COPERTINA

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The European Commission launched the eLearning Initiative and Action Plan to foster the adaptation of the European Union's education and training systems to the knowledge society*, through the effective and relevant use of information and communication technologies and the Internet for learning.*

The eLearning Initiative and Action Plan aim to provide the basis for a wide debate at European level, and to encourage increased coordination of related actions within and between Member States.

Peer reviewing aims at facilitating cross-examination (or study) of e-learning practices or policies by persons directly involved in education and training.

The outcome of the peer review process should be a better understanding of how to develop good practice throughout Europe*, providing a basis for the exchange and transfer of experience among education and training actors.*

The uTeacher project

The **uTeacher** project addresses the following issues of the *e*Learning initiative.

To foster the adaptation of the European Union's education and training systems to the knowledge society

Teachers are key players in the adaptation of European school systems to the knowledge society, provided that they are able to make effective and relevant use of information and communication technologies and the Internet in their practice. **uTeacher** aims to understand and define the professional profile a teacher

INTRODUCTION

needs to face the main issues that the knowledge society poses to schools. This profile is captured in a "Common European Framework" which can be seen as a means of harmonising Initial Teacher Education (ITE) and Continuing Professional Development (CPD) across Europe.

Cross-examination (or study) of e-learning practices or policies by persons directly involved in education and training to get a better understanding of how to develop good practice throughout Europe

Clear understanding of the actual professional profile currently assumed as a basis for ITE and CPD across Europe is a prerequisite for defining the Common European Framework. Such understanding can only be achieved through a participative process involving investigators from all European countries. **uTeacher** has created a network of National Investigators who worked together to produce an overview of teachers' professional profile pertaining to ICT for education that is assumed as a basis for benchmarking in-service and pre-service training and accreditation in the various European countries. This network, which can be considered a real community of practice, will work cooperatively with the **uTeacher** partnership (see Appendix) to produce the Common European Framework.

To encourage increased coordination of related actions within and between Member States

The Common European Framework describing teachers' professional profile in ICT for the school of the knowledge society will represent a means for educational administrators, course designers, teachers, examining bodies, etc. to reflect on their current practice, with a view to situating and co-ordinating their efforts and to ensuring that they meet the real needs of school in the knowledge society.

Main outcomes of uTeacher

uTeacher involves two main phases, related to the production of:
- an overview of teachers' professional profile in ICT for education that underpins national teacher training programs in Europe. This overview was the objective of Phase 1, which saw the production of a book entitled "*European Teachers Towards the Knowledge Society*", written cooperatively by the **uTeacher** partnership, along with the nineteen European National Investigators.
- A common framework for teachers' professional development as a tool for improving teacher training in ICT for education across Europe. This framework is the objective of Phase 2, which will see the production of a book entitled "*Teachers' Professional Profile in ICT for Education within a Knowledge Society - A Common European Framework*". This Framework will be the result of a cooperative process involving the **uTeacher** partnership and the network of National Investigators. A feasibility study will define the conditions for developing a European organisation aimed at maintaining the Framework, providing a reference for the development of learning materials, and administering quality assurance.

European Teachers Towards the Knowledge Society

The main objective of Phase 1 was an overview of the current teacher profiles in ICT for Education underlying ITE and CPD initiatives across Europe.

This overview was published in "*European Teachers Towards the Knowledge Society*", a book written cooperatively by the **uTeacher** partnership, along with the nineteen European experts who, in the context of **uTeacher**, are called "National Investigators" (NI).

The book is structured into three sections.

▶ The first presents an overview of ITE and CPD pertaining to ICT in Education across Europe. This overview is based on information provided by the National Investigators.

▶ The second part sketches teachers' profile related to ICT for Education.

▶ The third section summarizes the positions of groups of NIs on the European situation.

The production process which led to the publication of this book comprised a series of coordinated activities designed to help achieve a clear picture of the situation in each country regarding teachers' ICT profile underlying ITE and CPD, and to provide the opportunity for Europe-wide dialogue and comparison. These activities resulted in the drafting of in-depth national reports and of papers reflecting trans-national perspectives and issues. It also saw the formation of a network of European investigators, consolidated during a week-long seminar, who are working together in producing the Framework. The phases of this process were as follows:

- **Identifying National Information Sources**
  The partnership identified an authoritative national source in each European country (Ministry of Education, national body responsible for teacher education, etc.), who helped the partnership appoint a suitable NI.

- **Contacting the National Investigators**
  In accordance with the suggestions of the National Sources, the partnership contacted and appointed NIs.

- **Supporting NIs**
  Guidelines for producing national reports were sent to the NI. Each national report deals with ITE and CPD related to ICT for Education in the given country.

- **Writing national reports**
  NI produced national reports and sent them to the partnership.

- **Writing a preparatory document for the Week-long seminar**
  The partnership identified key aspects that emerged from the national reports and drafted a preliminary document called *"Teachers' Competencies in ICT for Education within a Knowledge society"* to serve as a guide for discussion and comparison at the week-long seminar.

- **Week-long seminar (Venice, 4th-9th October 2004)**
  The NI shared and explored national viewpoints and experiences, and identified key aspects and issues at trans-national level. At the seminar, two main activities were performed: a) outlining of Book 1, "*European Teachers Towards the Knowledge Society*", b) defining of the structure of the framework and the way it is to be populated.

- **Cooperative production of Book 1**
  The NI worked together at a distance to produce this book. The cooperation was based on an open source platform (MOODLE) configured and administered jointly by the Glasgow and Venice partners http://macdui.educ.gla.ac.uk/uteacher/

Figure 1.
The NI cooperation area in MOODLE.

The national information sources

Nineteen people who play a key role in major teacher education institutions were identified as primary information sources in each country (see Appendix). These contacts were asked to appoint a "National Investigator" responsible for providing accurate and complete information to be used in the context of a comparative analysis at European level.
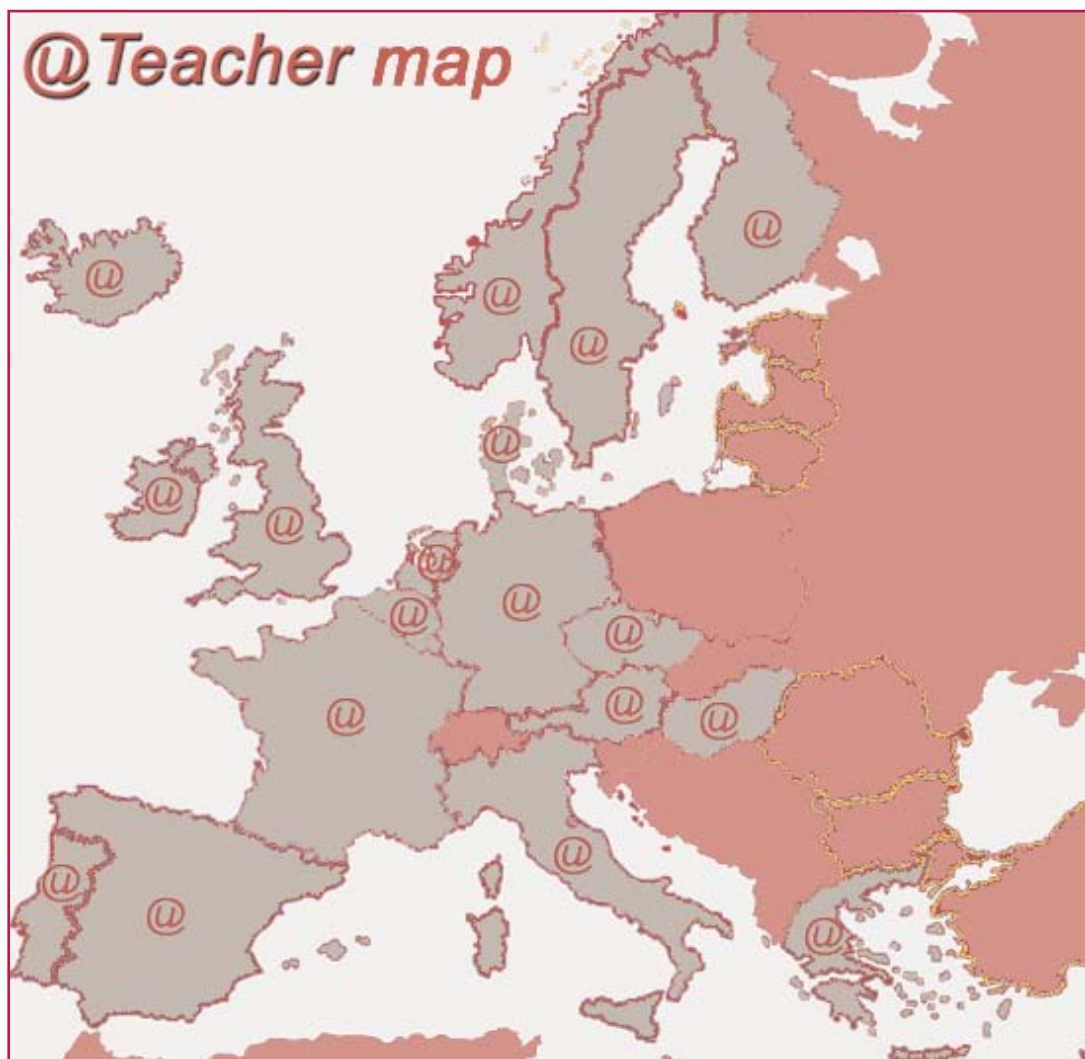
The National Investigators

Nineteen National Investigators were appointed to describe the explicit or implicit competence profile pertaining to ICT in teachers' practice that is assumed as a reference for in-service and pre-service programs/initiatives/courses in their country (see Appendix). All contributions produced by the National Investigators served as a basis for an analysis of teachers' competencies in ICT assumed in the different European countries.

Specifically, the investigators' tasks were to:
- produce a short national report in line with guidelines provided by the partnership;
- participate in a week-long seminar in Venice (4th – 9th October), where a comparative analysis and a draft of the Common European Framework would be produced;
- participate in the Framework production.

The National reports

To gain a clear picture of teachers' profile related to ICT for Education across Europe, it was necessary to ensure consistency and to provide information suitable for comparative purposes; thus the general structure of the national reports had to be the same for each country. This requirement was considered in preparing the guidelines for drafting the national reports: reporting procedures have been harmonized by making use of common formats and datasets (a template to be filled in and an example of filled template), explaining each of the headings the national report should comprise and giving recommendations on how to compile it.

Drawing on guidelines produced by the **uTeacher** partnership, each National Investigator wrote a report on the situation in his/her country concerning teachers' ICT profile underlying Initial Training and Continuing Professional Development.

The national reports are structured according to a number of major issues.

Initial and in-service teacher training: objectives, subject areas and bodies
setting out the objectives and the areas of such training processes related to all the aspects of teachers' practice involving ICT: these include the pedagogical uses of ICT in the classroom, the use of ICT for improving school organisation, ICT in professional development, ICT for improving personal productivity, ICT for cooperation and networking, etc.

Curricular framework of ICT for education in teacher training
(both in initial and in-service training)
describing the explicit or implicit curricular framework of teacher training initiatives, mainly addressing the uses of ICT in the context of:
- the classroom, to improve students' learning;
- the teachers' community, to improve their cooperation;
- school organisation, to improve school effectiveness;
- teachers' professional development, to extend learning opportunities.

How teacher training is carried out (both in initial and in-service training)
explaining the ways in which initial and in-service training are accomplished:
using ICT tools or not, working online or not, working collaboratively or not, etc.

Teachers actual competencies and tasks in using ICT
reporting studies or statistical surveys concerning actual teacher uses of ICT in education.

Problems that teachers face in using ICT in their practice
reporting studies or statistical surveys concerning problems faced by teachers in using ICT in education (e.g. lack of access to computers and a data projector, lack of educational materials at school, lack of knowledge in using computers, etc.).

Content areas involved in teachers' competence profile in ICT for education
listing broad topics related to teachers' competence in ICT for education. These topics have been drawn from major national teacher training initiatives and programs, from initial training courses, or from NI's experience as experts involved in the field.

Figure 3. The working community of NI

The week-long Venice Seminar

**4th-9th October 2004
(San Servolo Island, Venice)**

The seminar was intended to bring together national investigators in order to begin the process of constructing a European Framework for teachers' professional profile in ICT in education. The meeting was attended by National Investigators from Italy, Scotland, France, Denmark, Finland, Sweden, the Netherlands, Germany, Belgium, Austria, Spain, Portugal, Ireland and Iceland. Investigators from Norway, Hungary, the Czech Republic, Greece and England, also involved in this project, were unable to attend. Staff were also present from the three project partners, and the meeting was observed by the external evaluator. Accommodation and the venue for the meeting were provided at the campus of the University of Venice on the island of San Servolo.

Figure 4. The venue

Figure 5. The venue of the Week-long seminar

The activities and products

The meeting opened on 4th October with an introduction to the **uTeacher** project and to the week's activities by the project leader, Vittorio Midoro.

Activities for the next four days were divided into three phases:

PHASE 1. Outline of the Framework

Participants were first asked to identify the aims or purposes of a Framework. This was not an easy task, but its open-ended character enabled participants to engage with it from their own perspectives, and this activity represented a valuable calibration of the level of discourse at the seminar. Discussions were intense and wide-ranging, and in the end produced not only an agreed list of aims, but also an agreed *list of characteristics of the Framework*.

Characteristics of the European Framework

Aims
1. *To inspire change*
2. *To provide a set of references for teachers and other educational actors*
3. *To enable comparison and sharing of programmes and practices*
4. *To build upon existing expertise (including other frameworks)*
5. *To facilitate mobility of teachers across Europe*

Characteristics
1. *Open (protect diversity)*
2. *An instrument for all educational actors*
3. *Built on teachers' professional values*
4. *Consonant with other generic frameworks*
5. *Contains contextualised case studies and inspirational practices*
6. *Focused on higher order capabilities rather than specific skills*
7. *Contains substantive elements*
8. *For all teachers*

Figure 6. Developing the Framework

Participants were offered a number of framework models to consider, including national models from Scotland and the Netherlands, and the Common European Framework for Languages. They then split into two working groups and, starting from the aims and characteristics already generated, set about defining a structure for the Framework. In the subsequent plenary session, the groups presented two proposals for approaching the draft structure; a strong impression emerged from discussion that defining a Framework structure was a highly complex task which also needed to take account of the type of references that would be used to populate that Framework. Consequently, participants decided to form two working groups dedicated to either aspect. After much hard work, a draft model and list of reference points were drawn up and proposed ("The Common European Framework for Teachers' Professional Profile on ICT for Education").

PHASE 2. Preparation of Position Papers and trial population of Framework

Participants were divided into three groups. Members of the groups presented overviews of the pre-service and in-service provision with respect of ICT for teachers in their country, and reactions were requested regarding similarities, differences, and emergent issues.

This again stimulated much discussion. The groups then began preparing position papers which examined the key issues, taking into account the nature, structure and implementation of the framework proposed in Phase 1.

In plenary session, participants were then asked to try populating the previously negotiated model of the Framework, in order to gain clearer understanding of how this process might best be carried out and to test the validity of the model. Three working groups were formed for this purpose, each dedicated to a different area of the Framework. The results were presented and discussed in plenary session.

PHASE 3. Next steps: feasibility and reporting

Plenary discussion examined the structure and organisation of the publications which would emerge from the event and the timescale required to achieve the outputs. Participants were then invited to express their opinions on the prospects for Framework implementation in their countries and on suitable strategies for enhancing its adoption: their written responses were then collated and analysed, and a thematic overview presented.

Finally, feedback on the success of the seminar was requested from participants.

It was recognised that producing a draft European Framework in this area is an extremely demanding task, one that necessarily entails a long term process calling for sustained commitment. It was generally felt that much had been achieved and that the basis for future development had been constructed: the National Investigators' preparatory work and the opportunity for comparing national contexts and achievements during the seminar were central to this effort. The view was also expressed that a more tangible outcome could have been achieved had the partners adopted a more guided approach to the activities and had there been more intensive focus on populating the Framework itself. Nevertheless, many of the participants were keen to participate in the online activity to complete the Framework and the products. Finally, all appreciated the excellent organisation of the seminar and the pleasant surroundings, which helped to create a friendly and constructive working environment.

Figure 7. A group at work

Figure 8. A group at work

Figure 9. A plenary session

During the week-long seminar there arose a common understanding of the Framework intended as a tool for both Initial Teacher Education (ITE) and Continuing Professional Development (CPD). A preliminary structure of the Framework was developed, which seeks to capture the teacher's practice with regard to him/herself, to pupils, to colleagues and to the external environment. The teacher acts within these four dimensions, dealing in eight different sectors: ethics, innovation, technical aspects, pedagogy, curriculum/subject matter, professional development, organization and policy strategies. For each cell deriving from the intersection between dimensions and sectors, problems and issues will be identified, as will the competencies needed to face them. Figure 10 shows two analogous representations of the same structure.

The Common European Framework will allow educational administrators, course designers, teachers, examining bodies, etc. to reflect on their current practice, with a view to situating and co-ordinating their efforts and to ensuring that they meet the real needs of school in the knowledge society. In the near future, the Framework could become a common basis for the elaboration of syllabuses, curriculum guidelines, examinations, textbooks, etc. across Europe.

SECTORS \ Levels of Interaction	Personal	Pupils	Colleagues	External Environment
PEDAGOGY				
CURRICULUM / SUBJECT MATTER				
PROFESSIONAL DEVELOPMENT				
ORGANISATION				
POLICIES STRATEGIES				
ETHICS				
INNOVATION				
TECHNICAL ASPECTS				

Figure 10. Draft models of the European Framework

uTeacher activities	
Analysis of teachers' professional profiles related to ICT for education in EU Countries (02.01.2004-31.12.2004)	List of national information/project sources
	Guidelines and template for the national reports
	List of national investigators (NI)
	Organizing the work of NI *Contacting NI, delivering guidelines and templates for the national reports, assisting NI during compilation, gathering reports, providing feedback*
	19 National reports *from the countries identified in the kick-off meeting*
	"Teachers competencies in ICT for education within a knowledge society" *Preparatory document for the Week-long Seminar*
	Activity booklet for the Week-long Seminar
	"European Teachers Towards the Knowledge Society" *Book providing an overview of the current teacher profile in ICT for education underlying initial teacher training and continuing professional development initiatives across Europe*
Week-long Seminar in Venice (01.07.2004-31.10.2004)	Venice International Seminar, October 4th – 9th 2004 Target: 14 National Investigators
	Outline of the European Framework *Definition of the structure of a Common European Framework pertaining to expertise in ICT for education*
European Framework (01.11.2004-31.05.2005)	"Teachers Professional Profile in ICT for education within a knowledge society - A Common European Framework" *Book on the Common European Framework*
	Feasibility study defining the conditions for developing a European organisation to maintain the Framework
Dissemination	uTeacher project website (since January 2004) http://ulearn.itd.ge.cnr.it/uteacher/
	Flier (February 2004)
	First Booklet (December 2004)
	Final Booklet (May 2005)
	TD special issue (December 2005)
International Evaluation	First Evaluation Report (December 2004)
	Second Evaluation Report (April 2005)
Reports	Interim Report (December 2004)
	Final Report (June 2005)

———————————————— **completed**

———————————————— **in progress**

uTeacher partnership

Istituto Tecnologie Didattiche is the only institute of Italy's National Research Council (CNR) exclusively devoted to research in the field of educational technology. It is based in Genoa and has a branch in Palermo. The Genoa headquarters derives from the former Istituto Tecnologie Didattiche (founded in 1970) and the Palermo branch originated from the Istituto Tecnologie Didattiche e Formative (founded in 1993).

The institute features both basic and applied research, technological development and transfer, in the following areas:
– Study of teaching/learning processes and of systems devoted to their realisation.
– Development of innovative solutions for educational and training problems based on a systematic approach to design, management and evaluation of learning environments.
– Study of ICT as a factor determining new cognitive needs and as resources for the learning/teaching activity.

Ca' Foscari - Università di Venezia was founded in 1868 as a High School of Business, first in Italy. Its learning offer is today articulated in 32 three year degrees and 37 two year degrees in addition to post-degree offer that concerns 9 masters, 18 Phds and a postgraduate school for secondary school teachers (SSIS). The SSIS is a post-graduate school for secondary teachers, instituted by the Ministry for University, Research and Education in 1998, according to the European plan for the educational harmonization. The school is at a regional level and is supported by a consortium of the Universities of the Region Veneto located in Venice, Padova and Verona. Specific objective of the SSIS is the professional training of secondary teachers. The School lasts two years and has a final examination with qualifying value.

The University of Glasgow is one of the longest established Universities in the UK, with a very high research rating awarded by the UK Government organisation charged with assessing research effort in Higher Education. Its Education Faculty has been formed from the joining of the University Education Department, the Department of Adult and Continuing Education, the Teaching and Learning Service, and St. Andrew's College of Education which itself has given over 100 years service to the education sector. The University confers Education degrees, Doctorates, diplomas and teaching certificates, enabling candidates to become fully qualified teachers in the Primary, Secondary and Tertiary sectors, promoting the continual professional development of practising teachers, and enhancing the University's education research activities.

Information sources

AUSTRIA
Helmut Stemmer
Austrian Federal Ministry of Education, Science and Culture

BELGIUM
Herman Coene
Karel de Grote-Hogeschool, Department of Education

CZECH REPUBLIC
Zdena Lustigova
Charles University Prague

DENMARK
Peter Bollerslev
IFIP Denmark

ENGLAND
Debra Myhill
University of Exeter

FINLAND
Jouni Kangasniemi
Ministry of Education

FRANCE
Odile de Chalendar
Ministère de la Jeunesse, de l'Éducation Nationale et de la Recherche

GERMANY
Dietlind Fischer
Comenius-Institut

GREECE
Louisa Anastopoulos
Ministry of National Education & Religious Affairs

HUNGARY
Kovács Emese
Tempus Public Foundation

ICELAND
Arnor Gudmundsson
Ministry of Education, Science and Culture

IRELAND
Mary Shine Thompson
St Patrick's College

ITALY
Vittorio Midoro
Istituto Tecnologie Didattiche, CNR

NORWAY
Morten Soby
Norwegian Network for IT - Research and Competence in Education, University of Oslo

PORTUGAL
Ida Brandao
Ministéio da Educacao, Departamento de Avaliacao Prospectiva e Planeamento

SCOTLAND
Allan Martin
University of Glasgow

SPAIN
Juana M. Sancho
Universitat de Barcelona

SWEDEN
Carl HOLMBERG
Swedish Agency for Flexible Learning

THE NETHERLANDS
Lejo Swachten
Hogeschool van Utrecht-Faculty of education

National Investigators

AUSTRIA • Hubert Egger / PIB – bmbwk

Hubert Egger works at the Pedagogical Institute in Feldkirch/Vorarlberg/Austria teaching mathematics, physics and ICT in upper secondary school; elearning-coordinator and project-manager for the 'ILIAS open source learning management system' in Vorarlberg/Austria.

BELGIUM • Armand Greefs / Karel de Grote Hogeschool

Since 2002 Armand Greefs has been teaching ICT at the Karel de Grote Hogeschool in Antwerp, Belgium, in initial teacher training for primary and secondary school teachers.
Previously he taught ICT-related courses in secondary school for 18 years.

CZECH REPUBLIC • Zdena Lustigova / Charles University Prague

Lustigova's educational and research work has concentrated on computer aided science education, especially on computer based laboratory work, on telecommunications technologies in education and computer based distance education. She focuses mainly on in-service teacher training, international online education and communication projects, and remote laboratories.

DENMARK • Ulla Gjørling / UNI-C

Ulla Gjørling is a chief consultant in UNI•C, The Danish IT Centre for Education and Research. She is responsible for a series of Pedagogical ICT Licences – a concept of teachers' professional development in the pedagogical application of ICT in teaching and learning. She is also involved in a number of European collaboration activities, among which the international uptake of the Pedagogical ICT Licences in the eContent project EPICT, see www.epict.org.

ENGLAND • Kate Watson / School of Education and Lifelong Learning, University of Exeter

Kate Watson has extensive experience in the field of ICT and e-learning with a specific focus on the teaching of ICT and its use in the classroom. This is an active research area within the school, with participation in the teaching of the course from throughout ICT team.

FINLAND • Jouni Kangasniemi / Senior Adviser, Ministry of Education

Jouni Kangasniemi is currently working for the Finnish Ministry of Education. He is the chairman of a working group preparing the national guidelines for in-service training of teachers. He has also been involved in the development of the Finnish Programme for Education, Training and Research in the Information Society. Currently he is one of the secretaries for the executive group for the programme.

FRANCE • Georges-Louis Baron / Laboratoire EDA, Université René Descartes

Georges-Louis Baron is professor of education at the French Institute for Pedagogical Research (INRP), where he has been in charge of a research department. He has been working on ICT in education for many years, with a special interest in the study of social contexts.

GERMANY • Edwin Stiller / State Institute for schools, RSD (Regierungsschuldirektor)

Responsible for the section "Initial teacher training (First and second phase)" in the "State Institute for School", Soest, NorthRhine-Westphalia.
Editor and author of school books and teaching publications in the social and educational sciences.

GREECE • Giorgos Papadopoulos / Hellenic Pedagogical Institute

Georgios K. Papadopoulos is Consultant of Education and Head of ICT unit, in Hellenic Pedagogical Institute. He received the Diploma in Mathematics from University of Thessaloniki, the MSc in Computer Science from University of Athens and the Ph.D. in Systems Reliability from University of Athens.

GREECE • Michail Karamanis / Information Society SA

Michalis Karamanis is an Instructional Designer and Project Manager in Information Society SA, a government organisation responsible for the design and implementation of ICT projects under EU funding for the Greek public sector. He holds a BSc in Physics and an MSc in Learning Systems Design.

HUNGARY • Andrea Kárpáti / Eötvös University

Andrea Kárpáti is an educational researcher and UNESCO Chair for ICT in Education at Eötvös Loránd University, Faculty of Sciences. She is Chief Editor for a series of textbooks entitled "Teaching with ICT" and has been the Hungarian senior investigator of several EU and OECD projects on ICT competencies and educational programmes aimed at creating equity through ICT.

ICELAND • Kristín Helga Gudmundsdóttir
/ Department of Continuing Education, Iceland University of Education

Kristín Helga Gudmundsdóttir is Project Manager in Continuing Education at the Department of Continuing Education of Iceland University of Education. At present she is manager of NERA (Nordic Educational Research Association).

IRELAND • Conor Galvin / University College Dublin

Galvin is an academic researcher based at University College Dublin, Ireland. He has extensive experience in education policy; education ICT; school-based curriculum action; continuity & change in education; and teachers' knowledge. His research interests include understanding how Information and Communication Technologies (ICT) can support research activity and in relation to teachers' / student teachers' professional preparation and development.

ITALY • Vittorio Midoro / Istituto Tecnologie Didattiche, CNR

Project manager of uTeacher, Midoro is senior research fellow at Istituto Tecnologie Didattiche (National Research Council, Italy). His present research activity pertains to on line education, co-operative learning and e-learning for lifelong elarning.

NORWAY • Morten Soby
/ Norwegian Network for IT - Research and Competence in Education, University of Oslo

Morten Søby is Director for the Norwegian Network for IT-Research and Competence in Education (1997-). He has been a Consultant for NKS Distance Education (87-91), Research Fellow at the Institute for Educational Research, University of Oslo (91-96) and Director of 6th International Conference on Cyberspace (97). Member of the Nordic Council of Ministers IT-policy group (99-00).

PORTUGAL • Cristina Novo / Escola Superior de Educação de Santarém

Cristina Novo is a teacher at the Escola Superior de Educação de Santarém. She's involved in a number of projects on teacher training in ICT for education. Specialized in Education for Children with Special Needs, and continued with a post-graduation in Organization and Evaluation - Distance Education, presently she is in her way to terminate her mastering studies in Education and Multimedia. Her professional areas of interest are: opened and distant learning, software evaluation, ICT and special needs and on-line educational contents, specially in Portuguese.

SCOTLAND • John Dixon / University of Glasgow

John Dixon works in the Department of Educational Studies at the University of Glasgow. His main tasks revolve around preparing undergraduate and post-graduate students for entry into the teaching profession, and in this context he has been involved in research and teaching in the uses of ICT in education for over 20 years.

SPAIN • Juana M. Sancho / Universitat de Barcelona

Professor of Educational Technology at University of Barcelona. Co-ordinator of the Quality Research Group FINT (Formación, Innovación y Nuevas Tecnologías). Co-director of the Centre for Studies of Change in Culture and Education (Parc Científic de Barcelona). Co-ordinator of the European project "School +: More than a platform to build the school of tomorrow".

SWEDEN • Carl Holmberg / Swedish Agency for Flexible Learning

Carl Holmberg has many years of experience of research and development work in distance education and flexible learning. Currently he is Senior Adviser in the Swedish Agency for Flexible Learning (CFL). CFL is a change agent in education systems in Sweden. He is also Chair of European Experts' Network for Education and Technology (EENet) and a Member of the Executive Committee of the European Distance and E-Learning Network (EDEN).

THE NETHERLANDS • Pieter Hogenbirk / Inspectorate of Education

Pieter Hogenbirk has been project manager of more than 100 projects on ict in education. In 1997 he became process manager for integrating ICT in primary, secondary and tertiary education on behalf of the Dutch government. From 2000 on he is working as a educational inspector, with special duties in the field of ICT in education. He is vice-chair of the IFIP-Working Group on secondary education and involved in a number of Dutch, European and Unesco ict-projects.