to MoNE. The teachers are enrolled in the teacher training programme via these user IDs and passwords. User accounts for 575 190 teachers have been provided so far and 160 536 teachers are actively using the programme. Successful teachers will receive certificates. This specific training programme initiated a secure and sound distance-learning infrastructure. Personnel of other institutions and Ministries will benefit from the same infrastructure and the training programme. Studies are continuing in order to keep the various contents in this infrastructure up-to-date.
Methods applied to reach the objective (technological and/or pedagogical)	Online access and ICT tools.

Implementation	To support implementation, a server was established at the Information Processing Department of the DG for Educational Technologies in order to ensure distribution of the content to end users.
Specific results	• An electronic survey on the training programme was conducted and the results made available. Further evaluation is scheduled. • 650 000 teachers have user accounts. • 160 536 teachers are taking part in the training programme by accessing the online platform. Specific results are to be available after translation.
Impacts	Teachers gained and/or improved ICT skills and had the opportunity to implement them in their classroom activities.
Lessons learnt	Time-free, place-free distance-learning programmes are more attractive if a certificate is provided at the end. The programme increased purchases of computers (especially laptops) among teachers.