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**8th European Conference  
on  
e-Learning**

**University of Bari  
Italy  
29-30 October 2009**



**Edited by  
Dan Remenyi, Trinity College Dublin, Ireland**



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**The Proceedings  
of the  
8th European Conference  
on e-Learning**

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Dr Dan Remenyi  
Trinity College Dublin, Ireland

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## Preface

These Proceedings represent the work of contributors to the 8th European Conference on e-Learning, ECEL 2009, hosted this year by the University of Bari in Italy. As usual the papers range across a very wide spectrum of issues, all of which are pertinent to the successful use of e-Learning applications. It is clear that the role being played by e-Learning in the pedagogical process is considerable and that there is still ample scope for further development in this area.

The range of researchers from different institutions in different countries is impressive. It is clear from the research being done all over the world that the role which e-Learning plays today and may play in the future is truly global. The really important outcome of this global reach is that research and new ideas may easily be shared among both the academic community and those practitioners in other organisations who wish to be informed of the most recent thinking in the field.

With an initial submission of 193 abstracts, after the double blind, peer review process there are 97 papers published in these Conference Proceedings. These papers reflect the truly global nature of research in the area with contributions from Australia, Austria, Belgium, Canada, China, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Japan, India, Malaysia, New Zealand, Nigeria, Norway, Portugal, Romania, Russia, Saudi Arabia, South Africa, Spain, Sweden, Turkey, United Kingdom, United Arab Emirates and the United States. A selection of the best papers – those agreed by a panel of reviewers and the editor will be published in a conference edition of the EJEL (Electronic Journal of e-Learning [www.ejel.org](http://www.ejel.org)).

I wish you a most interesting conference.

Dr Dan Remenyi  
Trinity College Dublin Ireland  
October 2009

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## Biographies of Conference Chairs, Programme Chairs and Keynote Speakers

### Programme Chair



**Augustino Marengo's** research activity as Assistant Professor in Faculty of Economics at University of Bari, takes place primarily on didactic methodologies implemented by the use of ICT tools, particularly the development of e-learning web-based platforms that compete to introduce the technologies of distance learning in traditional institutional campus courses and activities. As coordinator of OSEL (Open Source e-learning research project, <http://www.osel.it>), currently his research plan is to create a database of Open Source LCMSs in order to choose and compare them. The research group is actually involved in usability, accessibility and quality evaluation of LMS (Learning Management Systems) and CMS (Content Management Systems) with a special goal to evaluate Open Source e-learning platforms. Website: <http://www.agostinomarengo.it>. Skype: agomare.

## **Conference Chair and Keynote Speaker**

Jane Klobas is a researcher at Bocconi University in Milan, Italy, where she is joint leader of a multi-national study of students' psychological responses to online learning. She also holds an appointment as Professorial Fellow in the Graduate School of Management at the University of Western Australia in Perth, Australia. Jane has many years of experience in both distance and online teaching, and has won awards for her innovative teaching at the University of Western Australia. Her research concerns the role of the Internet in communication of information. She uses principles of social psychology and economics to study the role of the Internet in education and in tourism.



## **Keynote Speaker**



**Julià Minguillón** received his PhD from the Universidad Autònoma de Barcelona (UAB) in September 2002. In January 2001 he joined the Universitat Oberta de Catalunya (UOC) where he is a faculty member of the Computer Science, Multimedia and Telecommunication Studies department. He has developed learning resources for object oriented programming, abstract data types engineering and compiler construction. He is also involved in the integration of e-learning standards in virtual learning environments, such as IEEE LOM, SCORM and IMS LD. His main research interests include the formal description of the learning process by means of ontologies, personalizing the learning process by means of adaptive itineraries based on reusable learning objects, and user modeling in virtual e-learning environments applying web mining techniques for improving user experience and usability, accessibility and mobility issues. He is also interested in open educational resources and the uses of social tools for teaching and learning in virtual learning environments. He was in charge of the UOC participation in the OLCOS (Open Learning Content Observatory Services) EU funded project. He leads the Spanish Government funded PERSONAL(ONTO) project, the framework that articulates all the aforementioned research lines and the E-MATH++ project which promotes the use of learning object repositories in virtual learning environments.

## **Biographies of contributing authors (in alphabetical order)**

**Ahamed Bakeri Abu Bakar** has served the National Library of Malaysia for 24 years. He currently holds the position of professor at the Department of Library and Information Science, International Islamic University Malaysia, Kuala Lumpur, Malaysia. He has published a number of articles in refereed journals and has presented numerous papers at international conferences worldwide covering areas such as digital libraries, e-governments, and information access.

**Gemma Aguado** received her degree in Pedagogy at the University of Barcelona in Postgraduate Design and Production of Multimedia Instructional Materials at the Autonomous University of Barcelona. University Master in Educational Psychology at the University of Barcelona. Currently technical research of IN3 (UOC) and professor in the Faculty of Education at the University of Barcelona. Her interest is currently focused on the Psychology of Education, and especially in the processes of teaching and learning computer based learning.

**Asma Al-Ayed** is a lecturer in Computer Science department at Umm AlQura University, Makkah, Saudi Arabia. Her Master thesis was about intelligent FAQ answering system for e-learning platforms. Her interests include knowledge management, e-learning, and adaptive systems.

**Nahla Aljojo** worked as an IT manager in the economics and administration department at King Abdul Aziz University in Saudi Arabia. She has a master's degree in computer systems and Information Technology from the Washington International University (USA). She is also a Ph.D. doctoral student at the School of Computing at the University of Portsmouth (UK).

**Antonios Andreatos** is a Professor at the Computer Engineering Division of the Hellenic Air Force Academy. He received the Diploma in Electrical Engineering from the University of Patras, the M.S. from the University of Massachusetts (Amherst), the M.Ed in Adult Learning from the Hellenic Open University and the Ph.D. from the National Technical University of Athens.

**Sara Archard** is a lecturer at the University of Waikato, Aotearoa/New Zealand. She teaches in an online Graduate Diploma of Teaching–Early Childhood. Sara is currently undertaking her M Ed and is researching how personalising the eLearning environment may impact on developing a community of Learners.

**Mikel Asensio** Ph.D. is senior professor at the Universidad Autónoma de Madrid (Spain). Since 1987, he is teaching Cognitive Psychology, Informal Learning and Art Psychology. Into the museum field, he is the Director of different projects about museum planning, heritage interpretation and education. He is the director of different research projects form European, National, and Regional Agencies. He is the author for more than one hundred publications. Last years became interest on TICs and museums.

**Ana Barata** graduated in Modern Languages and Literature at the Faculty of Humanities of Oporto University in 1998. She developed her Master dissertation in English Culture at the same faculty, and is currently a PhD student in



Communication Sciences in the field of Interactive Audiovisual and Media at the New University of Lisbon. She teaches languages skills in the Computer Engineering degree at ISEP and collaborates with GILT and the Multimedia Laboratory.

**Ghiță Bârsan** is Professor and Vice-Rector for Academic Studies at Land Forces Academy, Sibiu, Romania, in the Technical Sciences Department. Author of 14 books and 114 articles and studies in International Conferences Proceedings and specialized reviews, he is responsible for "Army-e-Learn" project for Romanian Land Forces. His main research expertise areas are in the following domains: Defense Modeling and Simulation, Advanced Distributed Learning and Mechanical Engineering.

**Josep Batalla** Since 1998 has been a lecturer in Economics and Business Studies at the Universitat Oberta de Catalunya (UOC). He holds a PhD and is a graduate in Economics and Business Sciences from the University of Barcelona. At UOC he carries out his teaching and research activities in the field of applied economics. He is author of several articles on these subjects and researcher of the Observatory of the New Economy (ONE), which belongs to the Internet Interdisciplinary Institute (IN3-UOC).

**Yongmei Bentley** is Senior Lecturer in Logistics at the University of Bedfordshire. She teaches business and management related subjects at both undergraduate and postgraduate levels. Her current research interests include applications of e-learning, logistics and supply chain management in a downturn. She is an active researcher, Fellow of HEA, and holds membership of CILT, and UKAIS.

**David Bond** is currently a lecturer in the School of Accounting after joining the School in 2003. He completed his BBus (Hons) in 2002, and has recently submitted his PhD. He has taught financial reporting at both an undergraduate and postgraduate level.

**Mark Brown** Associate Professor is the Director of Blended Learning and Distance Education at Massey University. He has over 20 years experience in the university sector. Dr Brown has an extensive background in the use of new educational technologies for flexible and distance learning and serves on several journal editorial boards. Notably, he was centrally involved in developing the Mahara open source eportfolio system. Dr Brown's holds a National Award for Sustained Excellence in Tertiary Teaching.

**Margaret Bruce** has been enthusiastically involved in podiatric education for more than 25 years, mostly spent at the University of Plymouth. I have been engaged in the development, organisation and delivery of the curriculum and am focused on supporting learning in practice.

**Richard Caldarola** is an Assistant Professor of Business with Troy University, Atlanta, USA. He facilitates on ground and online courses in Marketing, Accounting, Research, and Strategy. He holds a Doctorate in Business Administration (D.B.A.) from Nova Southeastern University (Fort Lauderdale, USA), and is a Certified Management Accountant (CMA) and Certified Financial Manager (CFM).

**Antonio Cartelli** is researcher in Didactics and special pedagogy, he manages the Laboratory for Teaching-Learning Technologies and the Centre for ICT and on line teaching in the Faculty of Humanities at the University of Cassino – Italy. Among his most relevant publications there is the *Encyclopedia of Information Communication Technology*, edited in collaboration with M. Palma. He is also editor in chief of the "International Journal of Digital Literacy and Digital Competence" starting its publications in 2009.

**Ines Casanovas** was born in Buenos Aires in 1953. She is an Engineer in Information Systems, Master in Higher Education and Master in Informatics. At present she is professor and researcher at UTN (National Technological University) and at University of Buenos Aires. Since 2003 she has been Guest Lecturer at Jönköping International Business School in Sweden, where she is currently performing her doctoral studies in Informatics. She is also member of the CenIT International Research Group and Director for Special Projects and Researches in FUNDESCO (Foundation for Knowledge Developing) of Argentina. As professional she has worked as IT auditor for the Argentinean Government and IT Project Manager for private companies. She has been Academic Coordinator of the career 'Licentiate in Educational Technology' and Evaluator of Final Projects and Thesis in Information Systems Engineering at UTN. She has had intense participation in International Conferences and publishing in IT and Educational Technology fields.

**Mark de Groot** works for the Technologies for Learning team at Leeds Metropolitan University. He has more than 10 years experience initiating and supporting a wide program of staff development activities across and beyond the University.

**Antonio De Nicola** is a researcher at IASI of the Italian National Research Council (CNR). He is the author of several papers on eLearning, business processes, ontology building methodologies, and semantic technologies. He has participated in the activities of several European and national projects. Among them, there are LEMAIA, Web-Learning, COIN, Interop NoE, and LD-CAST.

**Carmen de Pablos** is a Professor in the Business Administration Area at the Rey Juan Carlos University in Madrid from 1994. She is specialised in the impact of information technologies over organisational systems where she develops main research. She has presented communications in different international venues and has published in specialised journals.

**Vincenzo Di Lecce** received the Doctoral degree in electric engineering (cum laude) from the University of Bari Italy, in 1980. Today he is Associate Professor of Computer Science at the Polytechnic of Bari. He is the author and coauthor of

about 100 papers. His current research interests include image retrieval and analysis, parallel and distributed computing, and ontological approach to artificial intelligence.

**Patrícia Dias** teaches at the Catholic University of Portugal and is a member of its Research Center in Communication and Culture. She graduated in Social Communication, is a Master in Communication, Organization and New Technologies and is currently researching for her PhD in Communication Sciences, focusing ICT mediated communication in organizations.

**Jiří Dlouhý** is specialist on cybernetics, since 1992 works in Environmental Center of the Charles University, Prague – responsible for environmental informatics, databases, computer network, and co-ordination of educational projects – he is the head of Environmental Education department. He is also a member of executive board of the European Environmental Bureau, a chairman of the Society for Sustainable Living; a founding member of the International Society of Information Specialists (in 1995 president of this society).

**Elisabeth Dunne** is Head of Project Development, in Education Enhancement at the University of Exeter, UK. Her career has been devoted to the promotion of innovation and change through coordinating and directing major research, development and evaluation projects, and initiating a range of institutional developments, to support the enhancement of learning, teaching and assessment.

**Alan Durrant** is Head of Work Based Learning, School of Arts & Education at the University of Middlesex. His current research interests include Developing Learning and teaching in higher education, The role of student feedback in developing academic programmes and Supporting established practitioners in the creative and cultural sectors.

**Jane Eberle** is an associate professor in Instructional Design and Technology in The Teachers College at Emporia State University in Emporia, KS. She earned her Ph.D. from Kansas State University and taught in Manhattan, KS, prior to joining the ESU faculty in 2003. She teaches Instructional Technology for Educators to preservice teachers and graduate courses in visual literacy, universal design for learning, and integrating technology into the classroom. Her research interests include heutagogy, universal design for learning, assistive technology, and classroom teacher practices.

**Erik Engh** from Sør-Trøndelag University College, has collaborated with mechanical industries world wide during the last 30 years. He has obtained experience from education and training of industry personnel in a range of different countries. Mr. Engh has been developing and implementing systems for Quality Assurance and Quality Control. He has participated in several Leonardo da Vinci and Eureka projects targeting skills upgrading process in industry during the last years.

**Nuno Escudeiro** is an Assistant Teacher at the Computer Science and Informatics Department at ISEP – Instituto Superior de Engenharia do Porto. He is a PhD student and a researcher at LIAAD INESC Porto LA – Laboratory of Artificial Intelligence and Decision Support. His main research interests are related to information retrieval and automatic edition of unstructured digital objects.

**Sebastian Fiedler** is a researcher at the Centre for Social Innovation in Vienna, Austria. From 2005-2008 he was the pedagogical manager of iCamp, an EU funded research and development project that explores the potentials and limits of supporting competence advancement in respect to collaborating, self-directing and social-networking within landscapes of distributed tools and services in higher education.

**Álvaro Reis Figueira**, PhD, is presently a lecturer at Faculty of Sciences in University of Porto. In the last years Prof. Figueira has been conducting most of his research in semantic digital libraries, web-based learning and standards in education coordinating the information systems development team at the FCUP's Computer Centre.

**Duncan Folley** BSc(Hons) MSc is a Principal Lecturer at Leeds Metropolitan University. He has been the Faculty wide level 1, 2 and 3 leader and is currently the Placement Manager. His main area of research involves ALT and the use of Blended Learning Technology to enhance the student experience.

**Susana Gaytan** starts at the University of Seville as a Ph. student in Neurobiology. After her Ph. D. she obtained an Assistant Professor position, generating abundant resources, articles, and practical designs on education. Right now she has the post of Vicedean on Educational Innovation in the Faculty of Biology.

**Andreas Giannakouloupoulos** is a Lecturer at the department of Audio and Visual Arts of the Ionian University. With an interdisciplinary background including Economics, Logic and Communication studies, his main field of academic activities is Computer Mediated Communication and especially the web development technologies. His research interests focus on information architecture, web-based media, content management platforms and e-learning systems as means of effective communication via the web. Personal website: <http://www.media.uoa.gr/~andreas>

**Luminița Giurgiu** is Associate Professor at "Land Forces Academy", Sibiu, Romania, in the Technical Sciences Department. Her interest's domains refer to web programming, social software, the use of Information Technology in education, virtual learning environments.

**Neil Glen** works primarily in the field of tangible computing and web 2.0 as consultant, practitioner and researcher. His interests lie in connections between the physical spaces we occupy through the virtual spaces we create. At Bath School of Art and Design Neil heads up the school's interest in interactive media. Through his consultancies, [nextdesign.co.uk](http://nextdesign.co.uk)

and just-pressed, he has worked for organisations including Apple Inc, Nokia, Transport for London, IDEO, FutureLab, and the RCA in London.

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# New Technologies in Siberia: e-Portfolio for Student Evaluation and Professional Development

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**Abstract:** One of the fields of interest of Siberian Federal University today is improving the quality of education, assessment and evaluation via the use of modern technologies. That is why the university launched a project supported by Russian Humanitarian Fund and aimed at exploring the potential of student e-portfolio. The project is directed at bachelor- and master-degree students with a major in education. It seems reasonable to start the project in this field of study, because future teachers and educators can provide more professional feedback and participate in the project development. The task of the project is to work out the main principles and the methodology of e-portfolio for student assessment and professional teacher development. The paper describes the first experience of e-portfolio methodology being introduced at both levels of the university including e-portfolio effectiveness and possible threats, its impact on assessment, learning, and teaching. These are presented as a result of a survey aimed at studying teachers' and students' opinions about e-portfolio.

**Keywords:** e-Portfolio, student assessment, teacher accreditation, educational and professional achievements

## 1. Introduction

Modern economies set new requirements to student assessment. As a consequence universities try to overcome the existing 'mismatch between educational outcomes and society's needs' (Boyle and Christie 1996). New forms of assessment are emerging to replace or complement the more traditional multiple-choice and other tests. Russian universities are also undergoing a similar process. Educators are trying to introduce student-centred forms of assessment, which evaluate individual student progress and exploit a variety of tools for the purpose of objectivity.

In line with the Bologna Declaration (Bologna Declaration of 19 June 1999) Siberian Federal University (SFU) is introducing the system of credit points, the module-based system of education, and the rating scales. Attempts are being made to base assessment on the expected results and the amount of effort students are supposed to undertake in order to achieve the results. The interpretation of educational outcomes has changed. Now it focuses on what students are aware of and are able to do. The introduced changes in assessment scheme also aim to be consistent with regional, national, and European qualification frameworks.

The system of assessment at Siberian Federal University has already achieved a few positive results:

- Students now get informed about the assessment criteria and procedure beforehand
- Students are actively involved in the development of their individual educational trajectory
- Assessment becomes more regular
- Every student can have an individual tutor

Unfortunately, the study process itself has not changed a lot with the introduction of the new assessment scheme. Also the credit system and the 100-point assessment scale undergo additional calculations and transformation for the traditional Russian 5-band scale, which undermines the role of the Bologna system.

The Institute of Education, Psychology and Sociology (IEPS) is one of the seventeen institutes of Siberian Federal University. Naturally, the institutes share the main university policies. But at the same time they enjoy certain freedoms and can choose issues and topics for research as well as innovative projects for development and implementation. One of the projects in IEPS is aimed at enhancing assessment and evaluation system by introducing the technology of electronic portfolio in the process of student and teacher assessment. E-portfolio has been introduced in the syllabus of the first year of Bachelor of Education programme and both years of Master of Education programme. The decision to introduce e-portfolio for teacher development and assessment has been taken by the Institute Council and preliminary research has been carried out. This paper will describe the experience acquired during the e-portfolio project, research results, and issues raised.

## **2. Why e-portfolio?**

Traditional assessment forms employed in Russian universities are far from being objective, reliable and effective. The main problems are presented below:

- Widely used multiple-choice tests are made so that they only provide information about students' knowledge ignoring acquired skills, competences, and other student achievements (Kilbane and Milman 2003).
- Assessment results are converted into one of the four remaining grades of the Russian "five-grade scale", where '5' means 'excellent', '4' – 'good', '3' – 'satisfactory', '2' – 'poor', and '1' is not being used anymore. This information is extremely insufficient. When students graduate from the university all they can offer their employers are diplomas with the grades. Unfortunately they are unable to present any evidence of their skills and competences. There is 'no place' for students' articles, certificates, diplomas, developed professional materials, etc.
- Students do not have much opportunity to measure their individual progress in the course of study. Norm-referenced assessment is still predominant as it is convenient for teachers.
- Teachers have access to the artefacts of students' work of their own subjects only while university administration does not have direct access to their work at all. This causes conflicts in the area of student assessment.
- Students are not motivated to demonstrate their professional, educational and personal achievements. This deprives them from seeing the opportunities used by their peers.

The above mentioned problems can be solved with the help of electronic portfolio introduced in the scheme of study, evaluation and assessment. The purpose of e-portfolio is to give learners an opportunity to identify and reflect over their strengths and weaknesses, make use of peer and teacher feedback, and allow teachers to appreciate and support the learners (Beetham 2005). Besides, e-portfolio can help university not only prepare students for future professional activities but also focus on:

- transition between study and work
- successful employment with further career development
- next education stage (postgraduate education, master courses, doctoral courses, life-long professional development)
- successful social adaptation

## **3. First experience**

In 2007 Siberian Federal University launched the e-portfolio project supported by Russian Humanitarian Fund and aimed at exploring the potential of student e-portfolio. The project involves both levels of higher education (Bologna Declaration of 19 June 1999) and is carried out by the Institute of Education, Psychology and Sociology.

It was common for the bachelor-degree and the master-degree students that the process of e-portfolio development included the following stages:

- Get motivated, set goals
- Discuss, develop and adopt e-portfolio structure
- Discuss and adopt assessment criteria
- Plan artefact collection
- Collect, classify, and make digital versions of artefacts
- Design individual e-portfolio (get peer or teacher feedback if needed)
- Present draft version in the group, get feedback, discuss, get tutorials
- Publish the final version of e-portfolio in the net of IEPS

The students also discussed specific features of e-portfolio for the following purposes:

- to present themselves as professionals to prospective employers
- to reflect over and consolidate their professional experience

- to reflect over and evaluate their achievements during their study

Assessment criteria for e-portfolio were discussed with the students at one of the early stages. Some criteria required explanation, others were edited, As a result the following ten criteria were agreed upon:

- Layout
- Evidence of computer skills
- Evidence of multimedia skills
- Content
- Evidence of reflective skills
- Structure
- Effectiveness of navigation tools
- References and cross links
- Diversity and effectiveness of artefacts
- Evidence of progress

Closer to the end of the course the students presented their draft versions to teachers and other students. They tried to assess each other against the criteria, while teachers assisted and guided them. As a result, the final assessment, which was done by teachers, caused no tension on the part of the students as all potential problems had been solved during the preliminary assessment session. The vast majority of the students agreed that their portfolios were assessed objectively. Also for bachelor-degree and first year master-degree students the assessment was not final and they will be able to improve their portfolios next year.

The students could get maximum ten points for each criterion. The points then were added and the students could get their scores out of 100 points. Also students had an opportunity to get verbal comment of their work. Unfortunately these results can not be recorded in the students' university diplomas, as the 'five-grade scale' is still predominant. What we can do, is provide a supplement with verbal comment and use student portfolios as the best evidence of their skills, competencies and experience.

There were other features in the process of e-portfolio development specific only for bachelors or for master-degree students. They are presented below.

### **3.1 e-Portfolio in bachelor-degree programme**

The e-portfolio method has been used at lower stages of Bachelor in Education course within the block of information technologies disciplines. This block includes such disciplines as Multimedia in Education, Computer Practice, and Informatics. It is specific for this programme that e-portfolio is introduced during the Constructive Student Game (CSG) which takes place in the first year of study and helps students shape their individual educational trajectories. The Game is a tradition in the Institute of Education, Psychology and Sociology. It launches reflection on students' future professional careers, educational principles, own resources, required and acquired professional competences.

During the game students create their own 'myths' – imaginary stories that reflect their view on teacher's mission and educational principles. Students with similar views form groups, create a 'group myth' and share it with the others. Then the groups are classified. Usually there are groups of teachers-craftsmen, teachers-mediators, teachers-masters, teachers-rangers, teachers-researchers. The Constructive Student Game is an opportunity to introduce the rules of professional communication, to meet teachers and other students in a play-like relaxed situation, and to launch reflection upon the teaching profession. In order to develop reflection skills it is important to create a relaxed atmosphere and make learners raise problems that they would be highly motivated to solve.

Since portfolio is considered to be a 'container that holds examples of student or teacher work (the "artefacts") and reflections on that work that transforms the artefacts into "evidence" of achievement'(Barrett 2002), it seems logical to introduce e-portfolio early in the course of study.

Therefore, during the CSG in April 2009 the students were offered to start their individual e-portfolios in order to help them develop reflection skills and keep the game artefacts. The ideas behind e-portfolio were discussed at one of the sessions and the students were offered a possible e-portfolio structure. They were given a chance to discuss the issue and as a result came up with their own structure (Table 1).

**Table 1:** e-Portfolio structure for first-year bachelor-degree students

Nº	Section name	Section description
1	Introduction	Author's photo or a collage, a greeting from the author
2	Resume	Professional author's resume for prospective employers
3	Educational principles	Author's own view and reflection of the main educational principles, choice of profession; author's plans for education, expectations from the course
4	Personal page	Author's autobiography, photos, credo in life, personal principles
5	Achievements	Personal, professional and educational achievements, including awards, certificates, publications, etc.
6	Reflection	Reflection on the Constructive Student Game, professional expectations, author's learning resources
7	Resources	References to author's favourite or preferred literature (including professional literature), Internet sites and other resources
8	Contact information	Author's telephone, e-mail address, fax, home or work address, etc. It is author's decision what information to include

The teachers and the students agreed that the "Achievements" section would include artefacts from the subjects of the Information Technologies module: Multimedia in Education, Information Technologies for Education and Research, Web-Design. So in the first year of the Bachelor-degree programme e-portfolio was mainly used to assess and evaluate students' achievement in this field. Requirements to the course completion and assessment criteria were also discussed with the students. Video-files, animation, graphics, and other materials served as artefacts of their e-portfolios. E-portfolios were published on-line for others to see and discuss which raised the students' motivation and made the process of assessment and evaluation more open and objective. Observation during the course and reflection upon this new method of student assessment and evaluation demonstrated certain progress in the development of the students' information and communication competences, self-esteem, and reflection skills.

### **3.2 e-Portfolio in master-degree programme**

E-portfolio at the Institute of Education, Psychology and Sociology was introduced into the master-degree programme in September 2008. It was introduced in the programme of the following disciplines: Multimedia in Education, Web-Design and Distance Education Technologies, and E-portfolio in Higher Education. The level of proficiency in information technologies as well as students' progress were assessed against a set of criteria presented to and discussed with the students. The artefacts included the students' projects, presentations, essays, videos, graphics, analytical reports, research articles, course papers, certificates and diplomas, and reference letters. The process of e-portfolio introduction, development, discussion and assessment involved a variety of participants, including the students and the IT teachers themselves, other bachelor- and master-degree students, teachers of other subjects, students' parents, and university staff. The learning process comprised classwork, independent work, and university activities for students and teachers.

The structure of e-portfolio was adopted as a result of discussion between the teachers and the students (Table 2.) It was agreed that the students' educational beliefs and principles would be covered in the "Reflection" section. The "Achievements" section apart from the information about the students' educational and personal accomplishments contains professional information since master-degree students already have some real professional experience.

Table 2: e-Portfolio structure for master-degree students

Introduction
Resume
Personal page
Achievements
Reflection
Resources
Contact information

It should be mentioned that sections “Personal page” and “Reflection” caused confusion and misunderstanding with the students. First, the students could not come to an agreement about what personal information should be placed in the portfolio. By the end of the discussion it was agreed that the “Personal page” section would include autobiography, photo album and some information about their personal successes. Also every student decided whether she would make her “Personal page” public or not. The “Reflection” section caused discussion for two reasons. First, it was necessary to agree about the limit of material for this section. The students agreed to include essays about their educational principles, analyses of their courses, views on their professional careers, their professional values and beliefs. Secondly, reflection is a comparatively new type of activity for Russian education. Most teachers lack any experience in this area and have a vague vision of how to develop reflection skills. So, the discussion turned out to be extremely valuable for both the teachers and the students.

By the end of the academic year the students presented their e-portfolios at the joint session with bachelor-degree students (Figure 1.). Most of the works had clear evidence of the progress the students had made during the course. In general, the students were highly motivated to create their e-portfolios. They admitted the motivation came from the fact that they did the work for a number of purposes. They presented their educational and professional achievements as well as learned about the educational role of e-portfolio. They learned why, when, and how to introduce e-portfolio for educational purposes. They also gave quite professional feedback about each other’s portfolios. They studied professional literature on the subject and international experience of using e-portfolio method for a variety of purposes. Therefore it seems possible to say that the process of assessment was really authentic (Mueller 2005).

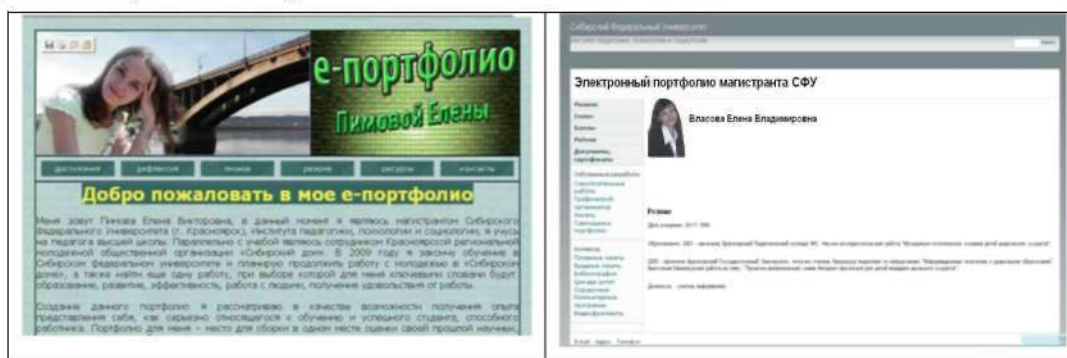


Figure 1: Examples of “Introduction” section

## 4. First results

### 4.1 Advantages

As a result of the two years of the e-portfolio project the following accomplishments have been formulated:

- Being a kind of ‘authentic assessment’ (Kilbane and Milman 2003) portfolio provides an opportunity to complete real-life tasks and to assess students’ own progress.
- E-portfolio contributes to the development of thinking culture, logic, analytical skills, ability to generalize, classify and evaluate.
- The process of collecting artefacts (projects, course and research papers, etc.) is purposeful, systematic, and reflective. It is performed in cooperation and through interaction with other stakeholders.

- E-portfolio technology influences students' interaction and produces a feeling of community and builds responsibility for what they publish on-line.

We also think that e-portfolio technology encourages the emergence of a new kind of learning culture that is characteristic of a society based on knowledge. This culture can be developed when:

- students take active part in the design of their own educational trajectory
- students are aware of the criteria for portfolio artefacts selection
- students are aware of and accept the criteria of their progress assessment
- students have a right to decide what personal qualities can be presented and how they are presented

The students shared their feedback on the effectiveness of e-portfolio as a tool of assessment, evaluation, learning, and professional development. They mentioned that e-portfolio enhances thinking and raises responsibility for one's learning and development. E-portfolio gives additional opportunities for learning, research and communication. It involves students in the process of learning, assessment, and evaluation and raises awareness of the principles of assessment (Falchikov 2005). The students appreciated it that e-portfolio motivated them to start reflecting on their professional experience and future career. They agreed that e-portfolio helped them identify professional and learning problems and find effective solutions.

## **4.2 Possible threats**

There are three inter-related elements in the process of assessment: (1) data collection, (2) data interpretation, and (3) presentation of results (Lambert and Lines 2000). We will look at what possible threats can be faced at each of the stages.

One of the advantages of e-portfolio over traditional assessment forms is that it is students themselves who are responsible for data collection. Still it turned out to be not very simple. Students easily provide formal information about their achievements, e.g. certificates, diplomas, but feel rather uncomfortable with the information that witnesses their skills and thinking. Reflection has so far proved to be the most difficult section. Students are not used to contemplate over their beliefs, values and life principles because it is not in the culture of Russian university education. Nobody observes how their professional views develop in the course of time. Instead, students provide evidence of their knowledge of distinguished educationalists' principles. This also explains why it turned out to be a problem for the majority to present evidence of their professional experience – lesson plans, videoed lessons, pupils' works. Among the threats connected with data collection students mentioned plagiarism and manipulation. We think it is a signal that plagiarism is developing faster than the university staff imagines. Therefore, further e-portfolio development needs to deal with this problem.

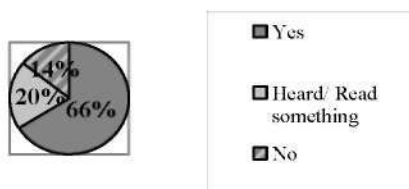
The stage of data interpretation relies mainly on teachers. The main problem here at the moment lies in the fact that Russian teachers may be unable to interpret the e-portfolio information effectively as they have no experience in the required area. The experience of IEPS has proved that teachers do indeed have a problem assessing students' reflective writing. Teachers do not have a clear vision of how this or that reflective conclusion or idea serves as evidence of student personal, educational, and professional development. And lastly, presentation of results will remain ineffective if we stick to the 'five-grade scale' (see 2. and 3.). Therefore, one of the issues to consider when introducing e-portfolio for assessment purposes is to provide efficient training, continuous support, and teacher cooperation.

## **5. Further research and issues**

In order to decide how to continue the e-portfolio project, IEPS conducted a survey among the teachers and the students of Siberian Federal University. The purpose of the survey was to find out teachers' and students' awareness of and attitude to the e-portfolio method for the purposes of assessment, evaluation, learning and development. A questionnaire was spread among the teachers, bachelor- and master-degree students of humanities and social sciences of Siberian Federal University. Altogether 200 teachers and students gave their responses to the questionnaire. Some of the findings as well as issues raised by the survey are presented below.

### 5.1 Awareness of e-portfolio

The first question focuses on student and teacher awareness of the e-portfolio technology. As shown in Figure 2, 86% of the respondents are familiar with e-portfolio, though 20% answered that they have only heard something. Only 66% of the respondents are well aware of the technology. This is not enough to be able to say that electronic portfolio has gained popularity in Siberia, and in SFU in particular, so we can expect certain tension on the part of the target groups. To overcome this some measures will need to be undertaken, including sessions explaining the rationale, the potential and the mechanism of the e-portfolio technology.



**Figure 2:** Are you familiar with the e-portfolio method?

### 5.2 e-Portfolio potential for various educational and professional tasks

Next the survey focused at discovering how different target audiences see e-portfolio as a tool to solve educational and professional problems. The majority of the respondents believe that the technology can be effective for the following purposes: 1) presentation of achievements (56%) 2) evaluation of personal achievements (48%) 3) reflection upon one's educational/ professional activity (Figure 3.)

At the same time it is interesting to compare the views of teachers-respondents and the students. Both groups do not see much potential in e-portfolio for the purpose of educational assessment, though it is widely used for this purpose as an alternative to traditional methods of assessment and evaluation. A possible explanation is that the traditional tests and the "five-grade scale" are deeply rooted in the hearts and minds of people in Russia. Therefore, alternative ways of assessment and evaluation may need time and special effort to be appreciated by the system of education in this country.

In contrast with educational assessment, reflection is viewed differently by the two groups of respondents. While teachers recognise the effectiveness of e-portfolio for this purpose, students are of different opinion. This can be explained by the idea that reflection is still a new phenomenon in Russian education system and educational institutions need to undertake certain measures in order to help learners develop reflection skills.

As can be seen from the chart, both groups of respondents agree that e-portfolio can be effective when someone wants to present her/ his achievements. It seems natural because this purpose is not associated with stress, and of course, e-portfolio is so convenient for gathering all certificates, diplomas, projects, articles, etc. and so easy to access.

Another surprising result of the questionnaire is connected with the use of e-portfolio as a means of developing ICT and multimedia competences. Both teachers and students are unanimous in this matter. The biggest question is why the students are of negative opinion. Usually students get really involved in practical tasks that require access to computer. A possible explanation is that the students did not get enough support of information technologies specialists. At the moment this question needs further research.

Similarly professional development gathered fewer voices than it deserves. Again, this could be explained by the fact that reflection, direct and indirect (while selecting materials for the portfolio), is not recognised as a tool for learning and development.

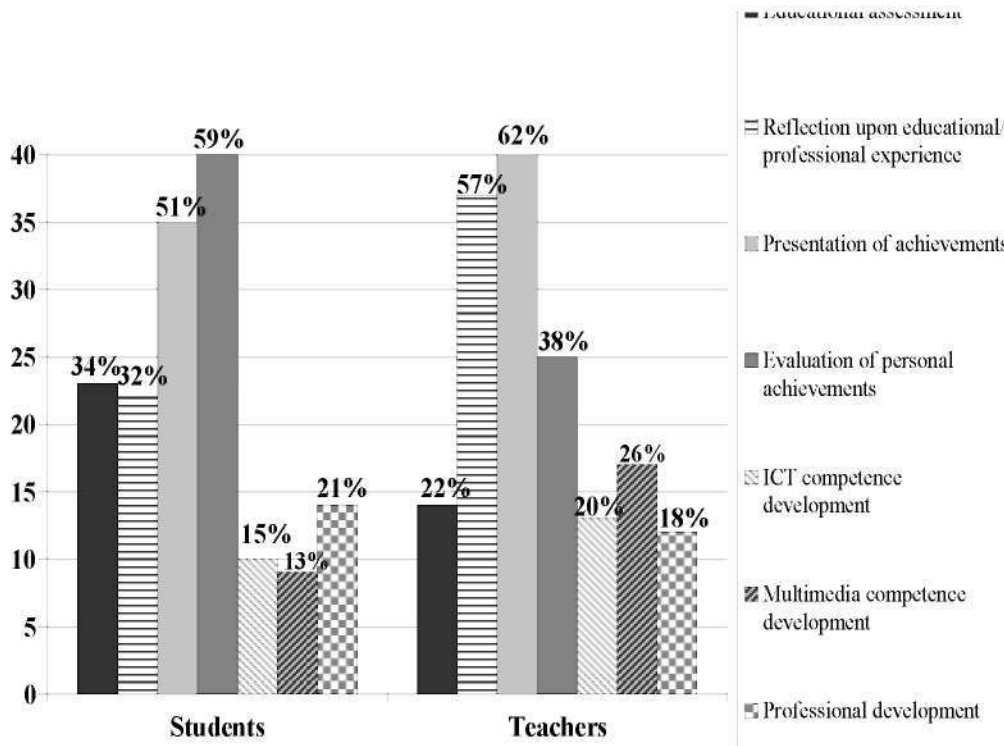


Figure 3: For which purposes can e-portfolio be used effectively?

### 5.3 e-Portfolio for teacher accreditation and professional development

Providing highest quality education is the main priority at Siberian Federal University. The university tries to do its best to improve teaching. This involves teacher evaluation and assessment. At the moment the scheme is old and ineffective. Teachers present information about the courses they teach, the papers they publish, and the teacher development seminars they attend.

Our research into e-portfolio and the first experience with students revealed e-portfolio potential for teacher development and accreditation. The Institute Council of IEPS agreed to develop the project in this direction. Therefore this focus was also included in the survey because teacher assessment, evaluation and accreditation are among the most sensitive and complicated areas in education. As it was expected, the teachers' and students' opinion of e-portfolio for the purpose of teacher evaluation and accreditation was rather low. Most respondents do not think e-portfolio should be introduced as a tool for teacher accreditation. Also, the respondents mentioned excessive workload as one of the possible threats. On the whole the respondents see the role of e-portfolio as shown in Figure 4.

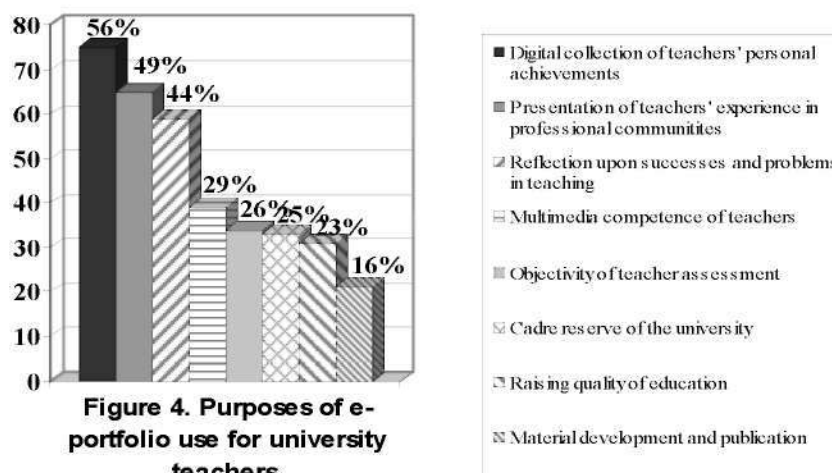


Figure 4. Purposes of e-portfolio use for university teachers.

Figure 4: Purposes of e-portfolio use for university teachers



Interestingly, most of the respondents do not trust e-portfolio as an objective means of teacher assessment. It is especially surprising because a large number of the respondents were the students who had previously mentioned the high level of e-portfolio objectivity. At the same time most respondents state the high potential of e-portfolio to present professional achievements and to reflect over professional issues. We see some inconsistency here, because teacher assessment and accreditation covers for 90% the first three most popular items in Figure 4. We explain this inconsistency by the fact that assessment is much more stressful to teachers than to students. Students at the university are in the position of learners, those who are not expected to be perfect. Teachers, on the contrary, are supposed to be experts and this is why any little threat to their proficiency and professionalism causes immediate negative reaction.

This problem needs to be dealt with. A possible solution could be to introduce and develop e-portfolio gradually, by demonstrating e-portfolio potential for professional development and evaluation as a tool that implies active participation of the portfolio creator and provides more objectivity than most other forms of assessment.

## **6. Conclusion**

Geographically Siberia can seem a remote place for Europe. Nevertheless, it strives to follow European standards in many aspects, education being one of the most important. The e-portfolio project being developed by Siberian Federal University is an attempt to raise the quality of higher education. It has achieved some positive results and has gained appreciation with the students and teachers. At the same time it has raised a number of issues. Some problems are rooted in educational tradition, some emerge due to lack of experience. The key to success is human resources, in our case, developing and cooperative teachers and students that have gained positive e-portfolio experience and can support the project.

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