Christian M. Stracke
Ulf-Daniel Ehlers
Alastair Creelman
Tatiana Shamarina-Heidenreich (Eds.)

Changing the Trajectory:

Quality for Opening up Education

Christian M. Stracke
Ulf-Daniel Ehlers
Alastair Creelman
Tatiana Shamarina-Heidenreich (Eds.)

Changing the Trajectory:

"Quality for Opening up Education"

Official Proceedings of the International EIF / LINQ Conference 2014

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Christian M. Stracke, Ulf-Daniel Ehlers, Alastair Creelman, Tatiana Shamarina-Heidenreich (Eds.)

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Contact:
Christian M. Stracke
University of Duisburg-Essen
Universitaetsstr. 9
D-45141 Essen (Germany)
christian.stracke@uni-due.de

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Changing the trajectory - An Introduction

Digital technologies are radically changing the landscape of education and training. Open educational resources (OER), 'Massive Open Online Courses' (MOOCs) and the question of how to recognize open learning in formal education are challenging traditional models and practices.

These global changes are having an increasing impact on education and training institutions, teachers, learners and publishers. With the introduction of MOOCs in recent years and the uptake of open education resources, open education at large and its quality have become an issue of major importance for education and training institutions, policies and professionals. Studying and learning have evolved from closed to open processes, which demand greater self-organization skills, higher levels of media literacy and new models of support and organization. Education institutions, professionals, policy makers, public authorities for formal education as well as non-formal training providers and learners are discovering the benefits of opening up learning opportunities.

However, quality evaluation and development models have not yet matured enough in order to provide guidance for open learning models to all stakeholders how to shape content and learning environments or provide effective support for institutions and educators. Uncertainty is growing as to whether the new open learning environments are fit to lead the European learning revolution needed for the 21st century. In order to make open learning and education more relevant and feasible for organizations as well as learners, innovations have to be combined with well-proven learning traditions and flexible quality standards. In addition new models for recognition of open learning are needed: education institutions need a better understanding of how open education processes can contribute to excellent learning and high quality education provision, and certification schemes need to incorporate more flexible concepts of open education.

The international EIF / LINQ Conference 2014 addressed innovations and quality in lifelong learning, education and training: potential points of access to this field include new learning methods and design, technology-enhanced learning, quality standards and certification, human resources development, competences and skills, digital resources, learning materials, and online collaboration and communities in particular in the light of the European Commission's Opening up education initiative launched in 2013.

Thus, the book contributes to the current debate on one of the greatest challenges in today's quality development for education and training: How to achieve quality for opening up education?

The presented articles are the result of the Open Calls for Papers, Projects and Workshops issued by the international EIF / LINQ Conference 2014. EIF, an annual event of the European Foundation for Quality in e-Learning, and LINQ, a leading annual European and international Conference on Learning Innovations and Learning Quality, have joined forces in the year 2014 to shape the 2014 Mega Event for Quality and Innovation in education and learning: The EIF / LINQ Conference 2014 that took place in Crete, Greece, from 7th to 9th of May 2014.

The international EIF / LINQ Conference 2014 addressed these issues in particular in the light of the European Commission's Opening up education initiative launched in 2013. Together with colleagues from leading organizations in the field of quality and innovation in education, such as ICDE, OCW-C, Creative Commons, EDEN, EUA, ENQA, Commonwealth of Learning, EURASHE, ESU, the European Commission as well as many innovative projects, conference participants could discuss the implications of openness on quality in e-learning and take steps to strengthen cooperation between stakeholders.

The papers, projects and workshops address in particular following one or more of the following nine topics:

- Quality indicators and methods to describe, measure and evaluate quality for open education, OER and MOOCs
- Conceptual contributions on new and innovative quality models, methodologies, standards and approaches for e-learning and open education
- Experiences and reports from practice with implementation of quality approaches for open education
- Required competences by institutions as well as by learners for designing, practicing and improving open learning with high quality
- Local, national, regional and European quality projects in the field of the conference
- Methodologies for and experience of recognition of open learning in formal education and training
- Certification of e-learning and open education in institutions, programs and courses
- Integrated innovation and quality approaches

- Global aspects of high-quality Open Education (e.g. collaborations, comparative studies, cultural aspects)

The scientific articles and interactive workshop sessions published in this book are the selected submissions of applicants from over 30 countries received upon the Open Call for Papers and the Open Call for Workshops issued by the International Conference EIF / LINQ 2014: They were reviewed by the international scientific Programme Committee of EIF / LINQ 2014 in double-blind peer reviews and selected according the review results. In addition all submissions from projects received upon the Open Call for Projects also issued by EIF / LINQ 2014 and selected by the international Conference Committee of EIF / LINQ 2014 are published in the proceedings, too. All authors of the selected articles and projects descriptions could present and discuss their papers and projects at the EIF/ LINQ 2014 in a speech.

In the introductory article **Christian M. Stracke** (Germany) presents the concept of Open Learning as combination of suitable open learning styles and open learning scenarios and adapted for school education as an example. This article discusses how to achieve the best appropriate learning quality as the core objective in learning, education and training by combining the three dimensions learning history, learning innovations and learning standards.

Karen Kear, Keith Williams, and Jon Rosewell (all from UK) describe the E-xcellence methodology for the quality assurance of e learning. They outline the E-xcellence process, and describe the main supporting resources: a set of 35 benchmarks, a quality manual and the 'Quickscan' self-assessment tool. The collaborative approach described in the paperhelps higher education institutions to review their e learning and to plan for improvement.

Richard Heinen, Ingo Blees, Michael Kerres, Marc Rittberger (all from Germany) present in their paper "Open educational resources and social bookmarking" two cases of reference platforms (Elixier and Edutags) using different ways to aggregate contents. A comparison of the inventories of both systems shows that each system can benefit from the other's metadata.

Alan Bruce (Ireland) invites discussion about the emergence and growth of competence-based education, which represents a radical shift away from traditional time-bound schooling systems based on curriculum rigidity to a new system based on competence and sustainable skills based learning. In his paper, competence frameworks are analysed with reference to standards, quality and teachers' professional formation. Specific reference is made to the learning and insights of the TRANSit project and its research on best practice as well as to the

role of competence is fostering transferable skills, critical reflection and innovative thinking.

Mark Hamilton, Gráinne Conole, and Terese Bird (all from UK) report on the evaluation of the use of iPads in Medicine. The focus of their research was to elicit how first-year Medics were using iPads to support their learning and what their perceptions were of the use of the devices. The authors state that students increasingly liked their iPads as the term progressed and increasingly incorporated them into their practice. This fits the 'Integrated innovation and quality approaches* theme.

Thomas Richter and **Heimo H. Adelsberger** (both from Germany) discuss the conflicts that occurred in a highly experimental course setting, in which they implemented a student-centered course in urban higher education with a constructivist, blended-learning design. The authors analyse to which extent the cultural country profiles from our Learning Culture Survey suffice to prevent intercultural conflicts in education and provide support for the design of respective interventions.

Jon Rosewell (UK) and **Darco Jansen** (the Netherlands) report on the development of the OpenupEd Quality Label, a self-assessment and review quality assurance process for the new OpenupEd MOOC portal (www.openuped.eu). This process is focused on benchmark statements that seek to capture good practice, both at the level of the institution and at the level of individual courses. The benchmark statements are derived from benchmarks which emerged from the E-xcellence e-learning quality projects. Self-assessment and review is intended to encourage quality enhancement, captured in an action plan. A quality label for MOOCs will benefit all MOOC stakeholders, so the authors.

At the 2013 EFQUEL Conference **Sir John Daniel** and **Stamenka Uvalić-Trumbić** (both from Canada) presented a Guide to Quality in Online Learning that has been published with Academic Partnerships, Inc. That Guide focused primarily on formal online courses and programs leading to credit and conventional credentials. However, the steady expansion of online learning in regular programs is also accompanied by the multiplication of alternatives to traditional courses and credentials. The authors call these alternatives 'post-traditional online education'. Sir John Daniel and Stamenka Uvalić-Trumbić are now preparing a second guide on Quality in Post-Traditional Online Higher Education. This guide, described in their paper, provides a roadmap of the issues generated by the concepts of openness and post-traditional online higher

education, suggesting how universities can embrace greater openness without sacrificing their reputation for quality.

Grammatikopoulos, V., Gregoriadis, A., Zachopoulou, E. (all three from Greece), **Liukkonen, J.** (Finland), **Gamelas, A., Leal, T., Pessanha, M., and Barros, S.** (all four from Portugal) present the initial results of their evaluation of early childhood education (ECE) quality in six European countries. They discuss and compare various aspects of the ECE quality in different educational systems. According to the authors, such comparisons can create a fertile ground for communication and collaboration among the educational communities of different European countries and promote open education. Implications and future recommendations are also discussed

Harri Lappalainen and **Pia Suvivuo** (both from Finland) share their experience with Innovation pedagogy, a learning approach which opens up education for stakeholders outside of the academia. Two selected Educational Research, Development and Innovation Methods (ERDIM) used in their university (Turku University of Applied Sciences, Finland) are presented and described in detail.

Marinos Kavouras, Sofoklis Sotiriou, Alkyoni Baglatzi, Nancy Darra, Margarita Kokla, Aggelos Lazoudis, Katerina Pastra and **Eleni Tomai** (all from Greece) are researching the topic of Geospatial thinking, a newly acknowledged ability with profound and rewarding effects on numerous aspects of everyday life and science - from giving and following directions and interpreting maps and diagrams, to achieving innovation in STEM disciplines. The GEOTHNK approach aims at enhancing geospatial thinking skills and engaging users in meaningful, inquiry-based learning experiences. The main outcomes and perspectives of the GEOTHNK approach for learners are also described in the paper.

Ebba Ossiannilsson (Sweden) focuses in her paper on the four addressed tracks presented during the second eMOOCs 2014 European Stakeholder Summit: namely, the experimental, policy, research, and business tracks. The official Communicators from the eMOOCs Summit are addressed in the paper.

Dimitra Pappa (Greece) demonstrates the use of Open Educational Resources (OER) from the corporate point of view, discussing existing barriers and requirements for the adoption and effective integration of OER in the organisational setting.

Aleksandra Mudrinić Ribić and **Maja Quien** (both from Croatia) present and discuss two main approaches in implementing ICT in the national school curriculum. Bottom-up approach focuses on activities for schools and teachers,

while the top-down includes a formal, structural change; therefore, it focuses on the responsible ministry and other state bodies. Combining these approaches and their specific activities that focus on awareness, education, implementation, promotion and support, can significantly contribute to the implementation of ICT in the national school curriculum in Croatia.

David Smith (Australia) presents a pilot study on the development of one education degree within a large regional university in Australia using a mobile application to facilitate the understanding of technology use and mentoring for lecturers in developing subjects for online delivery. In this paper, the author describes the structure of the mobile app, provides a short description of the underpinning learning theory and the mentoring given to the lecturers on the use of the mobile app suggesting a model for the design of online subjects in higher education.

Antonella Poce and **Annalisa Iovine** (both from Italy) present in their paper results and experiences, in the framework of larger research project entitled Adaptive message-Learning project (funded by the Italian Ministry for Research and Education in 2009 and is still ongoing). The authors introduce the model to make a critical use of technology and, employing consolidated teaching and learning structures, put cultural insights democratically at everyone's disposal, which are essential to educate "a free citizen in a free republic".

Edmundo Tovar Caro and **Ana Dimovska** (Spain) introduce guidelines and recommendations for successful implementation of Open Course Ware that institutions could use when adopting and/or creating a virtual mobility programme. In this paper the results of a European education project (LLP Programme, "Open Course Ware in an European Union higher education context: How to make use of its full potential for virtual mobility (later VM)?") are presented, in particular focusing on a proposal of a quality model with guidelines and recommendations for the implementation of Open Course Ware in Higher Education Institutions.

J. A. D. Janaka Jayalath (Sri Lanka) shares his experience and ideas about development of quality standard for eLearning courses in Tertiary and Vocational Education Commission sector (TVET) in Sri Lanka. The author states, that lack of quality assurance of eLearning programmes has created issues in recognition of online courses in Sri Lanka. Delivery of TVET courses through distance learning, eLearning and blended learning have now become popular in Sri Lanka. A wide use of these methods makes it possible to ensure equal possibilities of receiving an education and of a continuous further training for all people regardless of their place of residence, social and economic status.

The paper of **Fabio Nascimbeni** (Belgium), **Rory McGreal** (Canada) and **Grainne C. Conole** (UK) presents the work of the eMundus project that began in October 2013 and reports on the project activities to the present date. The aim of eMundus is to strengthen cooperation among HE institutions from the involved regions and globally, by exploring the potential of Open Approaches (e.g. OER, MOOCs and Virtual Mobility amongst others) to support long term, balanced, inter-cultural academic partnerships for improving learning and teaching through Open Education approaches.

Finally 28 European projects are briefly presented in this book. All 28 projects were selected upon receipt contributions following an Open Call for European Projects that was issued in cooperation with the European Commission and its European Agency EACEA responsible for the management of European projects from the Lifelong Learning Programme. The projects were selected and approved by the international Programme Committee of LINQ/EIF 2014.

Every project description starts with the logo, name and acronym of the project. Then, the information about aims, objectives and main target groups of the project are given. Furthermore, the project description provides an answer on the question how every project contributes to learning innovations and learning quality. After that, the projects' main outcomes are presented. All project representatives have been asked to give a short quote on the question what is most important for learning innovations and quality today and could present their project at the LINQ conference in a short speech. For more information about every project can be find online - links to project websites and a main contact are provided on the bottom of every project page.

To summarize:

This book contributes to the current debate on learning innovations and quality in lifelong learning, education and training. LINQ 2014 and the 9th EIF continued the exploration of the relation between learning innovations and learning quality address one of the greatest challenges in today's quality development for education and training: how to achieve quality for opening up education?

For the best learning innovations and learning quality for opening up education!

Alastair Creelman and Tatiana Shamarina-Heidenreich

The Concept of Open Learning for Opening Up Education

Christian M. Stracke

eLC / University of Duisburg-Essen
45141 Essen, Germany
Elected ISO-Convener ISO/IEC JTC1 SC36/WG5 (www.sc36.org)
Elected Chair CEN TC 353 (www.cen.eu/isss/TC_353)
Christian.Stracke@uni-due.de

Abstract: The Open Learning Concept is presented as combination of suitable open learning styles and open learning scenarios and adapted for school education as an example. Open Learning aims at the right balance between learning innovation and quality for modernizing learning, education and training. Learning innovation and learning quality are very often addressed separately and solely. But in fact they are interdependent and have to be reflected both for achieving the best learning quality: This article discusses how to achieve the best appropriate learning quality as the core objective in learning, education and training by combining the three dimensions learning history, learning innovations and learning standards. Only their mix can ensure to meet the learners' needs and to provide the best and appropriate learning opportunities and learning quality: The presented Open Learning Concept aims at modernizing and opening up education for fitting to the given situation and for a long-term and sustainable improvement across all sectors in learning, education and training, all communities, educational and training systems and societies in Europe and worldwide.

Keywords: Open Learning, quality, innovations, learning history, quality development, school education, lifelong learning, digital age

1 Introduction

In this article, the concept of Open Learning will be introduced: Open Learning is the theoretical and generic framework and long-term vision for the modernization of Learning, Education and Training (LET) and for the required changes in all educational sectors, from kindergarten to lifelong learning. Open Learning combines learning innovations and learning quality to achieve a balanced and appropriate solution adapted to the given learning objectives, needs and situations.

The Open Learning Concept answers the question how to improve the quality in learning, education and training on the background of the given digital age and revolution and how to integrate learning innovation for modernizing education.

2 The Digital Age: Challenges and first answers

Learning innovations and learning quality are important and reflected topics for a very long time from the beginning of discussions and theories about learning processes: In Europe, Plato's Allegory of the Cave is one of the earliest examples. Their debate continued during the introduction of the first universities in the Middle Age and of the school systems in the 18th century. During the last years and the upcoming so called "digital age", many discussions took place (also in the fields of school and higher education, learning for work and at workplaces as well as non-formal and informal learning) due to the two main changes covering all sectors, branches and levels of the society: first, globalisation and second, establishment of the worldwide internet.

These two factors are leading to global markets, worldwide networking, communication and competition, as well as to the digitalisation of services and systems with the introduction of internet-based services, hardware and software within all parts of our lifes. They were and are still changing all societies and in particular the learning, education and training in schools, universities, at work and online.

The European Union has identified the challenges and opportunities by these global changes and published several communications and framework for the future European society and its learning, education and training: Based on the Lisbon Declaration, the former vision of the Information Society called i2020 and the established Bologna Process (European Commission 2005), the European Commission and Council have have reviewed and analysed the impact of the globalisation, the internet and the information technologies in general leading to current new communications and policies: The Digital Age for Europe, EUROPE 2020 and Education and Training 2020 are reflecting these movements with speial emphasis on the potentials for the European citizens and communities (European Commission 2010a and 2010b, European Council 2009). Most recently the European Commission launched the communication on Opening Up Education for supporting the introduction and use of Technology-Enhanced Learning (TEL) and Open Educational Resources (OER) as well as the Grand Coalition initiative for competences and skills development through lifelong learning related to the world of work and all citizens in the European societies.

3 Learning innovations vs. learning quality

In the international discussions about the future learning, education and training from theory, research and politics but also from press, individuals and social communities, the main focus is currently on the technological innovations and their opportunities. Theories and experts are claiming brand new and extraordinary chances, sometimes promising new learning eras and paradigmas: E. g., the theories of connectivism by Siemens (2005) or of Social Learning by Hart (2011). Even the arrival of fundamental new ways of learning are promised under the label of learning 2.0 / 3.0 in analogy to the terms web 2.0 / 3.0 (Downes 2005, Karrer 2007, and for an overview Redecker 2009). Finally new concepts and descriptions of our world as a 'flat world' are leading to predictions that 'to learn how to learn' will become the most important asset for all workers due to all the changes and faster innovation (Friedman 2006): It is claimed to be a new movement and progress however it is clear and evident in pedagogy since several hundreds of years (if not longer) that 'to learn how to learn' is most important for learning processes and progress and for the development of personality and competences (Dewey 1966, Piaget 1953, Rousseau 1968, Vygotsky 1988).

From this perspective, it seems that learning innovations are the only path and road map for a better future education and training: The underlying (and often hidden) argument is that through them we are earning many new chances to learn, without them we are not fitting to the changing times of globalisation and worlwide internet as well as to the new digital generation, the so labelled "digital natives" (Prensky 2001, cf. for a general criticism of this term Schulmeister 2008). We call this discussion the (learning) innovation strand.

On the other hand, there is a long-term discussion with huge tradition (since the beginning of our culture) about the learning quality (cf. for an overview Stracke 2006a). We call this debate the (learning) history strand even if some of the topics like quality management for education and training are less than 100 years old.

Surprisingly, both discussion strands, the new innovation and the old history, are not interconnected and not reflecting each other. It seems that the supporters of learning innovations do not want to refer to theories of the past and that the authors of learning history do not want to recognise global changes vice versa. That leads us to an important question that requires urgently attention and an answer in our changing times: What is the relation between learning innovations and learning quality?

4 Learning innovations as contribution to learning quality

Our answer is based on three hypotheses of the current learning situation (for their detailed discussion and arguments cf. Stracke 2013):

1. Learning history should not and cannot be ignored.
2. Learning innovations are mainly technology-driven.
3. Learning is not completely changing.

First of all, it has to be stated clearly that the worldwide changes by globalisation and internet for all through world wide web and social media and communities do not justify to withdraw or ignore all theories from the past. Modern innovation theories ignoring this treasure of expertise from the history are losing a well-proven underground for basing their argumentation (even if contradictory) that is providing a huge variety of different concepts (e.g. cf. for extremes the theories of cognitive development by Piaget (1953) and the systems theories by Luhmann (1995 and 1998) and Maturana/Varela (1992)).

Second, the currently claimed learning innovations based on the effects of new internet opportunities, services and social media are only dealing with technological changes and chances: Of course we can realize diverse learning scenarios and (digital) communities, services and systems today that were not available several years ago like MOOCs, social communities, blogging (Redecker 2009, Hart 2011, Daniel 2012). But technological inventions and changes are offering only new options and pre-conditions. They still require an appropriate learning design and setting with an attractive and motivating learning environment: For those (and other) reasons we call toegther with Daniel (2012) MOOCs as the 'educational buzzword of 2012'. Therefore we direct our focus on the learning quality beyond MOOCs: Learning quality was, is and will be the key for learning success and outcomes (Stracke 2012).

Finally learning is not completely different and changing only due to the globalisation, new technologies and network opportunities. The new technologies and global changes are providing challenges and chances to establish new ways to base, present and integrate learning processes within education and training and learning groups including new options for self-regulated learning. But these new modes and types of access and interactions in learning processes do not change completely the way how people learn. The style how to use, consume and reflect learning opportunities and materials may change through increasing speed and multi-tasking and lower attention but that is only increasing the requirements for learning designers, educators and teachers.

5 Learning quality for successful learning

What is most important for the success of learning processes is the learning quality. Learning opportunities have to meet the need of the learners and to provide the appropriate quality to fulfill their requirements. That can sometimes mean a simple learning course with teacher-centered education and sometimes a complex sophisticated learning environment with learner-oriented group work enriched facilitated by an educator as moderator, tutor or enabler and with new learning technologies and innovations including social media and communities. That means that learning quality cannot pre-defined but have to be adapted to the given situation and learners. In this sense, learning history and learning innovations are two different approaches and points of view that are interdependent and cannot be reflected solely but have to be analysed in conjunction for achieving the best and appropriate learning opportuniy and success. Next to them, standards are building the third source for planning and designing the best learning opportunity and quality (Stracke 2013). This overall objective for the continous improvement of learning quality can be called quality development: Quality development has to combine the relevant and appropriate approaches, concepts and elements from all three dimensions that are basing the learning quality: History (by learning theories and traditions), innovation (by new learning options) and standards (by consensus building on learning).

There could be three alternatives and options in theory: To focus only on the learning innovations only (1.), to focus only on the history of learning traditions and theory (2.) or to arrange the mix between both approaches (3.). As already explained above, it is not possible to argue that the only focus on learning innovations can succeed by jumping out of nothing as it cannot be argued and proven how such a jump can take place by ignoring the learning experiences and theories. On the other hand, future learning opportunities have to reflect the changes in society and chances by innovations and would also fail by ignoring them. Therefore only the mix of learning innovations and history based on learning experiences and theories from the past is promising and convincing as. Thus, we can say: Quality development is the crucial task for learning, education and training.

The question is now: How can quality development be addressed and improved in learning, education and training in our times of the digital age? The concept of Open Learning tries to provide a theoretical framework for the improvement of the learning quality through the integration of learning innovations leading to opening up the education.

6 The Open Learning Concept

Open Learning tries to provide an answer on the given challenges of globalization for the modernization of learning, education and training. Open Learning combines the two major dimensions to meet the current requirements and the right balance between learning innovations and tradition achieving high quality in learning:

1. Suitable and **open learning styles** and designs
2. Suitable and **open learning scenarios** and environment

Open Learning introduces the open movement into all educational sectors: Under the umbrella of the term "Open Education" many different approaches are currently summarized. The use of Open Educational Resources (OER) and the design of Open Educational Practices (OEP) are often promoted for all educational sectors based on the definition by UNESCO (2002). As a theoretical and generic framework and long-term vision for the modernization of Learning, Education and Training (LET) and for the required changes in all educational sectors, from kindergarten to lifelong learning, Open Learning has alsways to be adapted to the specific situation, target group, learning objectives and needs.

Technology-enhanced learning can play a key role in the future improvement of learning quality in education and training, enterprises, human resources and socities: Not only formal, but also non-formal and informal learning can be facilitated by technology-enhanced learning, e. g., through social learning for working smarter and social workplaces (Hart 2011 and Cross 2010, for general criticism cf. Davenport 2005). In addition the support and tracking options offered by the used technologies can provide substantial basis for data collections, measurements and evaluations of all learning and working activities to assess changes in the performance and assigned competences.

In the following we will provide a first adaptation for the school education.

Open Learning for the school education

Open Learning can be adapted as **Open School Learning** for the school sector as the combination of:

1. Open Education (innovative education with technologies)
2. Creative Classrooms (collaboration with moderation)

Open School Learning introduces the concept of Open Education within schools by improving the variety of learning styles, amongst others through the use of e-Learning and Open Educational Resources. Open School Learning establishes the vision of Creative Classrooms where teachers are continuously changing their roles according to the scenarios and students are cooperating, amongst others through developing a network of communities across Europe.

Currently, one major project funded by the European Commission is focusing such a broad and sustainable introduction of Open School Learning and technology-enhanced and competence-based learning within school education across whole Europe:

Open Discovery Space (ODS) with its focus on the school sector and teachers as main target group addresses more than 2,000 schools and offering training for over 10,000 teachers in all 27 EU member states: ODS introduces innovative learning designs and scenarios into K-12 schools through the support by technology enhanced learning and social communities.[1]

Open Discovery Space (ODS) focuses on the required modernisation of school education, based on the combination of Open Education and Creative Classrooms through the concept of Open School Learning. Open School Learning introduces and uses innovative scenarios, open educational practices and resources and can be realized through de-centralized and technology-enhanced communities. ODS cooperates since 2012 in a first of its kind effort with all school stakeholders to create a pan-European e-learning environment to promote more flexible and creative ways of learning. The project follows a unique approach to learning at school: supporting the development of self-esteem, an increased "sense of belonging", and an improved perception of one's own capacity to solve problems. In this approach, ODS addresses teachers as main target group and develops regional hubs, instruments and online services, which facilitate and improve Open School Learning and contribute to the "construction of the surrounding community" (Stracke et al. 2013).

The ODS project focuses the establishment of de-centralized regional communities through the introduction of technology-enhanced learning within the national European school systems including the provision of a portal for Open Educational Resources and the development of learning scenarios and services for the long-term improvement of school education by innovative pedagogical planning and learning. The Inspiring Science Education (ISE) project will benefit

[1] For further information on ODS cf. online at: http://www.opendiscoveryspace.eu.

from these developments and transfer all achieved results in the fields of science education for further support and innovations for and by teachers. [2]

7 Summary

Learning innovation and learning quality are very often addressed separately and solely. But in fact they are interdependent and have to be reflected both for achieving the best learning quality: The best appropriate learning quality remains the core objective in learning, education and training and can be achieved by combining the three dimensions learning history, learning innovations and learning standards. Learning innovations can increase the learning quality but require a basis provided by the learning experiences and theories from the past. On the other hand learning traditions have to be enriched by innovations, in particular facing the current worldwide challenges of globalisation and worlwide internet establishment. Together with the third dimension, the learning standards, learning history and learning innovations are building the basis and potential inputs for planning and design learning opportunities. A suitable mix of history from learning experiences and theories and current innovations combined with international consensus on learning standards is required.

The Open Learning concept was introduced to fulfill these challenges and requirements: It has been roughly adapted to the school education as Open School Learning. In general Open Learning can ensure to meet the learners' needs and to provide the best and appropriate learning opportunities and learning quality fitting to the given situation and for a long-term and sustainable improvement. In the future it has to be demonstrated that Open Learning can also be adapted across all sectors in learning, education and training, all communities, educational and training systems and societies in Europe and worldwide.

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Excellence in e-learning: a quality enhancement approach

Karen Kear, Keith Williams, Jon Rosewell

The Open University, UK
karen.kear@open.ac.uk, keith.williams@open.ac.uk, jon.rosewell@open.ac.uk

Abstract: This paper describes the E-xcellence methodology for the quality assurance of e-learning. It outlines the E-xcellence process, and describes the main supporting resources: a set of 35 benchmarks, a quality manual and the 'Quickscan' self-assessment tool. The manual expands on the 35 benchmark statements, offering performance indicators and supporting discussion. The Quickscan is available online and is intended for use as an initial self-assessment. A key part of the E-xcellence approach is the 'local seminar'. This is a collaborative workshop where an interdisciplinary team of staff from a higher education institution discuss the quality of their e-learning with visiting expert assessors. The paper describes the processes involved in the local seminars and discusses their value to participants. We conclude that the E-xcellence methodology, and in particular the local seminars, provide valuable opportunities for reflection and discussion among staff with different roles, supported by visiting experts. This collaborative approach helps higher education institutions to review their e-learning and to plan for improvement.

Keywords: quality assurance, e-learning, benchmarks, self-assessment, collaboration

1 Introduction

E-learning is now taking its place as part of mainstream higher education, both in the distance learning sector and in conventional universities. E-learning can support learners who are in employment and need access to part-time study at a distance; it can also be a valuable supplement to learners at conventional educational institutions. As an increasing part of mainstream provision, e-learning must be subject to quality assurance procedures. It is important that the teaching and assessment in e-learning courses are of a high standard, and that students are challenged, engaged and supported. Only if these requirements are met will e-learning continue to gain acceptance.

The challenge now is to establish quality assurance processes that are suitable for e-learning contexts (Ehlers & Hilera, 2012). Although there are well-established quality procedures for higher education generally, these were designed for conventional universities and do not necessarily fit well with e-learning. There is therefore a need for resources and processes specifically designed to support quality assurance for e-learning.

This paper presents an approach described as the *E-xcellence* methodology. The approach was developed in a series of projects funded by the European Commission's Lifelong Learning Programme between 2005 and 2012, culminating in the most recent project *E-xcellence Next*. The E-xcellence approach is based on the use of benchmarks and collaborative quality assurance workshops, supported by a comprehensive set of resources and procedures. The paper describes the methodology, the project resources and the quality assurance workshops, which were carried out at a number of European higher education institutions. The paper concludes with a brief discussion of the value of the E-xcellence approach, based on feedback from participants.

2 The quality assurance spectrum

What constitutes quality assurance in higher education still varies widely across Europe and internationally. The European Association for Quality Assurance in Higher Education (ENQA) aims to achieve integration across the European Union, but it faces a long journey with many starting points. Points of difference include: whether the function of a quality assurance system is to check compliance with standards or to promote quality enhancement; the extent to which external oversight is required; and the applicability to e-learning compared to face-to-face contexts (Inglis, 2005; Jara & Mellar, 2007; Parker, 2008). Mature quality assurance systems allow institutions signicant autonomy in determining their goals (and how to achieve them) within a broad framework of national standards. By contrast, quality assurance systems emerging from tightly defined regulatory regimes may have specifications relating to (for example) lecture rooms and laboratory facilities. These specifications will have little relevance for e-learning.

Thus there is a range of starting points for the implementation of quality assurance systems for e-learning. Institutions operating in mature, enhancement-focused regimes have the flexibility to demonstrate performance against criteria which are relevant to mission and context (Ossiannilsson & Landgren, 2012).

However, other institutions may face a greater challenge, and be constrained by inappropriate norm-based criteria.

These challenges are evident globally. For example, perspectives on Asian approaches are presented in Jung, Wong & Belawati (2013); Britto *et al*. (2014) give perspectives from three institutions in the USA. These case studies illustrate the options available to institutions operating innovative systems: to focus on development of appropriate internal systems, and to influence national systems as they develop. All the case studies indicate that buy-in from staff is essential to quality assurance, irrespective of the source or nature of the criteria.

The E-xcellence approach to quality assurance is grounded in the belief that institutions are well placed to assess the quality of their own e-learning and to identify what is relevant to their own context. The benchmarks and other resources are designed to support institutions in this endeavour, and to encourage a collegiate and collaborative approach to quality assurance.

3 The E-xcellence suite of projects

The E-xcellence suite consisted of three linked projects, managed by the EADTU (European Association of Distance Teaching Universities). The E-xcellence projects involved a core pool of experts from six European bodies with a stake in e-learning developments, and an extended group drawn from a total of 50 institutions during the course of the projects. The core E-xcellence partners were: EADTU; Open Universiteit Nederland; The Open University (UK); Oulu University (Finland); Universidad Nacional de Educación a Distancia (Spain); and the PROSE network (Belgium).

The first project, simply called *E-xcellence,* took place in 2005-06. In this project a set of benchmarks and performance criteria were developed, together with comprehensive supporting resources. These were implemented in the form of:

- a quality manual for e-learning
- an online self-assessment tool called Quickscan
- an assessors' handbook.

The next project, *E-xcellence Plus,* took place in 2008-09. In this project the E-xcellence methodology was disseminated to institutions and to Quality

Assessment agencies in ten European countries (Belgium, Czech Republic, Estonia, Hungary, Italy, The Netherlands, Russia, Slovakia, Sweden, Switzerland).

The third project, *E-xcellence Next,* was carried out in 2011-12. A key part of this project was an update of the E-xcellence resources. This update, as well as clarifying language and terminology, dealt with increasing awareness of: blended learning; social networking in education; Open Educational Resources (Kear *et al*., 2012).

The E-xcellence Next project also continued the use and dissemination of the methodology. This was achieved primarily through a series of 'local seminars': quality workshops which each focused on assessment of e-learning at a different higher education institution. The following sections of the paper discuss the E-xcellence resources and the format and outcomes of the local seminars.

4 E-xcellence resources

The E-xcellence resources are freely available for use by higher education institutions (see e-xcellencelabel.eadtu.eu). The primary resource is the E-xcellence manual (Williams *et al*., 2012) which was updated to a second edition as part of the E-xcellence Next project. The manual uses a six-item framework for focusing attention on quality in key areas of e-learning (see Table 1). It includes a set of 35 benchmarks, grouped into the six areas of the framework. It also includes a considerable amount of supporting text, together with sets of performance criteria.

Table 1. The E-xcellence framework

1. Strategic Management	A high level view of how the institution plans its e-learning
2. Curriculum Design	How e-learning is used across a whole programme of study
3. Course Design	How e-learning is used in the design of of individual courses
4. Course Delivery	The technical and practical aspects of e-learning delivery
5. Staff Support	The support and training provided to staff
6. Student Support	The support, information and guidance provided to students

An example benchmark, from the Course Design section, is:

'E-learning materials have sufficient interactivity (student-to-content or student-to-student) to encourage active engagement and enable students to test their knowledge, understanding and skills.'

A further valuable resource is the Quickscan tool. This can be used as a starting point for a self-assessment of an institution's e-learning quality. The Quickscan contains the 35 E-xcellence benchmarks, grouped according to the framework in Table 1. For each benchmark, a self-assessment is invited on a rating scale. Participants are invited to provide comments explaining their self-assessment for each benchmark and giving any further information.

The Quickscan is available as an online tool with scoring buttons or as a PDF. Feedback is provided for any benchmarks where a relatively low self-assessment is entered. This feedback provides advice on aspects of e-learning relevant to that benchmark. It is strongly recommended that the Quickscan self-assessment is carried out as a collaborative process by a group of staff from different areas (e.g. educators, technical staff, managers) so that a range of views can be shared, and issues discussed. One possibility is to distribute the Quickscan template to a group of participants to complete individually, and then to hold a workshop where the self-assessments are discussed.

Carrying out a Quickscan self-evaluation is the first step towards a fuller E-xcellence Next quality assessment. The main focus of such an assessment is a 2-day on-site event, described as a 'local seminar'. This involves discussions and review by two expert assessors from the E-xcellence team. The E-xcellence assessors are supported by an additional project resource: the assessors' handbook. This is structured using the same framework as the manual, but contains more in-depth material. It offers advice to assessors on the characteristics of high quality e-learning that they should be looking for.

5 E-xcellence Next local seminars

During the E-xcellence Next project a series of seven local seminars were held with project partner institutions in Russia, Lithuania, Poland, Cyprus, Latvia, Portugal and Greece. These seminars had several purposes:

- to engage the HE institution in constructive discussions about the quality of their e-learning, and how it might be improved
- to explore with the quality assurance agency how to embed e-learning into their frameworks
- to collect feedback on the E-xcellence resources, in order to improve them.

As preparation for the two-day local seminar, a team of stakeholders – typically managers, teachers, course designers, technical staff and students – is formed at the institution. The team meets to decide which programmes are to be assessed, and which of the E-xcellence benchmarks are to be used. They then collaborate to complete the Quickscan self-assessment. There follows correspondence with the two E-xcellence assessors, to provide details of the programmes and to share the results of the Quickscan self-assessment and supporting evidence, most being accessible online.

On the first day, the institution's team meet with the E-xcellence assessors. Institutional presentations consolidate the assessors' overview of the e-learning provision, prior to presentation of the results of the Quickscan. Discussions then follow, interrogating aspects of the Quickscan profile and supporting evidence, in order to identify any particular issues and to highlight areas of best practice. Towards the end of the day, the assessors present their perspectives, conclusions and advice.

The second day is a meeting with senior staff from the national quality assurance agency, to discuss how the agency's quality assurance processes may apply to e-learning. Experience to date suggests that integration of e-learning into national quality assurance processes is at a very early stage. These discussions are therefore important for highlighting this issue and encouraging future progress.

After the local seminar, the E-xcellence assessors produced a report giving their conclusions, together with advice for improvements and aspects for future consideration. The team at the higher education institution then create a roadmap for improvement, which is sent to the assessors for comment. The assessors' feedback on the roadmap is the culmination of the E-xcellence process. By undertaking the full process of review, the institution has the option to gain the Associates in E-xcellence label (see e-xcellencelabel.eadtu.eu).

6 Discussion and conclusions

Staff from the institutions that were reviewed have provided feedback on the processes and resources involved in the E-xcellence process. Participants commented that the E-xcellence framework (Table 1) helps to ensure that all aspects of e-learning are covered. They particularly appreciated the Quickscan tool as a means of structuring discussions about the quality of e-learning. The team-based approach was seen as a key aspect, because it enabled participants

to exchange perspectives with those in other departments of the institution. The external perspectives provided by the E-xcellence assessors were seen as valuable, because new ideas were brought in from outside the institution. This led to fruitful discussions and was helpful for thinking about the design of future courses, and becoming aware of different choices and implementations. The E-xcellence approach, and specifically the local seminars, enabled a valued 'moment of reflection' on quality. It gave staff the time to discuss with colleagues the strengths and weaknesses of their e-learning offerings. It also supported decision-making, formulation of policy for e-learning and constructive plans for the future.

Moscow State University of Economics, Statistics and Informatics has adopted the E-xcellence structure and benchmarks into their plan for institutional change (Williams & Rosewell, 2013). Dalarna University, Sweden, used E-xcellence Next for their nursing programme, commenting that 'Benchmarking can function as a tool to initiate a process of heightened awareness and ongoing quality work. The quality of eLearning in the nursing programme increased as a result of this quality assessment' (Elf *et al.*, 2013). The Estonian system for quality assurance in e-learning described by Plank *et al.* (2013) was supported by material derived from the E-xcellence manual.

Experience from the E-xcellence Next project suggests that its collaborative approach to quality assurance is effective and helpful. The examples above show that it has also been influential beyond its immediate project context.

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Open educational resources and social bookmarking: Connecting Users and Editors

Richard Heinen[1], Ingo Blees[2], Michael Kerres[1], Marc Rittberger[2]

[1]Duisburg Learning Lab, Universität Duisburg-Essen, Germany
[firstname.lastname]@uni-duisburg-essen.de
[2]Deutsches Institut für Internationale Pädagogische Forschung, Germany
[lastname]@dipf.de

Abstract: Referatories or reference platform can be filled in three ways: By editorial staff, by automatic aggregation or with user generated content. The article presents two cases of reference platforms (Elixier and Edutags) using different ways to aggregate the contents. A comparison of the inventories of both systems makes visible that each system can benefit from the other's metadata. For the example of OER (open educational ressources) it can be shown how automatic aggretation can support manual tagging. As a conclusion a joint system is suggested that combines different aspects of both platforms.

Keywords: metadata**,** social tagging, open educational resources, user generated content, editorial documentation

1 Introduction

In the cooperation project "Edutags" (www.edutags.de) , the Learning Lab of the University Duisburg-Essen an the German Institute for International Educational Research (DIPF) are developing a reference platform for educational resources (Heinen & Blees, 2011). Elixier (www.bildungsserver.de/elixier) is a project carried out by DIPF together with a consortium of German education servers hosted by federal states (Bundesländer).

In certain respect, both projects pursue the same aim: educational resources are selected, evaluated and shared, and the collections are provided to teachers. But there are some significant differences. While Edutags is a social bookmarking service (SBS) offering teachers the possibility to collect and share resources in a user-generated collaborative process (Aigrain, 2012). Elixier is run by editorial staff. Therefore, people with different professional qualifications and intentions are responsible for the aggregation of resources and their description via keywords, abstracts and tags in Edutags and Elixier.

The first question that arises is: can both services (and consequently teachers) benefit from exchanging metadata between both systems? Furthermore: what metadata can be exchanged and how should the metadata be presented to preserve the specific foci of the two services?

Open educational resources (OER) can be found in both collections. Commonly, a resource is referred to as OER if it is published under a free licence that allows free reuse, remixture and republishing of the material. (Atkins et al., 2007) The Creative Commons licence model (CC) is a model that has frequently been used in recent years, it allows a differentiated declaration of rights for the user (Creative Commons, 2009). At present, the declaration of OER licences in Elixier is fairly scarce. In Edutags, the visibility of OER is far better but still only little more than ten percent of all resources are furnished with a free CC license. Edutags does not solely depend on the users' tagging to identify OER. A crawler can utilize machine-readable licenses (Hagmüller et al., 2013) and indicate this. The Paris declaration asks for services that facilitate "finding, retrieving and sharing of OER" (UNESCO, 2012). This leads to our second question: Can both systems support the awareness for OER by exchanging metadata?

2 Social Tagging

Tagging means that users annotate digital objects with freely chosen keywords (Golder & Huberman, 2006). In many applications tags are used to describe single objects in a platform. In SBS, the objects are links that refer to other websites or documents. A user describes an object by freely chosen tags. In contrast to a hierarchically structured taxonomy, users do not have to classify the object by a given set of terms. As a result a user produces a tag cloud that can be regarded as a representation of a user concept of the subject (Yew et al., 2006).

The social aspect implies that different users start to share their tags and objects. In common SBS, the community of people who share tags and links, i.e. their knowledge, is an informal open community. People can set up open or closed groups and they can build networks. When using a SBS, users can in a first step browse the collection of resources by using the tags used by others. While exploring the tag clouds, they can pick up new tags they regard as helpful. Again the idea of the tag cloud and the meaning of the size of a word (tag) become important because the size indicates the relevance of the tag for the subject area (Sinclair & Cardew Hall, 2008). Using the tag cloud users may rethink and expand their own concept of this area. A SBS therefore is not only a tool that gives users access to even more resources. It also can help build and extend knowledge by

using tags. Users can use tags in two ways: they can describe objects to elaborate their concept of the topic or they use other people's tags to broaden their knowledge (Held et al., 2012). A SBS therefore has to be seen as a learning tool (Bateman et al., 2007; Yew et. al., 2006).

Edutags is a SBS especially for educational purposes. Users can bookmark resources and online documents and describe them with individual tags. They can browse through all resources by using the tags, and they can collaborate in this activity. At present Edutags has more than 2.500 regular users who have collected over 19.000 resources – more than 2.700 are licenced under CC.

3 Documentation by Editorial Staff: the Case of Elixier

Another approach can be found in the collection of materials that are aggregated by editorial staff. In comparison to an open folksonomy, trained members of staff follow a given taxonomy to describe resources. A variety of standards have been created, for example LOM, Dublin Core and LMRI. As these standards are fairly complex, it is not easy to produce appropriate metadata. Still, if one doesn't mind the expense, a collection of very detailed metadata emerges that enables users to create any search query. Information is exchanged in a top-down manner: authors of the metadata are gatekeepers to accessing the described material. Users can only read the information. Elixier is an example of this editorial approach. Since 2007, the educational servers of the German federal states and the national German Eduserver have worked on the specification and implementation of this collection. The cooperation's objective is the mutual provision and usage of shared resources in the respective local contexts. A public documentation of the Elixier data model can be found under http://bildungsserver.de/elixier/elixier.pdf. The metadata attributes are grouped into 10 headings. 30 optional attributes are in usage and there are 14 mandatory. For the purpose of monitoring the quantity and quality of the frequently updated delivery of resources, a chart with suitable indicators is generated at the time of each update. Beyond a quantitative increase, the enhancement of the resource pool's metadata quality is of particular interest. From a user's perspective notably relevant metadata like classification, description, learning levels or media type gain a significantly higher quantifier than the other attributes. In this context, an enhancement of the indicators shows an improvement of editorial efforts.

4 Educational Resources

As described above, both systems are developed to give teachers access to educational resources. But we have to ask what educational resources actually are. Generally speaking, every webpage, every element can be a learning object. In fact, it is only the use of an object in a teaching and learning context that makes it an educational resource (Kerres, 2013). Of course: materials especially produced for learning are educational resources. Still, these materials do not represent all possible educational resources. Regarding referatories that are maintained by editorial staff, the problem emerges that they can only collect explicitly declared educational resources. It is to be asked, whether only descriptions of editorial staff are helpful for teachers (Biffi, 2002; Richter, 2013). Therefore, usage of material by teachers is a necessary criterion for classification. A teacher will be required to describe material properly as an educational resource (Heinen & Kerres, 2014).

5 Comparison of Edutags and Elixier

5.1 Description of Resources

A first comparison of Edutags and Elixier focuses on the entire body of resource inventories. Edutags currently contains (all figures as of 14/01/2014) 19.022 resources, Elixier indexes 50.740 resources. The Intersecting set is only 378 resources. This means that teachers describe different resources than editorial staff. While this does not inform about the use or quality of resources stored in Elixier, a clear indication is given that in preparing and giving lessons, teachers use resources that are not considered by editors working on Elixier. The following overview illustrates the distribution of complementary stocks available.

	Edutags	Elixier
Mathematics	311	2683
Physics	163	1813
Chemistry	230	2080
Biology	350	3974
German	239	6403
Geography	53	680
History	105	3438

Tab 1: Complementary stocks in Edutags and Elixier

First of all, it is clear that categorisation by subject is less relevant for teachers' tagging a resource. Even though Elixier contains "only" 2.5 as many resources as Edutags, categorization by subject differs tenfold. In a second step, it would be interesting to investigate the resources that can be found in both systems. Categorisation by teaching subject is first of all relevant for teachers. Therefore, tags in Edutags are analysed to find out whether they correspond to a subject categorisation of resources in the intersecting set and if possible, whether the categorisation is identical. The analysis reveals that of the 378 intersecting resources, 153 bear a tag that can be allocated to any of the subject categories in Elixier. A combination of keywords would therefore improve the quality of descriptions in Edutags. In the case of 134 resources, allocation to a subject is identical in Edutags and Elixier. Regarding the other 19 resources, teachers have categorised materials in a way that indicates the resources seem relevant for other subjects, too. In these cases, the sets of metadata are complementary and the teachers tagging indicates, that the actual use in a classroom might differ from the publisher's or editors' intentions.

intersecting resources	**378**
no subject assignment	225
identical subject	134
different subject	19

tags in intersection	**2220**
Elixier only	1332
Edutags only	219
both systems	669

Tab 2. – Subject tags and comparison of tags in intersecting set

Below, we present an in-depth comparison of tags and indexing: In total, resources in the intersecting set show 888 different tags in Edutags. In Elixier, they are described by 2001 keywords. 669 terms can be found in both systems. The number of correspondences can serve as an indicator of quality regarding the descriptive data assigned by the two different groups (teachers respectively editors). On the one hand, the number of different terms results from the systematics path: while teachers will occasionally use only one term to describe a resource, the systematic pathway will always encompass a series of superordinate terms. In the intersecting set, Elixier contains 1332 terms that do not exist in Edutags. The same set accounts for 219 tags that can be found in Edutags only. This shows that users apply other criteria for categorisation than editors. However, it is also evident that meshing metadata from both systems would in each case lead to an enrichment. Adding the systematic path of Elixier to resources in Edutags can make it easier to locate a resource. Vice versa the tags created by teachers would add new facets to the description in Elixier.

For indexing in Edutags, a procedure needs to be provided that enables automatic tagging by subject to offer users added value in terms of better "findability". To import user tags into Elixier an API will be set up. In summary, it can be stated that regarding question 1, a benefit is expected for both systems.

5.2 Open Educational Resources (OER)

In a second step, we want to investigate in what way OER are present in Elixier and Edutags. A frequently used approach to making educators aware of OER is to publish collections of OER (Blees & Heinen, 2013). Edutags is based on another approach: To foster awareness of OER, it seems helpful to present OER together with other learning resources and put some effort into rendering OER resources visible. In Edutags, OER are distinctly tagged with an instance of CC-licence and the tag "Creative Commons". A logo of the licence is displayed with the bookmark. For this purpose, a crawler is integrated into Edutags; it visits the websites that are linked by the bookmarks and searches for a machine readable CC-licence. The CC-licence model consists of three layers: the legal text, the Logo and the machine readable licence (Creative Commons, 2009). This is a small piece of html code embedded in the website. If the crawler finds this snippet, it adds the licence to the bookmark. We can find 2718 resources in Edutags that are tagged as OER. 2.280 of these resources are only tagged as OER by the crawler. That means: In 2.280 cases the user was not aware of tagging an OER or this information wasn't important to the user. The benefit of the crawler is that it raises the user's awareness of the OER-quality of a bookmark and forwards this information to other users. This crawler is another example of how automatic tagging adds value to the user's tagging.

Comparing the complete collections with respect to the representation of OER, a significantly different picture is revealed than in the above comparison. In Edutags as mentioned we find 2718 OERs, in Elixier only 227 resources are described as OER. Two reasons can be assumed for this observation: The resources in Elixier are not published under a free licence – at least not under a CC-licence. The editorial staff did not care about the CC-licence.

In the case of OER, it seems more viable to use the crawler also to scan resources in Elixier. If the number of OER remains small, the result could be used to a) reconsider the criteria applied by the editorial staff for selection of a resource and b) to make publishers aware of the lack of free licences.

6 Conclusion

In general reference platforms may be filled with content in three ways: (1) **Editorial Maintenance:** An editorial team looks for materials on the Internet and posts references to these materials, usually furnishing them with keywords. This corresponds roughly to the practice adopted by Elixier. (2) **Automatic Aggregation**: Crawlers analyse the contents and attempt to classify them automatically. (3) **User-generated Collection**: The users themselves enter references to valuable educational materials, assess these and provide keywords.

At present Elixier uses option 1 wheras Edutags relies on option 2 and 3. As could be shown an integration of all three options would provide better search results. In future an integration of Elixier and Edutags will give the best of both systems to the user. This does not entail that the combination of both systems is meant to be a monolithic referatory (Blees & Heinen, 2013). Despite exerting some gravitational force it seems to be important to keep the system permeable to build and foster an open ecosystem (Kerres & Heinen, 2014).

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Shaping Competence: Quality in Transformative Learning for Schools

Alan Bruce[1], Katerina Riviou[2]

[1]Universal Learning Systems, Ireland
abruce@ulsystems.com
[2]Ellinogermaniki Agogi, Greece

Abstract: European education is undergoing a fundamental shift due to a number of factors that include the impact of globalization, the need to adapt to a rapidly changing and evolving society, the impact of advanced ICT supports and the need to develop an inclusive learning system for hitherto marginalized groups. This paper looks at the emergence and growth of competence based education, which represents a radical shift away from traditional time bound schooling systems based on curriculum rigidity to a new system based on competence and sustainable skills based learning. Competence frameworks are analysed with reference to standards, quality and teachers' professional formation. Specific reference is made to the learning and insights of the TRANSit project and its research on best practice as well as to the role of competence is fostering transferable skills, critical reflection and innovative thinking that goes beyond teacher centred systems to learner centred ones in a dynamic of quality driven lifelong learning and access.

Keywords: Competence based education; Learning theories; Quality and standards in competency frameworks; Technology; Competency frameworks; Globalized learning.

1 Overview on Competence

It is a commonly accepted fact that the transformative processes now shaping the future of European educational systems rest significantly on the skills, knowledge and attitudes of teachers. Moving from a largely curriculum driven system to one based on a more qualitative understanding of the need to instil competence is neither a quick nor easy process. Standardized systems of teaching, instruction, assessment and validation have been established over many decades. Significant resources are invested in their maintenance and perpetuation. Our very understanding of quality is shaped by discourses on

standards, outcomes and measures built into traditional curriculum centred schooling systems. This quality framework itself depends on a set of assumptions around stability, reliability and verifiability. Evidence of recent years indicates that, in themselves alone, standards driven curricula are not sufficient to equip learners to meet the full demands of a dynamic and expanding labour market.

Learning theory and research indicates that students learn more effectively in a technology-enhanced environment. The concurrent increase in innovative online degree programs and competency-based learning demonstrates this linkage and relevance across the entire learning spectrum. Sifting through more data to reach more informed decisions about what students know or can do or can achieve is not the only issue deploying such technologies. It is also critical to use technology to fulfil one more aspect: quality.

By designing courses as truly interdisciplinary explorations, keeping faculty closely attuned to student progress and constructing assessments that demand critical thinking, we can employ technology to ensure that the foundational aspects of a well-rounded education informed by critical and reflective perspectives underpin our online ventures. Competency-based approaches build upon standards reforms. At their core they offer a new value proposition for existing education and learning systems. Competency-based policy has sometimes been described as simply flexibility in awarding credit or as an alternative to curriculum driven systems. This does not capture the depth of the transformation of the education system from a time-based system to a learning-based system. This serves to focus the attention of teachers, students, parents and the broader community on the need for learners to master measurable learning topics.

Competence based education is an institutional process that moves education from a focus on what academics or instructors think students need to know (teacher-focused) to a new focus on what students need to know and to be able to do in varying and complex situations (student and/or workplace focused). The impact of increasing competencies is synergistic, and the whole is greater than the sum of the parts. This learning has an increased emphasis on connectedness and demonstrated relevance of the individual elements to the wider whole. This paradigm ideally matches the complex and often-shifting realities of the worlds in which learners operate, whether academic, applied, social or economic.

Competencies within different contexts may require different bundles of skills, knowledge and attitudes. The challenge is to determine which competencies can be bundled together to provide the optimal grouping for

performing tasks required. Another challenge is designing learning experiences that support students as they practice using and applying these competencies in different contexts. In essence, competence based education is a process, not a product. The issue of competence thus becomes central when linked to schooling system change, technological sophistication, usability and outcomes that enhance sustainable learning. “Competence means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development” (European Communities, 2008).

2 Competence Frameworks

The DeSeCo programme (OECD, 2000) identified four analytical elements of key competences: multifunctional; transversal across social field; refer to a higher order of mental complexity; multi-dimensional, incorporating know-how, analytical, critical, creative and communication skills, as well as common sense.

The European Commission identified eight key competences, which have framed this paper (2008). The key competences are:

1) Communication in the mother tongue
2) Communication in foreign languages
3) Mathematical competence and basic competences in science and technology
4) Digital competence
5) Learning to learn
6) Social and civic competences
7) Sense of initiative and entrepreneurship
8) Cultural awareness and expression

By keeping these key competences in mind, students can learn to act competently in an academic/scientific way as citizens of a modern society (learning for life) in professional situations (learning for a profession), on the labor market (learning for a career) and in the own learning processes (learning to learn). Skills needed to achieve key competences include: initiative, critical thinking, creativity, problem solving, risk assessment, decision-making and the constructive management of feelings.

In order to define the required competences for a specific job or task role, competence frameworks are designed and developed. Especially for school

teachers, UNESCO (UNESCO, 2008) has defined an ICT Competence Framework, which aims to provide a basic set of qualifications that allows teachers to integrate ICT into their teaching, to advance student learning, and to improve other professional duties. According to the UNESCO ICT Competency Framework it is not enough for teachers to have ICT skills and be able to teach them to their students. Teachers need to be able to help the students become collaborative, problem-solving, creative learners through using ICT so they will be effective citizens and members of the workforce.

The Teacher Competency Framework designed for the TRANSit project course is based on the research carried out on a number of frameworks in place around the world.

The frameworks that also influenced the design were the UNESCO ICT Competency Framework for Teachers (United Nations 2011) and the Western Australia Teacher Competency Framework. (Western Australia, Department of Education, 2009). Both frameworks look at teacher competency in slightly different ways. The UNESCO framework focuses on ICT competencies with some interesting examples and pedagogical standard guidelines. The Australian Framework covers all areas of a teachers work and has very clear and specific descriptors of competency standards.

The TRANSIt Teacher Competency Framework defines the criteria from which it will be possible for a teacher to determine how competent they are in didactics and e-assessment of transversal key competences (using rubrics). The approach is inspired by constructivist methodologies. This means teachers taking the course or course modules will be carrying out their teaching duties but also creating and using e-Portfolios as part of their learning process.

The term competency standard refers to “a combination of attributes underlying some aspect of successful professional performance” (Gonczi et al., 1990, p.9). Competency standards are concerned with application of professional knowledge and skills within the workplace and are underpinned by teachers' professional values. Each competency standard is a statement of the level of competency a teacher exhibits for that dimension. In the TRANSIt Training Framework there is a qualitative scale for every competence.

Another important consideration in developing the framework is the social networking platform where teachers will be able to exchange and co-create their cross-curricular educational scenarios. Fostering students’ competences is an imperative and synergies with other projects to achieve this goal - such as Open Discovery Space (ODS) - are very important. The ODS project utilises the UNESCO framework to a significant degree in the way participants and users are profiled.

3 Competence Based Learning Contexts and Theories

The aim of *TRANSIt* is to have a positive impact on development of students' key competencies through building teachers' capacity on competence oriented education. The methods of the project are founded on a holistic view of students' learning, personal and social development, going beyond subject boundaries and finding application in a wide spectrum of curriculum subjects. The *TRANSIt* approach develops creativity, adaptation to change, intercultural and multilingual competences, social development, "learning to learn" and improved capacity to solve problems. Competence based learning requires an approach to education that differs from the traditional approaches to teaching. The emphasis is to a lesser extent on transferring knowledge. In competence based education one tends to think of powerful or rich learning environments that enable students to engage in meaningful learning processes.

The most distinctive features of this approach are as follows:

- Meaningful contexts;
- Multidisciplinary approach;
- Constructive learning;
- Cooperative, interactive learning (with peers, teachers and trainers);
- Discovery learning;
- Reflective learning;
- Personal learning.

4 Technology Enhanced Learning and the TRANSIt Project

To live, learn, and work successfully in this increasingly complex, information-rich, knowledge-based and rapidly changing society, students and teachers must utilize technology effectively. In Technology Enhanced Learning (Goodyear & Retalis, 2010) there is a special focus on the role of technologies in the learning processes of people. The key competences mentioned in the European Reference Framework (2007) form a source for lifelong learning. By developing an online platform for creating, sharing and collaborating on other ideas, it is possible to make a European accepted competence based learning approach. The Commission described this framework as follows:

> *As globalization continues to confront the European Union with new challenges, each citizen will need a wide range of key competences to adapt flexibly to a rapidly changing and highly interconnected world. Education in its dual role, both social and economic, has a key role to play in ensuring that Europe's citizens acquire the key competences needed to enable them to adapt flexibly to such changes. In particular, building on diverse individual competences, the differing needs of learners should be met by ensuring equality and access for those groups who, due to educational disadvantages caused by personal, social, cultural or economic circumstances, need particular support to fulfil their educational potential. Examples of such groups include people with low basic skills, in particular with low literacy, early school-leavers, the long-term unemployed and those returning to work after a period of extended leave, older people, migrants, and people with disabilities.*

Most European countries acknowledge that teachers need to prepare students for life, learning and work in the 21st century. In general we can conclude that competence based learning and teaching is at many different levels integrated in many European countries.

Due to the growth of the digital learning, different national initiatives and portals were developed. Greece has for example the national school repository and the educational web portal *Photodentro*[3]. The Netherlands has the knowledge-sharing portal *Kennisnet*[4] and Ireland has facilities for in-service training, like *Scoilnet*[5] and *PDST Technology in Education*[6].

A general conclusion that can be made – based on the situation in the different countries – is the fact that competence-based learning and teaching is interwoven in most countries, but that the teaching and assessment differ per country. Besides that most key competences defined by the European Commission (2009) have different titles in each country and are not completely implemented in education. Only Austria and Spain adopted a competence model, while the Netherlands and Ireland base their educational structure on skills and

[3] photodentro.edu.gr/lor/
[4] www.kennisnet.nl/
[5] www.scoilnet.ie/
[6] www.pdsttechnologyineducation.ie/

knowledge, formulated in goals. However, the willingness to adopt a competence-based approach is present, but the means to do this is lacking.

5 Conclusions

According to the needs analysis performed in the context of TRANSIt project, the training framework for teachers in competence-based education must include training on methodological approaches on how teachers can effectively teach while simultaneously enhancing students' competences. Key methods are founded on a holistic view of students' learning, and their personal and social development. The approach is designed to go beyond subject boundaries and find application in a wide spectrum of curriculum subjects such as social sciences and history, arts and cultural education, languages, and environmental education.

The approach contributes to development of teachers' ability to enhance students' transversal key competences. Moreover, the proposed approach promotes the Transversal Key Competency Acquisition (TKCA) by all, irrespective of student's personal and social backgrounds. This is inspired by constructivist methodologies. This means teachers taking the course or course modules will be carrying out their teaching duties but also creating and using e-Portfolios as part of their learning process. The tools and features of the *TRANSit* learning environment uniquely support this feature. Constructivism views learning as a process in which the learner constructs knowledge based on their past experiences. The teacher only acts as a facilitator who encourages students to explore within a given framework. Learners may collaborate with others to organize their ideas and learn from each other to construct their own knowledge.

In addition, teachers have access to the ODS portal to access and publish learning resources created. The ODS portal gives access to existing repositories of e-learning resources. These repositories can be searched via a dedicated interface that enables users to retrieve e-learning resources on a particular topic, for a particular age group or educational level, and supporting a particular teaching approach. Additionally, the ODS portal will provide users with various tools to annotate and adapt the retrieved resources, and share experiences on the use of the resources with others. In this way competence-based education approaches are enhanced and the quality embedded in an approach that is designed to contribute forcefully to the transformation of European education and training systems.

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Evaluating the use of iPads with first-year Medics

Mark Hamilton, Gráinne Conole, and Terese Bird

University of Leicester, Medical School and the Institute of Learning Innovation, University Road, University of Leicester, Leicester

mh300@leicester.ac.uk

Abstract: This paper reports on the evaluation of the use of iPads in Medicine. All first-year students at the University of Leicester were given iPads as part of their registration fee. Students could download course materials from the Learning Management System and used the Notability App to read and annotate. Data was collected via two surveys. Students increasingly liked their iPads as the term progressed and increasingly incorporated them into their practice. This fits the 'Integrated innovation and quality approaches theme.

Keywords: iPads, evaluation, Medical school

1 Introduction

Today's smart phones and tablets means that learning anywhere, anytime is now a reality. These are particularly useful for learning on the move, benefits include: size and portability, readability and customisability. In addition, there are now many Apps for communication, curation, annotation, mind mapping and tools for production. In addition, there are Apps specifically for learning, including subject specific resources. This paper reports on the evaluation of the use of iPads with first-year Medics at the University of Leicester. In October 2013, all first-year Medics were given iPads as part of their registration fee. They were provided with a brief face-to-face training session on how to use the iPads. Data on their perception of and use of the iPads were gathered through two surveys; one at the start of term and one at Christmas.

2 The emergence of mobile learning

The first generation of mobile devices emerged in the mid-nineties, with the promise of enabling learning anywhere, anytime (Sharples, Corlett et al. 2002;

Kukulska-Hulme and Traxler 2005). Quinn (2000) and Pinkwart, et al. (2003) focus on the technology and defined m-learning as 'e-learning that uses mobile devices'. Laouris and Eteokleous (2005) put forward a broader definition: "We suggest taking a broader view that accounts for a learner freely moving in his physical (and virtual) environment. Tomorrow's learners will have access to a dynamically changing repertoire of devices and services that will differ in speed, processing power, monitor (and other output) characteristics, etc. As our engagement with technology changes with time, mobile learning becomes a function not only of time, but also of the momentarily available and dynamically changing technology. The various mobile devices, embedded in our virtual environment, need to be considered not only in concert and in context with their inter-relationships and inter-dependencies to different types of content and content delivery. They must also be considered as functions to time-varying levels of attention, interest, preferences and motivation of the learner'.

A number of projects explored the use of such devices across formal and informal learning contexts; considering how these devices could be used across different learning spaces, beyond the formal classroom setting, into the home and within informal learning contexts, such as museums. A few illustarative examples are given here. The Personal Inquiry project[7] used mobile devices to promote inquiry-based learning for Science with 11-14 year old children. Based on a literature review, an inquiry-based learning framework was developed, that was then built into the device and used by the children to guide their inquiry process. The handheld computers, monitored and supported by their teacher, guided the students through the activities, which can change depending on the profile and input of each individual taking part. Peters (2009), describes a number of examples of mobile learning across different disciplines. Environmental Detectives is a suite of games, wherestudents play the role of Environmental Engineers and are presented with a scenario in which the spread of a toxin is simulated on a location-aware Pocket PC equipped with a Global Positioning System (GPS). Interest has emerged in recent years in ensuring that physical learning space are Technology-Enhanced[8] and an important aspect of this is ensuring that there is sufficient wifi and provision for the use of mobile devices. An example is a Law School built by Melbourne University; it was designed to have good wireless access to enable students to use their mobile devices to access course materials, etc. Hartnell-Young and Jones (2004) described the use of Tablet PCs with Medical students, to enable them to capture

[7] http://www.pi-project.ac.uk/
[8] See for example http://www.skgproject.com/

and story confidential patient information and to deliver to them just-in-time information on clinical problems. Students also kept a reflective journal using these devices.

3 Methodology

The focus of the research was to elicit how first-year Medics were using iPads to support their learning and what their perceptions were of the use of the devices. Course materials were made available as PDFs on Blackboard, which the students could then download onto their iPads. They used the Notability App to read and annotate the materials. Data was gathered via two surveys; one administered at the start of the academic year and one just before Christmas. In the first survey the students were asked 7-closed questions (Table 1) and 1 multiple-choice question (Table 2). They were then asked a number of open-ended questions. These included: asking them for any other comments on their experience of reading and annotating on the iPad, whether they discovered any other Apps that they found useful for their learning, They were also asked what would be the optimal set of tools to support their learning.

4 Results and discussion

Table 1 shows the results of the first survey. It is evident that the overall impression of the students was positive. 96% had little or no difficultly initially setting up the iPad. This is perhaps not surprising. Firstly, because today's students are technologically competent and no doubt many of them have already used a tablet device. Secondly, the face-to-face session introducing them to the iPads will have helped, particular for those students who hadn't used tablet devices before. 92% found it was very easy or easy to download materials from Blackboard to their iPads. Interestingly, only 69% were either satisfied or very satisfied with their learning experience of reading the assigned materials on the iPad. Similarly, only 74% were either satisfied or very satisfied with using Notability for reading and annotating the learning materials. Encouragingly, 85% stated that they felt supported in the use of their iPads. Inevitably, the initial face-to-face session will have helped. Only 57% were satisfied or very satisfied with accessing library resources via the iPad. However, 82% stated that they satisfied or very satisfied with using the iPad to support their learning.

Table 1: Responses to the closed-questions

Questions	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable	Unanswered
It was easy to initially set up the iPad.	67.4	28.9	3.6	0	0	0	0
It is easy to download material from Blackboard to the iPad.	55.4	37.3	7.2	0	0	0	0
I am satisfied with the learning experience of reading the assigned material on the iPad.	21.7	47.0	13.2	15.7	2.4	0	0
I am satisfied with Notability as a way to read and annotate the learning material.	27.7	45.8	14.5	6.0	2.4	3.6	0
I have felt supported in my use of the iPad for the course.	30	55	11.0	1,2	0	0	2.4
I am satisfied with accessing University library resources via the iPad.	19.3	38.5	26.5	8.4	2.4	2.4	2.4
Overall, I am satisfied with using the iPad to enhance my learning in this course.	40.0	42.2	7.2	8.4	1.2	0	1.2

The qualitative data provided more insights into the students' perceptions of the iPad. There were some complaints about navigation and ease of use. In particular, students would have liked to have a linked contents page in the pdfs, so that they didn't need to scroll through a document to find something. Students liked being able to have resources available electronically; both course materials and e-books. They also liked having the ability to annotate the resources. Most found reading and annotating easy, although some students still preferred using pen and paper. The following quotes are interesting, in terms of the affordances of pen and paper enabling more 'active learning':

> Annotating on the iPad is less 'active' than having to take down notes from lectures, meaning I have to revise the content a little more as not as much sticks in my head the first go round. However it makes the process of revising the material much easier, as I have absolutely all the information from the lecture right there.

> Annotating on the iPad is less 'active' than having to take down notes from lectures, meaning I have to revise the content a little more as not as much sticks in my head the first go round.

Although this student did go on to say:

> However it makes the process of revising the material much easier, as I have absolutely all the information from the lecture right there.

Students appeared to have particular problems with the use of iPads in a group context; describing it as cumbersome and time consuming. Although a positive was that it was a good way to store the workbooks and answers together. There were some glitches with Notability, a number of students reported that they had problems with the App freezing. Students also reported that it was difficult to simultaneously manage several documents. The iPad appeared to be good for reading and annotating text, but was less so for drawing diagrams and chemical molecules or for answering mathematical questions. Some indicated that the iPad was really beneficial as the following quotes illustrate:

> I find the iPad really benefits my learning.

> I think the iPad is great for during lectures, as you can have the slides in front of you and annotate well.

> Very good. I have a lot of textbooks as PDFs which I find easy to use and useful to have whenever I need them. I find that annotating lectures on the iPad is much quicker and neater than if I was trying to write notes.

> I also really like being able to listen to lectures again on the ipad whilst following the slides on Notability.

> … it has made organisation and neat note taking much easier than folders full of paper.

> It's portability means that I am not lugging heavy books everywhere, but have some ebooks neatly stored onto the iPad library - much easier to flick through these whilst going over notes.

In terms of which devices they used for learning at home, only 26.5 % primarily use the iPad, the majority (61.4% use both the iPad and their computer or laptop. A small percentage (8.4%) mainly uses their computer or laptop and just over 2 % do not use anything electronic. Students listed the following Apps that they found useful to support their learning: mind mapping Apps such as mindmode, simple minds and HD, homework Apps for keeping track of private study to complete, the Blackboard mobile App, Dropbox for storage, Notability and iBooks for reading long PDFs, tools for creating documents and presentations, such as QuickOffice, iWork and Prezi for creating presentations, Apps and websites of resources were mentioned. These included, the App patient.co.uk for getting an overview of conditions mentioned in lectures, Kahn Academy, Student Grays Anatomy, NutriBichem, MB Anatomy, VizAnatomy, OSCE skills, Skeleton, resuscitation, side by side for reading two different documents at once, SketchBook for creating sketches and diagrams, Flash card Apps such as Brainscape, Quizlet and Peek for creating and using flash cards, BaiBoard as a communal whiteboard and Audio note for combing basic notes with audio

They were asked them what would be the optimal set of tools to support their learning. There were mixed views on the benefits of the iPad, some liked it for individual work and others for group work; others still preferred using pen and paper. One of the key benefits of the iPad was the advantage of having everything available in one place. Dropbox was cited as a useful way of sharing resources. There was a call for more e-Books and one student stated that the library e-books were hard to use. One student expressed the benefit of a multiple approach:

> [The] i pad is useful, able to have all workbook infomation and lectures at all times, and useful to have two things up at once e.g workbook on i pad whilst looking at lectures slides that have been annotated on the computor screen thrpugh dropbox. Possible to have work books available to buy.

The second survey was administered to both those attending an undergraduate course (70%) and those attending a graduate course (30%). Table 3 shows the breakdown to a number of closed questions. 81% were satisfied or very satisfied with their learning experience of reading assigned materials on the iPad, which is a significant increase on the response to the same question on the first survey. 78% were satisfied or very satisfied with the Notability App for reading and annotating learning materials, a very slight increase on the response on the first survey.78% stated that they were satisfied or very satisfied with the support they received on the use of their iPad, which is a significant decrease from the respond on the first survey. It is not clear why this is but is perhaps related to not receiving enough support when they encountered problems. Only 58% were satisfied or very satisfied with accessing resources from the University library, which is the same as the response on the first survey.

Table 2: Close question responses to the second survey

Questions	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable	Unanswered
I am satisfied with the learning experience of reading the assigned material on the iPad	27.0	54.5	7.8	7.8	2.6	0	0
I am satisfied with Notability as a way to read and annotate the learning material	35.1	42.9	10.4	7.8	0	0	0

I have felt supported in my use of the iPad for the course	18.2	59.8	18.2	2.6	0	1.3	1,3
I am satisfied with accessing University library resources via the iPad	15.6	41.6	23.4	16.9	0	1.3	1,3

In terms of which devices students used to study at home, the use of the iPad as the primary device had increased slightly, although the majority still used both the iPad and their own computer or laptop (64%). A number of additional questions, compared to the first survey were asked, in particular to elicit changes in learning behaviour. In response to the question 'Has your attitude toward using the iPad changed since the beginning of your course?' 63.6% stated that it had, in a positive way; only 6.5% stated that they were more negative about it, and 28.6% stated that their attitude remained the same. A number of reasons were cited in terms of more positive attitudes towards the iPad, these include that it was a useful way to learn, being able to have all the materials in one place, ease and value of annotation, and the range of Apps available – both generic (like Dropbox) and subject specific. In terms of backing material up only 18.2% said that they had problems. Problems cited included: losing annotated copies of their PDFs, Notability freezing, file sizes being too big to save to Dropbox, and the iPad crashing. In terms of qualitative responses a number of interesting themes emerged. Many students commented that the iPad was useful for a number of reasons:

> Very useful as you have all your notes without having to carry massive folders! Also useful to have internet connection for group work sessions. Wifi not always perfect though in the medical school!

> It is very convenient and simple to annotate slide shows in lectures, and then even easier to look over them for revision purposes

> I have realised how useful it is to have all the resources i need on one device.

Of particular note is the follow quote about the fact that the iPad promotes spontaneous learning:

> I have found that I am more likely to do spontaneous revision by having all my work so readily accessible on the iPad.

Another student noted the value in terms of viewing images in groups:

> I did not realise how helpful it would be when in group sessions when looking at images connected to the subject we are covering.

As students got more used to using Notability, the earlier problems noted appear to have been resolved:

> At first I was a little apprehensive as I was used to paper format. However once I started using the iPad I had adjusted to the style of learning and information format provided. I now find it easy to use a combination of the iPad and written notes for my work. The iPad is extremely useful when trying to access specific material. It also saves carrying lots of documents!

Mobility was mentioned as an advantage, however, a reasonable number of the students still preferred printed materials/pen and paper. Some found it difficult to read from the screen and stated it gave them eye strain.

5 Conclusion

The focus of the research was to elicit how first-year Medics were using iPads to support their learning and what their perceptions were of the use of the devices. Students were divided; some liked the iPads and found them useful for reading and annotating resources and for having all their learning materials gathered in one place. Other preferred to use pen and paper, arguing this promoted more active learning. The students found and used a range of additional Apps to support their learning, such as generic Apps to create documents, presentations, diagrams and mind maps, as well as discipline specific Apps and resources.

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Cultural Country Profiles and their Applicability for Conflict Prevention and Intervention in Higher Education

Thomas Richter[1], *Heimo H. Adelsberger*[1]

[1]TELIT at University of Duisburg-Essen, Germany
thomas.richter@icb.uni-due.de, heimo.adelsberger@icb.uni-due.de

Abstract: After an introduction, we discuss the conflicts that occurred in a highly experimental course setting, in which we implemented a student-centered course in urban higher education with a constructivist, blended-learning design. We analyse to which extent the cultural country profiles from our Learning Culture Survey suffice to prevent intercultural conflicts in education and provide support for the design of respective interventions.

Keywords: E-Learning; Technology Enhanced Learning; Competence Development; Group work; Intercultural Competence; Learning Culture

1 Introduction

Cultural conflicts in international learning scenarios can be an opportunity for the learners to develop competences in intercultural communication and collaboration. However, if not accordingly reflected, such conflicts could lead learners to lose their motivation. In the context of e-Learning (in the following, referred to as "Technology Enhanced Learning", TEL), the learners' motivation is understood as the most eminent influence factor for successfully completing courses and programs. In contrast to the traditional classroom education, audio-visual recognition of mimics and gestures is missing (Conrad 2002). Thus, the instructor has little chances to quickly recognize a learner's decreasing level of motivation. We do not understand monitoring the learners' efforts (Jain 2002) as an adequate indicator for decreasing motivation because, in terms of successful interventions, it might take too long until frustration is reflected in decreasing efforts. An alternative solution could be encouraging the learners to explicitly communicate such emotions. Just, learners might not accept this offer since explicit communication of frustration often is understood as complaining or inadequate criticism. A lot of research has been conducted investigating how to restore motivation (e. g., Williams & Burden 1997), some research deals with

aspects that actually cause frustration (Nilsen 2009), but little research focuses on preserving initial motivation (Bowman 2007). BOWMAN (ibid) claims that strong efforts should be made in order not to "*destroy*" the initial motivation by confronting the learners with unnecessary conflicts. In this context, HABERMAN (1995) claims that educational institutions are fully responsibel to ensure that an environment is provided which leads to productive learning for any kind and type of learner. We adapt this claim for TEL.

Since 2009, we investigate learners' perceptions of education in different national, societal, and contextual settings. With our established and on-going "Learning Culture Survey" (LCS), we aim to achieve a better understanding of the differences between educational cultures (Richter 2011). The results of this research are geared towards a development of activities that prevent learners from losing their initial learning motivation in intercultural educational settings and thus, are clearly meant to increase the quality of education. With our resulting cultural profiles on national, regional, societal, institutional, and contextual level, we generally can sensitize instructors and learners according to cultural diversity in education. This fosters their understanding and hopefully, reduces misunderstandings. In terms of cultural differences between particular contextual settings (e. g, two countries) we can prepare instructors and learners on, e. g., commonly usual (at home) behaviour and/or instructional practices that might cause conflicts in the other setting. This knowledge particularly supports instructors to implement culture-sensitive lectures and learners, to realize the necessity to cauciously enter foreign educational contexts.

Our research in the LCS bases on the understanding of culture as "*the customs, beliefs, social structure, and activities of any group of people who share a common identification and who would label themselves as members of that group*" (Oetting 1993). Following this concept, we assume that the 100 culturally specific items we selected for investigation have similar meanings in each society, and, according to the perceptions of the people in each context, reflect the spirit of the majority. As consequence, we can read little into the perceptions of individuals. When understanding culture as a set of majority criteria on society-level, individual perspectives get lost, as these are related to more than just a single society's culture (Karahanna et al. 2005). At this point we meet and cannot fully solve the so-called Malinowski dilemma (Malinowski 1922), which describes two basically conflicting goals; wanting on the one hand, to deeply understand a specific culture (e, g., in order to provide culture-sensitive education) and, on the other hand, comparing this particular culture with others (e. g., to determine

conflict potential). In order to evade this dilemma, we use a method-pluralistic research design that additionally reduces the risk of stereotyping (Peterson 2004).

We implemented an experimental course-design for our established lecture on Enterprise Resource Planning (Richter & Adelsberger 2013). Apart of the aim to improve the quality of our lecture, we pursued research goals, i. e., achieving an understanding of the impact of culture-related conflicts and of the level of applicability of our national profiles from the LCS. In the following, we first introduce our didactical objectives, the course design, and our sample. Then, we outline particular conflicts of which the students reported during the course's runtime and, subsequently, during their self-reflection phase. Eventually, we exemplarily analyse specific conflicts in order to find out to which extent our data from the LCS could have been supportive for both the students in order to cope with cultural differences, and for us, in order to properly prepare and intervene.

2 A constructivist lecture with blended learning design: Course setting outcomes, and experiences

For our lecture, we decided to change the design from a teacher- to a student-centered approach. Instead of teaching contents that easily can be read in a book, we wanted to support our students to achieve competences, which are required for their bachelor thesis and their future every day's professional life. Such competences are related to writing (authoring), teamwork, English language, communication and collaboration skills, and group/project management.

The course schedule was limited to a single semester. The course was calculated for 3 ECTS points, which means a total student's effort of 90 working hours. 121 students from different fields were registered for this particular course of which 13 dropped out after the introduction. The course language generally was changed from originally German to English. Instead of in average twelve lectures, the professor held a single one (the course introduction). For the rest of the time, the professor and his assistant took the roles as moderators and coaches. The students became the active subjects in the course: In the first lecture, the general concept and goals of the course, as well as the fixed timeline for deliverables were introduced. Without the choice for changes, the students were assigned to quite large groups (8-10 students per group): Our course consisted of 65 % German and 35 % foreign students, whereas we could not distinguish between guest students and first-/higher-generation immigrants. In order to ensure an intercultural setting for each group, the foreign students were separately assigned. Most of the foreign students came from Turkey, Ukraine and

Bulgaria. Three students came from Russia, two from Asian countries, and each one from Iran and USA.

The groups were uniquely assigned to topics, which were handled as distinguished issues within the original course design. For each topic, we provided some basic literature and a prestructurd list of subtopics that needed to be considered in the groupwork. According to the topics, each group had to (1) research current literature, (2) write a "semi-scientific" paper about the topic following usual conference formatting rules (max. 10 pages text), (3) prepare a presentation for the other students, and (4) present the results. Everything was supposed to be done in English language. In the end of the course, each student had to self-reflect about the own experiences (in written form). For that purpose, we provided a pre-structured questionnaire following KIRKPATRICK'S (1959) evaluation model. In order to achieve competences, this self-reflection phase is crucial (De Haan & Rülcker 2009). The submission of these documents was mandatory to qualify for the examination. Figure 1 displays the course schedule.

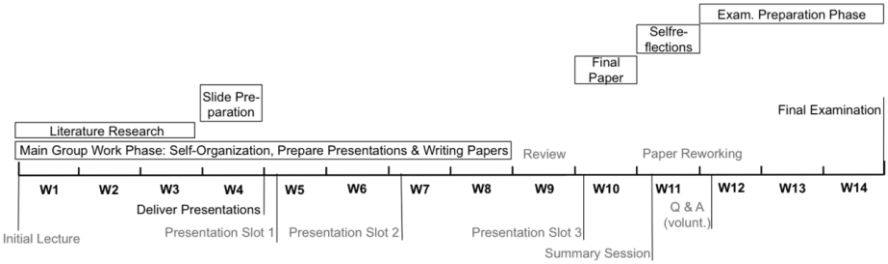

Figure 1: ERP-Exp. course schedule

We were fully aware that the very tough course schedule and organizing the relatively little amount of work in such large groups would put all of the students under stress. The groups had to determine and establish communication channels, decide about the division of tasks, set schedules, etc. For each group, we provided a distinguished forum on our Moodle platform with the opportunity to distinguishedly manage their documents. Furthermore, the students were encouraged to establish their own communication channels, which actually varied between telephone conferences, chats via Skype or other chat programs, and e-Mail. For the collaborative writing, most of the groups used Google docs.

The distribution of tasks among the group members was fully up to the groups. However, for each group we allowed one member to fully focus on the moderating/management role and further two who mainly were responsible for the design and production of presentation. We encouraged all of the students to

partake in the literature research and introduced the managing position as the most time-consuming one; mainly because of the consolidation work. For any kind of problems, e. g., technical, organisational, or personal, we granted a 7/16 full support with a maximum reaction time of eight hours.

The presentation itself was supposed to be held by the whole group in a frontal teaching situation. Each group had 20 minutes for the presentation plus 10 minutes for discussions. We also used the discussion time to intervene in cases that presented information required adjustment. For the examination, we chose four of the papers and improved them regarding language use, style, and content. These selected and improved papers were the students' basic information source for the exam preparation. Memorized knowledge was not expected to lead to successful passing the exams but instead, the tasks were fully related to comprehension. Finally, we published a set of possible exam-questions and promised to choose the "real ones" from this set (with minor changes).

In our former courses, we followed the same cognitivist approach regarding the examination design but provided a far longer list of potential tasks in the very beginning of the course. In the original course, about 80 % of the students stopped their attendance latest after the third lecture. In the examination, about one third of the registered students did not show up. About 60 % of the remaining students eventually passed the exam. After having implemented our new constructivist setting, 99 of the qualified 108 students (all participants) registered for the first exam-date of which two did not show up and further three failed. 14 students, including those who failed the first time, registered for the second chance. All students eventually passed this exam. We did not lower the level of difficulty according to the former semesters but assigned exactly the same tasks. The exam text was bilingual. For their editing, the students had to decide for one language, German or English. 58 of the 108 students chose English.

Several conflicts occurred during the course's runtime according to the general course setting as well as according to interpersonal challenges within the groups. To give examples, our choice for conducting the course in English language meant a problem for students with Eastern European and Asian background. We did not consider that students from these regions often do not learn English as a second but as a third language. Another conflict resulted from the group building process: Particularly students from Germany and Turkey were upset not being allowed to choose group members amongst friends. Working productively with foreign people in a common language was supposed to be one of the basic challenges in this course. From the 108 received self-reflections, 98 eventually proved usable for analysis. Many students reported having experienced difficulties to deal with the conditions (language and cooperation

issues) and goals (formatting rules). Nevertheless, they welcomed the chance to working in groups (improving social skills), giving a presentation in front of an audience, and improving their general writing, researching, and English language skills. No student in this particular setting reported having made new experiences according to the use of technology for communication and collaboration.

From our experience as instructors, individually coaching such a large amount of students extended a full-time job. We underestimated the workload necessary to transfer the students' papers into learning material, appropriate for exam-preparation. Anyways, according to the results and feedback, our efforts were fully rewarded. Thus, for smaller classes, we fully recommend such a setting.

3 Data collection, found conflicts, and analysis with LCS profiles

With the support of guest students, we lately received translations of our standardized LCS-questionnaire into Turkish, Russian, and Bulgarian. We drove first test studies in the students' home universities involving their private student networks. We received 30 valid responses from Bulgaria, 40 from Turkey, and 53 from Ukraine. For acceptance, the respondents had to be local university students and should not have lived abroad for longer than 6 months. Our small samples surely are not representative for the whole populations but good enough to receive an impression what we might find in a representative study.

In our course, particularly two aspects led to conflicts, which we directly assign to culture; the group building process and the adherance to schedules.

Regarding our centralized group building efforts, 80 of 98 students eventually reported (within their self-reflections) having made valuable experiences according to the development of soft skills. As for the adherence to schedules, 18 students (mainly group managers) reported problems. The problems particularly were related to deadlines that were agreed within the groups. We had to intervene in 6 cases. However, according to the nationalities of these students, no pattern could be found.

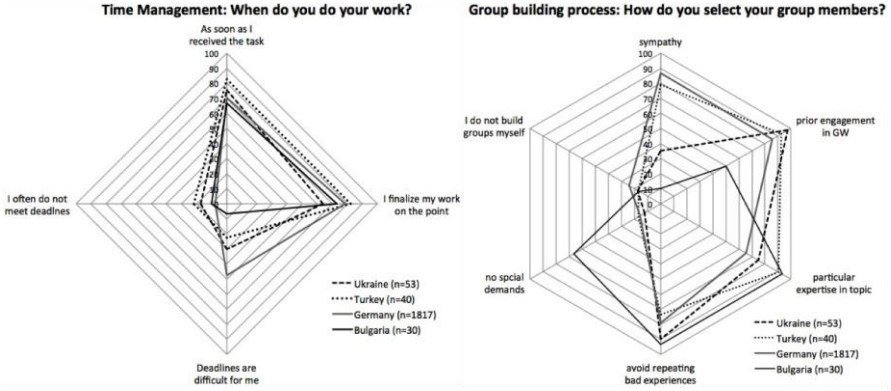

Figure 2: Country profiles: Time Management and Group building processes

In Figure 2 (to the left), our country profiles according to time management are contrasted. We can see very similar patterns across all four included countries. This result explains why we did not find particular patters between the repeated violations of agreed deadlines and the cultural background of the respective students. For our scenario, the reported missing adherence to deadlines of some students appears to be fully related to the individuals instead of their culture. In these cases, a regulating discussion on the basis of cultural differences would have been meaningless; individual interventions were required. The country profiles according to the group building process (Figure 2, right) show larger diversity and explain the agitation of our German and Turkish students against the centrally organized groups: According to the country profiles, it seems that in both societies, sympathy plays a high role for the choice of group members. As for the items “particular expertise in terms of the group task”, and “avoid repeating bad experiences from the past”, the reactions in all four contexts were similar. According to the choice of group members, the students from Bulgaria appear to be indifferent towards the items “has priorly shown engagement” and “no special demands”. A normal distribution indicates that the particular responses from this context are rather individual than culture driven.

4 Conclusion

Our investigation has shown that the found conflicts in our course can partly be explained with the respective counrty profiles from the LCS. For a subsequent analysis, the profiles proved helpful in terms of an improved apprehension of particular conflict reasons and to decide about appropriate interventions.

Reagrding conflict prognostication, we see difficulties due several reasons when it comes to attitudes that might be expected from individuals: First, as discussed in section 2, driving conclusions from country profiles to indiviuals is anyways problematic. Second, such educational scenarios belong into the context of urban education: In this particular setting, the composition of the audience according to nationalities strongly varies from semester to semester and course to course. Thus, many country profiles are required to cover the potential scenario and the currently relevant ones can only be determined after the registration has been closed. Third, it is yet unclear to which extent immigrants adopt the local culture and if maybe completely new (fusion) cultures emerge. Least, the aim of intercultural work should lead to a reduction of prejudices. Precasting conflicts on this level would mean to agree with stereotypes. Thus, generally designing culture-sensitive education seems to be the best solution for preventing conflicts.

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The OpenupEd quality label: benchmarks for MOOCs

Jon Rosewell[1] *& Darco Jansen*[2]

[1]The Open University, UK
Jon.Rosewell@open.ac.uk
[2]European Association of Distance Teaching Universities, the Netherlands
darco.jansen@eadtu.eu

Abstract: We report on the development of the OpenupEd Quality Label, a self-assessment and review quality assurance process for the new OpenupEd MOOC portal (www.openuped.eu). This process is focused on benchmark statements that seek to capture good practice, both at the level of the institution and at the level of individual courses. The benchmark statements are derived from benchmarks which emerged from the E-xcellence e-learning quality projects. Self-assessment and review is intended to encourage quality enhancement, captured in an action plan. A quality label for MOOCs will benefit all MOOC stakeholders.

Keywords: MOOC, e-learning, quality assurance, distance education

1 Introduction

The rise of MOOCs has been recent and rapid (for an overview, see Daniel, 2012; Yuan & Powell, 2013). By 2012, Daniel and others were noting that the earlier courses based on connectivist learning (cMOOCs) were being joined by large numbers of courses based on a transmission or behaviourist model of teaching and learning (xMOOCs), often delivered through a platform such as Coursera, Udacity and edX. However, questions had begun to be asked about the quality of the MOOC experience (for example, Yuan & Powell, 2013; Haggard, 2013). The massive numbers enrolling were tempered by low completion rates (University of Edinburgh, 2013; Clow, 2013). The rhetoric around MOOCs sometimes makes the claim they will increase access to higher education, but can that be justified if large numbers of MOOC students have the experience of failing to complete their course?

2 The OpenupEd initiative

The OpenupEd initiative was launched by the European Association of Distance Teaching Universities (EADTU) with support from the European Commission on 25th April 2013. It aims to provide a pan-European portal for MOOCs (www.openuped.eu).

OpenupEd promises to bring some distinctive features to the MOOC landscape. The launch partners (see http://openuped.eu/partners/current-partners) can apply their extensive experience of open and distance learning to MOOCs. In addition, OpenupEd partners have a commitment to opening up education to the benefit both of learners and of wider society, while reflecting "European values such as equity, quality and diversity" (Commissioner Vassiliou in European Commission, 2013). To ensure that OpenupEd courses meet this mission, partners are asked to endorse the eight distinctive features described below.

Openness to learners: This captures aspects such as: open entry (no formal admission requirements), freedom to study at time, place and pace of choice, and flexible pathways. In a broader perspective this feature stresses the importance of being open to learners' needs and providing for a wide variety of lifelong learners.

Digital openness: Courses should be freely available online but in addition apply open licensing so that material and data can be reused, remixed, reworked and redistributed (e.g. using CC-BY-SA or similar).

Learner-centred approach: Courses should aid students to construct their own learning from a rich environment, and to share and communicate it with others; they should not simply focus on the transmission of content knowledge to the student.

Independent learning: Courses should provide high quality materials to enable an independent learner to progress through self-study.

Media-supported interaction: Course materials should make best use of online affordances (interactivity, communication, collaboration) as well as rich media (video and audio) to engage students with their learning.

Recognition options: Successful course completion should be recognised as indicating worthwhile educational achievement.

Quality focus: There should be a consistent focus on quality in the production and presentation of a course.

Spectrum of diversity: A course should be inclusive and accessible to the wide diversity of citizens.

A distinctive aspect of OpenupEd is the promise of a quality educational experience that can bridge between informal and formal learning and provide recognition for the student's achievement. This promise is to be encapsulated in a 'quality label'.

3 The OpenupEd Quality Label

The OpenupEd Quality Label is intended to encourage quality enhancement. It was derived from the E-xcellence label (http://e-xcellencelabel.eadtu.eu/) which provides a methodology for assessing the quality of e-learning in higher education (HE). E-xcellence has evolved over a series of projects commencing in 2005 (Williams, Kear, Rosewell & Ferreira, 2011). E-xcellence now provides a series of tools, including a manual (Williams, Kear & Rosewell, 2012) and interactive 'quick scan' self-assessment, that support a review process based around a number of benchmark statements. For the OpenupEd Quality Label, we drafted a revised set of benchmarks and a self-assessment and review process better suited to MOOCs. These were first presented at a master class at the 2013 EADTU conference (http://conference.eadtu.eu/). This draft was updated using feedback gathered at this event, and then made available for further review, with comment invited from OpenupEd partners and E-xcellence assessors. The final version was published in January 2014 (http://openuped.eu/mooc-features/openuped-label) and the benchmarks are listed in Appendix 1 below.

An outline of the OpenupEd Quality Label process is as follows. OpenupEd partners are expected to be higher education institutions (HEI) that meet national requirements for quality assurance and accreditation and that have an internal procedure to approve a MOOC. New partners will obtain the OpenupEd Quality Label by a self-assessment and review process that will consider benchmarks both at institutional and course level (for two courses initially). The HEI should endorse the eight distinctive OpenupEd features listed above; in particular, every MOOC must demonstrate the features 'openness to learners' and 'digital openness'. The OpenupEd Quality Label must be renewed periodically. Between institutional reviews, additional MOOCs will be reviewed at course level only. The institution is expected to evaluate and monitor each MOOC in presentation, providing quantitative data including participation, appreciation, and completion and qualitative assessment regarding equity, quality, and diversity.

The self-assessment and review are focussed around the benchmarks given in Appendix 1. A 'quick scan' checklist is provided (**Figure 1**) which lists the benchmarks with an accompanying grid to record two aspects. First, an overall judgement can be made on whether the benchmark is achieved (on a four-point scale: not achieved, partially achieved, largely achieved, or fully achieved). Secondly, an outline mapping is provided between each benchmark and the eight OpenupEd distinctive features; this can be adapted where necessary. The quick scan can be used to give an initial picture of areas of strength and weakness. It can also highlight: where benchmarks may not be fully appropriate, where they may fail to capture good practice in a particular HEI or MOOC; and where additional detailed indicators might be helpful. The quick scan should then be fleshed out by a more detailed self-assessment process, ideally including different stakeholders such as academics, managers, course designers and students. This should gather evidence for each benchmark including the extent to which they support the distinctive OpenupEd features. A plan detailing improvement actions is then prepared. These two documents form the basis of a final review and discussion with external assessors, who then prepare a final report including their recommendation for the award of the OpenupEd Quality Label.

	Benchmark/indicator		OL	DO	LC	IL	MI	RO	QF	SD		NA	PA	LA	FA
	Course level														
22	**A clear statement of learning outcomes for both knowledge and skills is provided.**	10				x									
23	**There is reasoned coherence between learning outcomes, course content, teaching and learning strategy (including use of media), and assessment methods.**	11			x	x	x		x						
24	**Course activities aid students to construct their own learning and to communicate it to others.**				x										

Figure 1 Part of the quick scan checklist, showing benchmarks, mapping to OpenupEd features, and grid for recording benchmark achievement

A number of documents support this process, including templates for the quick scan checklist, evidence gathering and action plan. Assessor's notes are provided that cross-reference the OpenupEd benchmarks to additional indicators and background material in the E-xcellence manual (Williams, Kear & Rosewell, 2012), with supplementary material provided for MOOC-specific aspects where necessary. It is anticipated that this documentation will be extended in the light of experience.

4 Conclusion

The OpenupEd Quality Label is an attempt to address a criticism of MOOCs: they may offer a poor quality educational experience. The OpenupEd label it should benefit all stakeholders in MOOCs. Students can be reassured about the experience they are committing to. Employers can recognise the content and skills demonstrated by a MOOC certificate. MOOC authors can achieve recognition for their input. Institutions can protect their brand reputation. Funders can be reassured that products are worthwhile. Quality agencies, who work on behalf of all the above parties, may find their task eased.

5 Acknowledgements

We would like to thank our colleagues, Keith Williams and Karen Kear, and all others who commented on drafts of the OpenupEd Quality Label.

6 Appendix: OpenupEd quality benchmarks

Institutional level

Strategic management

1 The institution has a MOOC strategy that relates to its overarching strategies for e learning, open education and open licensing.

2 Research and monitoring of developments in education and technology inform the design of MOOCs. There is an organisational framework to foster this.

3 The institution has a strategy for the appropriate resourcing of MOOC development. It has a business model, appropriate to the institutional mission that addresses the sustainability of MOOCs.

4 The institution has a service relationship to MOOC participants that addresses ethical and legal dimensions including accessibility and data protection.

5 Collaborative and partnership activities have clearly defined roles and responsibilities and operational agreements exist where appropriate.

Policies exist to cover issues such as intellectual property rights and open licensing.

6 The institution has a quality policy that relates to national frameworks, and the MOOC offering is related to that policy.

Curriculum design

1 The institution makes explicit the relationship between its MOOC portfolio and its mainstream curriculum.

2 The MOOC portfolio provides for the development of students' cognitive skills, key/transferrable skills, and professional/practical skills in addition to knowledge and understanding.

3 Course design

4 The institution provides templates or guidelines for layout and presentation of MOOCS to support consistency across the portfolio. These templates have the flexibility to accommodate a range of teaching and learning methods.

5 Course materials, including the intended learning outcomes, are regularly reviewed, up-dated and improved using feedback from stakeholders.

6 The institution specifies an open licence for MOOC components, and has a mechanism to track intellectual property rights.

Course delivery

1 The MOOC platform is reliable, secure and assures appropriate levels of privacy. Provision is made for system maintenance, monitoring and review of performance.

2 The MOOC platform provides a range of online tools which are appropriate for the educational models adopted.

3 Mechanisms exist to monitor and evaluate MOOCs using quantitative and qualitative approaches.

Staff support

1 The institution provides appropriate training for academic and support staff to develop the skills required to develop and deliver e learning.

2 Educational research and innovation in e learning are regarded as high status activities. There are mechanisms for the dissemination of good practice.

3 The institution provides adequate support and resources to MOOC staff and manages workloads appropriately.

Student support

1 MOOC students are provided with clear and up-to-date information about courses including aims/objectives, learning and assessment methods, workload and prerequisite knowledge. Where possible, courses should be related to national or European academic frameworks or specifications.

2 The rights, roles and responsibilities of MOOC students and those of their institution are clearly stated.

3 The institution uses social networking to foster academic communities among MOOC students.

4 MOOC students have clear routes to academic, technical and administrative support. The level of support provided by the institution is clearly stated.

Course level

1 A clear statement of learning outcomes for both knowledge and skills is provided.

2 There is reasoned coherence between learning outcomes, course content, teaching and learning strategy (including use of media), and assessment methods.

3 Course activities aid students to construct their own learning and to communicate it to others.

4 The course content is relevant, accurate, and current.

5 Staff who write and deliver the course have the skills and experience to do so successfully.

6 Course components have an open licence and are correctly attributed. Reuse of material is supported by the appropriate choice of formats and standards.

7 Courses conform to guidelines for layout, presentation and accessibility.

8 The course contains sufficient interactivity (student-to-content or student-to-student) to encourage active engagement. The course provides learners with regular feedback through self-assessment activities, tests or peer feedback.

9 Learning outcomes are assessed using a balance of formative and summative assessment appropriate to the level of certification.

10 Assessment is explicit, fair, valid and reliable. Measures appropriate to the level of certification are in place to counter impersonation and plagiarism.

11 Course materials are reviewed, updated and improved using feedback from stakeholders.

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Assuring Quality in Post-Traditional Higher Education

Sir John Daniel, Stamenka Uvalić-Trumbić

Academic Partnerships
#205-3133 Cambie Street, Vancouver, BC, Canada,
odlsirjohn@gmail.com

Abstract: At the 2013 Efquel Conference we presented a *Guide to Quality in Online Learning* that we had published with Academic Partnerships, Inc. That Guide focused primarily on formal online courses and programs leading to credit and conventional credentials. However, the steady expansion of online learning in regular programs is also accompanied by the multiplication of alternatives to traditional courses and credentials. We call these alternatives 'post-traditional online education'. We are now preparing a second guide, which we seek to present at LINQ/EIF 2014, on *Quality in Post-Traditional Online Higher Education*. It provides a roadmap of the issues generated by the concepts of openness and post-traditional online higher education, suggesting how universities can embrace greater openness without sacrificing their reputation for quality. It refers to similar international initiatives, such as the 'quality platform' being developed by the International Quality Group of the US Council for Higher Education Accreditation.

Keywords: online learning, post-traditional higher education, massive open online courses, open badges, open educational resources, open learning, open educational practices, quality assurance, open access, open data, accreditation, access, quality platform

1 Introduction

In 2013 Academic Partnerships published, in English and Chinese, a *Guide to Quality in Online Learning* developed by an international team (Academic Partnerships, 2013). That first Guide, which focused primarily on formal online courses and programs leading to credit and conventional credentials, was described and distributed at the 2103 Efquel conference in Barcelona. However, the steady expansion of online learning in regular programs is also accompanied by the multiplication of alternatives to traditional courses and credentials. We

designate these alternatives as 'post-traditional online higher education'. A common purpose in these post-traditional innovations is greater openness.

This second guide, which we shall present at LINQ/EIF 2014, provides a roadmap of the issues generated by the concepts of openness and post-traditional online higher education, suggesting how universities can embrace greater openness without sacrificing their reputation for quality. It refers to similar international initiatives, such as the 'quality platform' being developed by the International Quality Group of the US Council for Higher Education Accreditation (CHEA, 2014).

The guide adopts the format of 'Frequently Asked Questions' as a simple mechanism for readers to engage with the central arguments.

Topics include:

1. Is post-traditional higher education always informal, or can it lead to awards?
2. What are the main dimensions of openness?
3. What are the key terms and what do they mean (Open Access, Open Data, Open Source Software, Open Educational Resources, Massive Open Online Courses (MOOCs), Open Badges, Open Educational Practices, Open Learning)
4. Does openness undermine or transform the core educational function of higher education institutions?
5. In what ways can use of open educational resources and MOOCs be leveraged to improve the quality of higher education programmes and courses?
6. Do open approaches to accreditation offer meaningful opportunities for expansion of access to quality higher education?
7. What are the key policy considerations for universities as they engage with the challenges and opportunities created by openness?

This paper begins with three examples of post-traditional higher education that are addressed by the second Guide, free copies of which will be available to delegates at the conference. In the last part of the paper we describe a more general approach to the quality assurance of post-traditional higher education that will be the subject of a workshop at the conference.

2 Open Educational Resources (OERs)

Much effort has been devoted to the quality assurance of OERs all around the world. The 2012 Paris Declaration on OER (UNESCO, 2012) urged greater attention to this issue. The fundamental challenge is that since OER are intended

to be adapted, modified, remixed and reused, it is not appropriate to focus quality assurance mainly on the initial product. Quality assurance should focus primarily on the process by which a particular OER is developed, since this gives users the assurance it can be a solid starting point for their own adaptations.

From the users' point of view the relevance of an OER is often more important than some abstract notion of its quality. For example, a high-quality OER on a topic in second-year university physics may not be relevant or useful to a teacher looking for material for use in secondary school physics. This means that particular care should be taken over the descriptors of OER so that web-search facilities can turn up the most useful OER for a particular enquiry.

3 MOOCs (Massive Open Online Courses)

MOOCs are in a state of rapid evolution. The previous comments about OER are relevant to those MOOCs that do not carry formal assessment, although not all MOOCs are openly licensed as OER. However, because MOOCs are labelled as courses, learners come to them with higher expectations of guidance and signposting than they would bring to an OER.

In her interesting account of her experience as a learner in a variety of MOOCs Bali (2014) emphasizes this point strongly. She took four Coursera MOOCs and 'dropped in' on several others.

Her aim was to evaluate MOOC pedagogy based on approaches often used to evaluate conventional higher education, rather than distance learning. For this she drew principally on Bloom's taxonomy and Chickering and Gamson's (1987) "Seven Principles of Good Practice in Undergraduate Education". She was surprised by the variability of the expectations that the MOOCs she took made on learners. Some attempted to encourage higher order thinking but quizzes simply testing recall were more common. Rarely did courses take advantage of the potential for student interaction: 'forums were not mediated, nor were "netiquette" guidelines provided, which is important according to Butcher and Wilson-Strydom (Academic Partnerships, 2013), and so there were instances of tension and even rudeness among students in several courses'.

The fundamental point here is that university brand is often used as a surrogate for MOOC quality. But as MOOCs multiply learners are becoming more sophisticated and can share experiences of studying MOOCs on social media. There is a growing realization that a university can damage its brand by offering

poor quality MOOCs. Ways to assess the intrinsic quality of a MOOC, instead of considering simply the 'brand image' of the offering institution, would be helpful.

4 Open Badges

From the perspective of post-traditional higher education, badges open up the higher education enterprise by enabling any individual or organisation to offer learning opportunities and provide certification for them (www.openbadges.org). The warning *caveat emptor* (buyer beware) should therefore be borne in mind in assessing a particular badge. Nevertheless, from the perspective of quality open badges have the advantage, since they are web-based, of offering more information about the processes of learning and assessment leading to the badge than one would get from a standard paper transcript or certificate. The badge gives details of the learning opportunity, how learning was assessed, and can also list the employers or professional organisations that endorse the badge as demonstrating competency in a particular area.

The authors have been involved in the interesting exercise of helping the DeTao Masters Academy (www.detoama.net) to introduce badges to China. This is a good example of the usefulness of badges in expanding opportunities for higher learning. DeTao's core mission is to provide training and professional development to professionals at the peak of their careers in order to hone their skills of pioneering advanced innovation. DeTao does not have, nor does it seek, the power to award conventional qualifications, yet its learners seek some certification of the competencies they have acquired through DeTao study. Badges fit the bill perfectly. DeTao is also using them to recognise the skills learned by students in enriched programmes in Film Animation and Industrial Design that it offers alongside the conventional courses in these disciplines of the Shanghai Institute for Visual Arts. For these purposes DeTao has developed rigorous processes for the definition and awarding of the badges.

5 The CIQG Quality Platform

We have given three particular examples of post-traditional higher education, OER, MOOCs and Open Badges and noted various quality considerations. However, as well as examining the processes and products of such innovations it would clearly be helpful to have a more general framework for approaching

quality in post-traditional higher education. This could enable any organisation using a range of post-traditional approaches to gain assurance that its processes are likely to ensure quality products and learning opportunities.

One of the authors (SUT) is Senior Advisor on International Affairs to CHEA, the US Council for Higher Education Accreditation and helped to launch its International Quality Group (CIQG) last year (CHEA, 2014). The Group has global outreach and is open to membership from higher education stakeholders worldwide.

To address the quality implications of post-traditional developments in higher education CIQG is piloting a "quality platform" to review the quality of post-traditional provision.

Such reviews would begin by judging the provision against its primary purposes: what is it offering to the student? They could use standards to judge the provider's success with regard to student learning and might benchmark the capacity of provider and its performance in relation to comparable providers. Peers with expertise in this non-traditional sector would conduct the reviews. A provider that successfully completes the review would be identified as a "Quality Platform Provider."

Colleges and universities could use the Quality Platform designation as an indicator of quality when considering the award of credit or recognition for various post-traditional learning experiences. Quality assurance agencies could refer the Quality Platform in reviews of these providers that they might conduct.

6 Conclusions

The *Guide to Quality in Post-Traditional Online Higher Education* is a still a work in progress at the deadline date for this paper submission. However, the full Guide will be ready and available at the conference and the presentation of this paper at the conference will reflect that. This summary paper has given examples of how quality assurance might address the challenges posed by three manifestations of post-traditional higher education. It has also described the development, by the International Quality Group of the Council for Higher Education Accreditation, of a more general mechanism for the quality assurance of post-traditional higher education.

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Evaluation of early childhood education quality across Europe*

Grammatikopoulos[1], V., Gregoriadis[2], A., Liukkonen[3], J., Zachopoulou[4], E., Gamelas[5], A., Leal[5], T., Pessanha[6], M., Barros[6], S.

[1]University of Crete, Greece
gramvas@uoc.gr
[2]Aristotle University of Thessaloniki, Greece
asis@nured.auth.gr
[3]University of Jyvaskyla, Finland
jarmo.liukkonen@jyu.fi
[4]Alexandrio Technological Educational In stitute of Thessaloniki, Greece
ezachopo@bc.teithe.gr
[5]University of Porto, Portugal
anavgamelas@gmail.com,
[6]Polytechnic of Porto, Portugal
Pessanha@ese.ipp.pt, silviabarros@ese.ipp.pt

Abstract: The aim of the current study was to present the initial results of the evaluation of early childhood education (ECE) quality in six European countries. This study discusses various aspects of the ECE quality in different educational systems. Such comparisons can create a fertile ground for communication and collaboration among the educational communities of different European countries and promote open education. Implications and future recommendations are also discussed.

Keywords: educational evaluation, early childhood education quality, teacher training

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1 Introduction

The Universal Declaration of Human Rights and the Convention on the Rights of the Child (UN, 1989) have stated that children have a right to receive

education, and Early Childhood Education (ECE) is included in it. ECE is of great value to all children and should be available to all. It provides a sound basis for learning and contributes to the development of social skills, personal competence, confidence and a sense of social responsibility. Hence, every child, including those from deprived socio-economic backgrounds and other underprivileged groups, should have access to early education services of good quality (Urban, 2009).

Early childhood researchers have accumulated an enormous range of research over the last decades about the long-term developmental benefits of qualitative early childhood environments (e.g. Barnett, Carolan, Fitzgerald, Squires, 2012; OECD, 2012). Internationally, early childhood education has received unprecedented attention in the public and political sphere in recent years-but mostly for economic reasons. The link between the Lisbon Strategy of the European Union and the Barcelona childcare targets is a clear example for this rational.

At a European Union level, ECE is characterized by diversity and complexity. Quality concerns still exist in many European countries due to a variety of reasons, such as the existence of split systems between education and care (e.g. care and education are integrated unitary in some occasions and are split on age lines in others), the uneven level of staff qualifications (e.g. in some countries early childhood educators have a three or for year bachelor degree while in others they have a two year college diploma), and the differences in the content and the length of the curricula (some countries have national early childhood curricula and others only some general guidelines).

The notion of quality in early childhood education is strongly linked with socio-cultural expectations and covers a wide area of the educational procedure (structural quality -including workforce- educational concept and practice, interaction or process quality, educational concept and practice (curriculum), child-outcome quality, etc.). That is why data, monitoring and assessment systems that meet the accountability needs of policy makers, the pedagogical needs of teachers and the varied developmental needs of young children are considered necessary for an effective understanding of the strengths and weaknesses of the early childhood education environments. Where the children are concerned, adults at both policy and classroom levels need to have a basic understanding of how young children learn and of appropriate outcomes from early childhood programmes (WCECCE Report, 2010).

Today, Europe is more diverse than ever. The wealth of traditions, experiences, practices and aspirations must be seen as an asset for the future

development of the European educational systems. European diversity is, on the other hand, reflected in stark inequalities in the quality of early childhood education environments between and within its countries and regions.

A valuable aid for examining and understanding the diversity and complexity of early childhood education in Europe are cross-national and cross-cultural studies among European countries. Despite the contextual differences, there are nevertheless certain similarities in the early childhood programs and environments (Sheridan, Giota, Han, Kwon, 2009). One apparent commonality refers to the existence of widely accepted values that are crucial to children's learning and wellbeing (UN, 1989). Comparative studies on a cross-national level highlight the importance of policy inputs, such as expenditure on children, policies for children's wellbeing, inclusion, and high quality learning environments.

Valid comparable data are better provided by a common measure. Thus, in the current project it was decided that all participating countries would use the Early Childhood Environment Rating Scale-Revision (ECERS-R; Harms, Clifford, & Cryer, 2005) for the evaluation of the ECE quality. ECERS-R is a widely used instrument with sound psychometric properties. It was developed in the USA in the early 1980s and has since been used in more than 20 countries worldwide, gaining an extensive international reputation.

The purpose of the current study was to present the results of the ECE quality evaluation of the six participating countries (Greece, Finland, Denmark, Portugal, Cyprus, Romania) in the project “Early Change.” The assessors in the six European countries were not controlled for interrater reliability, and their training did not include field observations. Thus, this study only examines from a qualitative perspective the scores of ECERS-R by presenting tendencies and not actual quantitative scores. Such results can initiate a dialogue about the differences and similarities in the provision of European ECE quality, and can promote cross national efforts towards a more unified European Open Education.

2 Method

Participants

The participants of the current study were 546 early childhood classrooms from six European countries (Greece = 126, Cyprus = 52, Finland = 98, Denmark = 70, Romania = 128, & Portugal = 72). These classrooms were evaluated during

the school year 2012-2013 and randomly selected from the municipalities and educational districts that were partners in the project "Early Change."

Instruments

The Early Childhood Education Rating Scale-Revision (ECERS-R) was used as the evaluation instrument of the current study. ECERS-R (Harms et al., 2005) is an observation instrument widely used since the early 80s. It comprises of 43 items and over 470 indicators and it is considered as a valid and reliable measure to capturing the quality provided in ECE settings. The ECERS-R consists of 43 items, organized under seven subscales that include 470 indicators. In the current project the seventh subscale (Parents & Staff) was not used after the suggestion by the authors of the scale. For a detailed presentation of the six subscales and the 37 items of the ECERS-R see Table 1.

Table 1. Subscales and items of the ECERS-R

Subscales	Items
Space & furnishings	1. Indoor space
	2. Furniture for routine care, play and learning
	3. Furnishings for relaxation and comfort
	4. Room arrangement for play
	5. Space for privacy
	6. Child-related display
	7. Space for gross motor ability
	8. Gross motor equipment
Personal care routine	9. Greeting/departing
	10. Meals/snacks
	11. Nap/rest
	12. Toileting/diapering
	13. Health practices
	14. Safety practices
Language-Reasoning	15. Books and pictures
	16. Encouraging children to communicate
	17. Using language to develop reasoning skills

	18. Informal use of language
Activities	19. Fine motor
	20. Art
	21. Music/movement
	22. Blocks
	23. Sand/water
	24. Dramatic play
	25. Nature/science
	26. Math /number
	27. Use of TV, video, and/or computers
	28. Promoting acceptance of diversity
Interaction	29. Supervision of gross motor activities
	30. General supervision of children (other than gross motor)
	31. Staff-child interactions
	32. Interactions among children
Program structure	33. Schedule
	34. Free play
	35. Group time
	36. Provisions for children with disabilities

Procedures

The trained observers were evaluated the ECE classrooms between October 2012 and June 2013. They made day visits in the ECE centres and evaluated each classroom per day by observing the daily activities for at least three hours. Immediately after the completion of the observation in each ECE centre, they filled in the score sheet of the ECERS-R and concluded the centre evaluation. The assessors in each country followed the same procedure the same procedure for every classroom.

3 Results

The results of the ECE classrooms' evaluation of the six participating countries are presented in Table 2. A more "qualitative" procedure was adopted to present the evaluation results, as it was decided not to present mean scores due to limitations in training procedure.

Table 2. Ranking of the ECERS-R subscales from highest to lowest score in each country

High to low	Greece	Cyprus	Finland	Denmark	Romania	Portugal
1	Interaction	Interaction	Interaction	Interaction	Interaction	Interaction
2	Language & Reasoning	Personal care routines	Program structure	Space & furnishings	Space & furnishings	Language & Reasoning
3	Personal care routines	Space & furnishings	Personal care routines	Language & Reasoning	Personal care routines	Space & furnishings
4	Program structure	Language & Reasoning	Language & Reasoning	Personal care routines	Activities	Program structure
5	Space & furnishings	Program structure	Space & furnishings	Program structure	Language & Reasoning	Personal care routines
6	Activities	Activities	Activities	Activities	Program structure	Activities

In all six European countries the subscale valued higher was the "Interaction" subscale. In five countries the subscale valued lower was the "Activities" subscale (in Romania was at fourth place). The subscale "Language & Reasoning" was valued as second best in two countries (Greece & Portugal), as third and fifth best in one country (Denmark & Romania respectively), and as fourth best in two countries (Cyprus & Finland). The subscale "Personal Care Routines" was valued as third best in three countries (Greece, Finland, Romania), as second best in Cyprus, as fourth best in Denmark, and as fifth in Portugal. The subscale "Program Structure" was valued as fourth best in Greece and Portugal, at fifth place in Cyprus and Denmark, at the last place in Romania, and surprisingly at the second best place in Finland. Finally, "Space & Furnishings" was rated at the second place in Denmark and Romania, at the third place in Cyprus and Portugal, and at the fifth place in Greece and Finland.

4 Discussion

The methodological limitation of the lack of interrater reliability among the trained observers led the researchers to follow a different approach while examining the results. Instead of presenting quantitative scores and comparing means, it was decided to proceed to a comparison of the ranking of the different subscales in each country's scores. This was a way to overcome the "bias" issue. It was assumed that if an educator/assessor would be biased, then he/she would be equal biased for all the subscales and items. Thus, the internal ranking of the subscales in each country would be considered valid. Based on the results, the most interesting finding is that in all six countries the subscale "Interaction" was valued as the best, and that in five countries (except Romania) the "worst" subscale was "Activities."

The quality of classroom interactions with an emphasis on the teachers' interactions with children has been shown to be a critical mechanism by which children develop (Pianta, Belsky, Houts, Morrison, & the National Institute of Child Health and Human Development Early Child Care Research Network, 2007). Domains of classroom interactions (e.g. instructionally supportive interactions, organizational interactions, emotionally supportive interactions) have been positively related to children's academic gains (Curby, Rimm-Kaufman, & Ponitz, 2009). A possible explanation about the highest ranking of "Interaction" in the six participating countries could be that interpersonal relationships and the socioemotional support and development of children have traditionally been a basic element of the European culture. For example, the Nordic countries paradigm is focused much more in the socioemotional development of children, their autonomy, their self-regulation and the development of their social skills in comparison with the Northern American early childhood education. An additional reason could be attributed also to the teachers' high level of education (bachelor degree), as many studies revealed the merit of having a bachelor degree for ECE educators (Boyd, Goldhaber, Lankford, & Wyckoff, 2007; Burchinal, Roberts, Riggins, Zeisel, Neebe, & Bryant, 2000; Croninger, Rice, Rathbun, & Nishio, 2007; Early, Bryan, Pianta, Clifford, Burchinal, Ritchie, Howes, & Barbarin, 2006).

Another interesting finding was that in five out of six countries the "activities" subscale received the lowest scores comparing with the other subscales. A possible interpretation of this result could be based on the lack of specific "activities" in some countries. For example, in Greece, Portugal, and Cyprus there isn't any provision for "sand/water" activities indoor or outdoor. An overall finding was also that "nature/science" and "promoting acceptance of diversity" activities were underdeveloped. Thus, the total scores for the subscale

"activities" were the lowest in five out of six countries. Of course, these results were based on educators' observations only, and thus in order to draw firm conclusions further research will be needed. Generally, it can be argued that the diverse and low scores for the "activities" subscale reveal some differences between the US and European approach to ECE.

The main limitation of the study was that the assessors were not received a full training and hence, the results have to be treated with caution. Further cross-national studies have to include a full training for the assessors to be able to direct compare the ECERS scores. Moreover, these studies could initiate a discussion about the similarities and differences in ECE in Europe and develop a body of knowledge on which can be based a discussion in common language across Europe for the ECE future.

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Who gets added value from our education? Implementations of Innovation Pedagogy in Bachelor's and Master's Education in Turku University of Applied Sciences

M. Soc. Sc (econ) Harri Lappalainen, PhD Pia Suvivuo

Turku University of Applied Sciences ltd
Sepänkatu 1 20700 Turku Finland
harri.lappalainen@turkuamk.fi

Abstract: Innovation pedagogy is a learning approach which opens up education for stakeholders outside of the academia. The core of innovation pedagogy lies in emphasizing interactive dialogue between the educational organization, students, and surrounding working life and society. While enhancing their substance-related and innovation competencies, students produce value adding outputs and results also to other organizations. In this paper we will present two selected Educational Research, Development and Innovation Methods (ERDIM), used in Turku University of Applied Sciences (Finland). Even though almost all main characters of the methods differ - e.g. background discipline, degree level, age of students, ways to carry out the model, scope of the project - the outputs and results serve widely different stakeholders similarly.

Keywords: Innovation pedagogy, innovation competencies, project work, real assignments, learning, collaboration with stakeholders

1 Introduction

A close collaboration with relevant stakeholders is one of the main emphases in universities of applied sciences. In this paper we illustrate how higher education can be organized to produce both learning outcomes for students and also value adding outputs for companies and other working life organizations (public, NGOs). These results can be achieved by implementing Innovation Pedagogy as a learning approach and strategy. Presented are two examples that demonstrate how TUAS opens up education and especially its outputs also to stakeholders outside of the academia. Both models have been

implemented but in a continuous development mode according to the principles of Plan-Do-Check-Act cycle (Moen, Norman 2011).

2 Innovation Pedagogy as a learning approach

Universities of applied sciences in Finland were established at the beginning of the 1990s to support regional development. The pedagogical approaches of traditional research universities were not suitable for the universities of applied sciences. Therefore, Turku University of Applied Sciences (TUAS) developed innovation pedagogy to promote innovations and regional development. (Kettunen, 2009, 2011).

The core of innovation pedagogy lies in emphasizing interactive dialogue between the educational organization, students, and surrounding working life and society. Its conceptual core can be divided into three different spheres in parallel to the three major actor groups benefiting from innovation pedagogy:

- Identifiable learning outcomes, creation of innovations and produced capability to participate in diverse innovation processes – having primarily to do with students, who are expected to create innovations while affiliating with working life
- Learning of innovation competences alongside study programs utilising specific knowledge, skills and attitudes – being mostly connected with working life, which provides students with ideal surroundings to acquire the competences needed in innovation processes
- Meta-innovations – referring to methods of learning and teaching utilized in the learning processes by the faculty members together with the students. (Penttilä, Kairisto-Mertanen & Putkonen, 2011).

All Faculties of TUAS are interdisciplinary and it makes our university an excellent platform to boost students' innovation competencies. We in TUAS have divided innovation competencies into three main categories:

- Individual innovation competencies; e.g. problem solving and analytical thinking skills
- Interpersonal innovation competencies; e.g. group working skills
- Networking innovation competencies; e.g. making and utilizing connections outside of one's own circle of acquaintances

All these three categories are highly appreciated by employers and therefore we should – in addition to discipline-related contents – focus more actively in increasing these competencies in all higher education programs. (Kairisto-Mertanen et al. 2011).

3 Comparison of two active learning methods of TUAS

In TUAS there are several different methods and models in carrying out joint open learning with working life organizations, jointly named as ERDIM (**E**ducational **R**esearch, **D**evelopment and **I**nnovation **M**ethods). In this chapter we will present two selected models: Project Hatchery and The Master's Thesis as development project. Even though almost all main characters of the models differ - e.g. background discipline, degree level, age of students, ways to carry out the model, scope of the project - the outputs and results serve widely different stakeholders similarly (table 1).

Degree level	Study unit	Credit units	Duration	Type of studies	Students	Outputs/ results
Bachelor	Project Hatchery	3	3,5 months	Group work	Young adults (ages 18-)	For stakeholders or own RDI
Master	Master degree thesis	30	1,5 - 2 years	Indivi-dual work	Adults, health care profs	For stakeholders or own RDI

Table 1: Comparison between selected two learning methods in TUAS.

3.1 Project Hatchery

At the Faculty of Technology, Environment and Business (TEB) of TUAS, one of the methods for applying and carrying out education according to the principles of innovation pedagogy is a method called hatchery work. It combines real life assignments, peer counselling and working in cross-disciplinary groups. (Kairisto-Mertanen et al. 2012). There are several different types of hatcheries and the first one in a chronological order of studies is called Project hatchery.

Project hatchery was initially launched at 2008 and it is a compulsory study unit for all first year Bachelor's degree students in TEB. There are almost 45 Project hatcheries operating every autumn, involving around 450 first year students, 45 upper grade students and 15 teachers. All Project hatcheries are multidisciplinary, consisting of students from almost ten different degree programmes (e.g. engineering, sales, design). Every hatchery is mentored by a teacher (each teacher has 3-4 hatcheries to guide) and tutored by an upper grade student. The role of student tutors is significant in every-day guidance and also in mental support. As a reward student tutors get credit units and a testimonial for their work.

Project hatchery operates for 3,5 months and during that period participating students are obligated to plan, implement, report and present their work. Hatcheries have compulsory weekly meetings and between them students work with assignments when not having any other lessons. All hatcheries get an assignment – based on existing real need – either from companies, other working life organizations or from our university's RDI projects. Variation of assignments is huge and here are just three different examples of topics: organising a party for students; conducting a market research for a company; making a dry sanitation guide for a village in Swaziland. Most often also the owners or origins of assignments get real added value.

3.2 The Master's Thesis as development project

In the curricula the objective of master's thesis is to develop and demonstrate the student's ability to apply research data and use selected methods in identifying and solving working life problems as well as competence for demanding independent specialist work. The development project is approached purposefully with the methods of applied research. It focuses on a subject that has relevance from the perspective of working life. (Ahonen, 2007; Ahonen, 2013). Students in master degree programmes in Health Care Faculty are health care professionals like nurses, midwifes, oral hygienists and physiotherapists who have worked at least three years after bachelor degree. The process of master degree thesis takes 1,5 - 2 years and it consists 30 credits.

The master's thesis in the faculty of Health Care is undertaken in situ as a final development project, which outlines a project-learning environment according to the Tripartite Model. The role of the **Master's degree student** is to study skills in project leadership and management to be capable to act as a project manager. The student is responsible for launching the project, creating and leading the project organization, drafting of the project plan, project

progress and change management in the project as well as development results achieved. **Project steering group** is formed by working life mentor, the tutor teacher, and other relevant background organization participants. It guides, facilitates and supervises the process of the development project based on one's expertise. (Ahonen, 2013).

The development projects in the Faculty of Health care can be implemented in working life organizations like hospitals, clinics, primary or specialized health care units, communities, private and voluntary organizations or other working life partners. Master's degree students in Health Promotion Programme have produced different outcomes as a part of their Master's thesis: for example a functioning model for the preventive family care system in Turku (Bäcklund, 2013), a description of midwifery competence in the care of pregnancy and delivery in Hospital District of Southwest Finland/Turku University Hospital`s Medicine department (Lounela, 2013) and a health promotion´s annual plan in Rauma Social Affairs and Health Agency (Sillvan, 2013). These outcomes have answered to the developmental needs of working life organizations.

3.3 Benefits from selected two learning environments

The collaboration between TUAS and working life organizations lead to open learning among and between all participants. In addition to credits and final degrees, students learn essential skills needed in working life and in development work. An important element is students' participation in planning and setting goals for their learning as well as for their projects. The active role of students in problem solving allows students self-determined and interest-guided learning. These are important steps in enhancing individual level innovation competencies.

Project hatchery and Master's thesis both include different types of teamwork. Traditionally – in primary education as well as in upper education levels – learning assignments have been mostly based on individual level work. However, most often in real working environments assignments are implemented by teams. Transmitting ideas effectively, listening to others, taking initiatives and driving others to act are not necessarily endogenous charasteristics. Therefore it is vital to have a chance to enhance these interpersonal innovation competencies already during higher education studies.

Dialogue - based on each one's expertise and profession - can accomplish new ways of thinking and learning to all parties: students, teachers and working life representatives. Teachers will acquire up-dated working life knowledge and

practices. They can strengthen and wider their networks that can be utilized in teaching and guidance of students. Vice versa, working life organizations will receive most recent results from university's RDI operations. Differences in experiences, backgrounds, interests and competencies between participants make multi-professional, multidimensional and collaborative open learning possible. Active cooperation with local, national and international level stakeholders enhances all actors networking innovation competencies.

Utilization of these two learning environments lower students' threshold to the working life. Students can create basis for future career by creating contacts and networks for the future and allows students to "sell" their know-how for employers as part of studies. Working life organizations get to know students - their potential becoming workers - early enough to recruit "best ones". Narrowing the gap between education and working life makes recruitment easier and cheaper and it may gain positive impact to employment.

The results & products of Project hatcheries and Master's final thesis vary by their content, extent and ways of accomplishment. However, they bring solutions and responses for real challenges and needs of working life. Products serve both educational and practical working life as well as academic ends.

Following table (table 2) demonstrates the wide range of benefits – based on feedback data - to different stakeholders when applying innovation pedagogy methods:

Target group	1	2	3	4	5	6	7
Students	X	X	X	X	X	X	
Working life organizations/professionals		X	X	X	X	X	X
University/teachers		X	X	X	X	X	(X)

Table 2: Benefits of presented innovation pedagogy methods to different stakeholders (*1=Credit units, 2=Project skills (administrative), 3=Individual innovation competencies, 4=Interpersonal innovation competencies, 5=Networking innovation competencies, 6=New networks, 7=Outputs)*

3.4 Assessment of learning outcomes

The planning of a curriculum design includes the setting of learning objectives and intended outcomes, which in turn gives way to the selection of teaching methods and the design of assessment tasks that will lead to the expected outcome, as in the case of innovation competence development. (Watts et al., 2013).

Traditionally it has been challenging to assess learning outcomes, which are not related to certain disciplines or subjects. There are only very limited number of reliable tools to assess e.g. innovation competencies. TUAS – with its three European partners: Karel de Grote Hogeschool, Universitat Politècnica de València, Hochschule für Angewandte Wissenschaften Hamburg - has just at November 2013 released a tool to measure changes in students' innovation competencies and therefore show the added value of selected teaching and learning methods and processes.

The new tool, the Innovation Competencies Development Barometer (INCODE barometer), takes along all main stakeholders to the evaluation process; students will make self-evaluation, co-students carry out peer evaluation and teachers are responsible for expert level analysis. The INCODE barometer also makes possible to involve experts outside of the higher educational organizations more actively to the pedagogical development processes. When using the barometer, the role of company representatives includes assessing the performance of students during the execution of education. This gives more value for the whole teaching and learning process. In addition to multi-level evaluation process, the INCODE barometer differs from other leading tools on the same theme (e.g. The Collegiate Learning Assessment CLA, developed in USA) by concentrating in assessing behavior while other tools are mainly based on written tests. (Kairisto-Mertanen et al., 2013).

We have used INCODE barometer to measure changes in students' innovation competencies in Project hatchery as well as in Master's thesis. Measurements are still going on and during the LINQ 2014 conference we can present at least some preliminary results, conclusions and recommendations.

4 Discussion

The TUAS' two different open learning models, Project hatchery and Master's thesis as development project are effective methods for enhancing competencies and even new innovations. According to open learning concept, these models broaden access to the benefits of the learning offered through formal education systems. They also eliminate barriers that can preclude both opportunities and recognition for participation in institution-based formal learning. Learning from the real working-life experiences results the solutions of real problems by means of active inquiry and experience, not by memorization and recitation.

One future challenge is to increase the international aspect in these methods. There are already some preliminary plans for that and first experiments will take place already during autumn 2014.

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Semantic Pathways for Geospatial Thinking

Marinos Kavouras[1], Sofoklis Sotiriou[2], Alkyoni Baglatzi[1], Nancy Darra[1], Margarita Kokla[1], Aggelos Lazoudis[2], Katerina Pastra[3], Eleni Tomai[1]

[1] National Technical University of Athens, Greece
mkav@survey.ntua.gr, baglatzi@mail.ntua.gr, nancyd@central.ntua.gr, mkokla@survey.ntua.gr, etomai@mail.ntua.gr
[2] Ellinogermaniki Agogi, Greece
sotiriou@ea.gr, aggelos@ea.gr
[3] Cognitive Systems Research Institute, Greece
kpastra@csri.gr

Abstract: Geospatial thinking is a newly acknowledged ability with profound and rewarding effects on numerous aspects of everyday life and science - from giving and following directions and interpreting maps and diagrams, to achieving innovation in STEM disciplines. The GEOTHNK approach aims at enhancing geospatial thinking skills and engaging users in meaningful, inquiry-based learning experiences. The main outcomes are: a) a methodological approach for the interdisciplinary organization and semantic linkage of knowledge, and b) an innovative ICT-based approach and an open, collaborative, web-based learning environment. The GEOTHNK approach, with its transversal and transnational character, will facilitate the development of a variety of geospatial learning paths inclusive of area-specific landscape and climate idiosyncrasies, as well as other natural phenomena with complex socio-economic effects and strong cultural and historical ties.

Keywords: geospatial thinking, semantic pathways, open education, pedagogy, learning models, authoring tool.

1 Introduction

Research results stress the rewarding effects of developing geospatial skills in increasing the participation in STEM disciplines, lacking of which acts as a barrier for students leading them to dropout (Utal & Cohen, 2012). Even more, spatial thinking is a vital talent for achieving STEM innovation, however due to being neglected by educational systems it has been missed (NSF, 2010).

Lately, spatial thinking has also been acknowledged as highly relevant to social sciences and humanities (Goodchild & Janelle, 2010), as well as critical for several tasks required in daily life, such as giving and following directions, navigating in known and unknown spaces, and interpreting images, graphs, and diagrams. Furthermore, understanding central visual-spatial notions such as scale and generalization finds also its cognitive analogy to the way people learn, communicate, or deal with (not necessarily spatial) everyday life issues. It actually constitutes a very important and new approach to learning (learn-to learn), differing from the more established auditory-sequential type of learning.

In Europe, there is not a declared official priority in this area. As stated by the president of the European Association of Geographers (EUROGEO) Karl Donert (2012) in the framework of the Digital Agenda for Europe (A Europe 2020 Initiative), "there is a need for people to acquire spatial thinking skills which are the essential components of 21st century learning, to become Spatial Citizens, … since many geo-spatial jobs here cannot be filled, yet we have unemployed youth across the continent". The geospatial domain presents an excellent opportunity towards achieving a meaningful connection between theoretical, higher-level concepts (e.g., geographical phenomena and processes) and tools of representation (e.g., maps and terrain) and their application in everyday life such as locating one's home or following directions to an unknown place using their mobile phones or web-based applications.

The ability for spatial thinking was originally related to mathematical competence and basic competences in science and technology. However, spatial and geospatial thinking are also related to other competences, such as competence in knowledge of and interaction with the physical world and learning to learn. This distinct form of thinking is defined as a constructive synthesis of three components: (a) concepts of space, (b) tools of representation, and (c) processes of reasoning. For example, in order to identify areas vulnerable to flooding due to a sea level rise, students and adult learners should grasp spatial concepts such as location, distance/ proximity, and elevation, understand representation tools such as maps and terrain modelling, and be able to perform reasoning processes, such as combining maps and evaluating multiple criteria (e.g., the location of settlements) and making inferences about environmental consequences.

However, research has shown that these components of spatial thinking are not treated equivalently in education; "low-level spatial concepts are given priority relatively to higher-level spatial concepts and spatial representations, whereas higher-order cognitive skills are rarely prompted" (Injeong & Witham, 2009). Furthermore, geospatial knowledge is usually static and independent from

other knowledge, impeding critical thinking and understanding of complicated interactions among entities, events, and phenomena that occur in space.

Therefore, there is a clear need for enhancing and integrating the three components of spatial thinking and engaging users in more critical, inquiry-based teaching and learning methods. Since geospatial thinking varies according to age, background knowledge, education, etc., a major challenge is to analyze the needs and characteristics of different target groups and develop the appropriate knowledge components that will help them enhance their geospatial skills.

2 State of the art

As the importance and amplitude of spatial thinking in various scientific and everyday tasks has been acknowledged, several efforts are currently made towards its effective incorporation in educational curricula.

The Spatial Literacy Program[9] aims at training educators helping students to develop spatial thinking abilities. The Spatial Literacy in Teaching (SPLINT)[10] aims at improving spatial literacy teaching and learning in higher education in the UK through the development of curricula at undergraduate and postgraduate levels.

The US National Science Digital Library (NSDL) has developed TeachSpatial[11], an environment which allows browsing several hundred teaching resources for spatial teaching and learning from the NSDL catalogues annotated with spatial concept terms. GeoGame[12] aims at developing an online map game learning tool.

SPACIT[13] is an EU LLP project which aims at providing teacher training courses targeted in the secondary education curriculum. The project develops a competence model and curriculum for teachers to promote students' (geo)communication skills and thus their active and successful participation in the geo-information society. The Project C3 (Children in Choros and Chronos[14]), focuses on the development of real school environments for raising childrens' 4-8 years old spatial awareness through game-like activities.

[9] http://www.redlands.edu/academics/school-of-education/9762.aspx
[10] http://www.le.ac.uk/geography/splint/
[11] http://teachspatial.org/
[12] http://geogame.osu.edu/
[13] http://www.spatialcitizenship.org/
[14] http://www.i3net.org/schools/leaflets/c3.gif

Digital-earth.eu[15] is a Comenius Multilateral Network which focuses on the provision of broad access to resources and the implementation of geo-media as a digital learning environment for school learning and teaching. It is complementary to two previous Comenius Multilateral Projects (GISAS and iGuess[16]) that used specific GIS software for the production of teaching materials for schools and training courses for teachers.

GeoLearner[17] is an educational software program designed to improve knowledge of World Regional Geography. The software includes a series of interactive maps and quiz sets to enable users' spatial knowledge of cities, countries, and physical features of world regions.

The Schools Online Thesaurus (ScOT)[18] provides a controlled vocabulary of terms used in Australian and New Zealand schools. It includes resources relevant to teachers needs for all subject areas of the curriculum and relates terms in a browsable (html and visual) structure.

These projects highlight the importance of enhancing spatial thinking and provide important resources of course materials. However, they do not deal with the three components of geospatial thinking in an equivalent and integrated manner; these are rather treated in isolation and without significant grounding to the real-world contexts where they acquire meaning and relevance. They are also treated independently of notions from other domains which are highly relevant and conceptually related.

3 Aims and Methodology

The GEOTHNK approach goes beyond the provision and organization of resources. It proposes the development of an innovative learning and teaching environment for the semantic linkage of geospatial concepts, representation tools, and reasoning processes in between and across other domains that may also provide relevant and meaningful contexts (e.g., Environment, Earth Sciences, Social Sciences, etc.). This environment will engage users in more critical, inquiry-based teaching methods, where scientific (and in our case geographical) concepts

[15] http://www.digital-earth.eu/
[16] http://www.iguess.eu/
[17] http://www.geolearner.com
[18] http://scot.curriculum.edu.au/index.html

and ideas are not taught in isolation but in a way that emphasizes their correlation and relevance.

The innovating elements of the GEOTHNK approach are:

- transversal character: geospatial thinking varies across different groups according to parameters such as age, background knowledge, etc. and therefore cannot be treated uniformly for all target groups.
- transfer of recent geospatial research regarding semantics, ontologies, and knowledge visualization as well as innovative teaching methods to all target groups.
- integration of knowledge: the aim is not the creation of isolated and independent knowledge, but the development of integrated blocks of knowledge.
- interdisciplinary approach: semantic linkage of knowledge components from different disciplines.

The main aims of the approach are: a) to enhance spatial thinking through an innovative ICT-based approach and an open, collaborative educational environment, and b) to offer a methodological approach which allows the interdisciplinary organization and semantic linkage of knowledge.

These will be achieved through the realization of the following specific objectives:

- Development of a pedagogical framework that will introduce essential strategies for the development of an innovative learning approach towards effective spatial thinking.
- Design of learning pathways based on the proposed framework that will focus on the organisation of a core set of learning components (concepts, representation tools, reasoning processes, and learning activities) according to the specific needs and characteristics of each target group.
- Development of an open, collaborative educational environment that will enable: a) access to various thematic resources and to learning pathways through an effective search mechanism, b) creation of new learning pathways through an easy to use authoring environment that will support both the creation and the organization of learning components, c) semantic linkage of the learning components and relative information for the enrichment of learning pathways and d) formulation of a rich semantic network which will provide a dynamic structure facilitating knowledge visualization and exploration.

The methodology consists of three main lines of action: a) the pedagogical approach, b) the technological development, and c) the pilots' implementation along with the necessary supporting mechanisms.

The pedagogical approach includes the development of a series of learning pathways that will act as demonstrators and best practices of the GEOTHNK project. The technological approach includes the development of an educational platform (Fig. 1). This socially empowered platform will enable users to search for resources, to share lesson plans, to exchange information and resources. The aim is to support educators to develop innovative pathways that will demonstrate learners innovative ways to associate geospatial concepts with concepts from other domains, infer and associate knowledge, e.g., explore historical events that coincide in space and time, or understand the correlation of physical and cultural phenomena. The educational platform development will adopt a participatory design that interconnects the pedagogical approach and the technological development that will be deployed to support the users' needs, will ensure the on-going identification, update, and integration of multi-perspective and multi-user requirements and will guarantee the development of an effective and easy to use interface to meet the needs of the proposed pedagogical framework.

The project supports the users' communities through the implementation of various activities focusing on the different target groups: school and university based activities, teacher training workshops and seminars, science museum based activities. This implementation phase will allow the evaluation of different attitudes of all involved key stakeholders towards the use of spatial thinking and scientific reasoning techniques in different cultures, thus providing ways for intercultural dialogue to improve these attitudes.

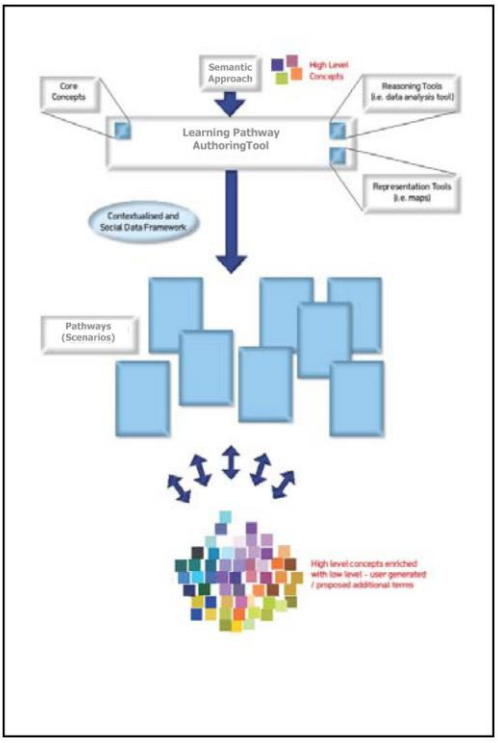

Fig 1: The GEOTHNK approach

4 Outcomes

The proposed methodological approach will support learners (students, university students, and adult learners) to apply spatial thinking and purposefully address spatial concepts, across all curricular areas and at any developmental level.

This approach will help them grasp the interdisciplinary character of fundamental spatial concepts. On the other hand, it will ground the coherence of the curriculum, reveal interrelations among disciplines, and apply fundamental reasoning and thinking to everyday life developing problem-solving skills of the

target groups. Up to now, disciplines in the curriculum seem as isolated islands bearing no relation to each other and are often taught as a catalogue of irrelevant terms. The project will change this view in teaching since it will enable linking of knowledge across disciplines.

Concerning ICT, the developed authoring environment will lead to collaborative teaching and training, by supporting the sharing/linking of knowledge and learning pathways (even among different disciplines) enhancing the social character of teaching and learning. Furthermore, it will help integrate different content resources that are dispersed up-to-date on the web through visualization and social navigation services and it will support the process of course planning by organizing and associating the available information.

The main contribution of the GEOTHNK approach is the development of geospatial thinking across different formal and informal learning settings and for different target groups in order to equip them with the necessary skills for their scientific and everyday lives. Finally, geospatial thinking will be imbued with the mundane reality, the way of thinking, and the unique cultural identity of a variety of people in Europe, strengthening, thus, their ties through deeper understanding of the characteristics of the multifaceted continent they share.

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Lessons learned from the European eMOOCs 2014 Stakeholders Summit

Ebba Ossiannilsson

Lund University, Sweden

Abstract: The second eMOOCs 2014 European Stakeholder Summit aimed to be an opportunity to gather international actors involved in the MOOCs phenomenon, from policy makers to practitioners to researchers. The goal of the Summit was to develop synergies among European universities and formulate the current state of the art. This paper will focus on the four addressed tracks presented during the Summit: namely, the experimental, policy, research, and business tracks. The official Communicators from the eMOOCs Summit are addressed in the paper.

Keywords: MOOCs, MOOC Summit 2014, OER, OEP, open education, openupeEd, opening up education, quality, quality assurance, quality enhancement, recognition, validation

1 Massive Open Online Courses (MOOCs)

The first MOOCs (Massive Open Online Courses) emerged from the open educational resources (OER) movement in 2002, when MIT (Massachusetts Institute of Technology) launched its course material openly and for free (Atkins, Brown, & Hammond, 2007). The term "MOOC" was coined in 2008 by Dave Cormier and Bryan Alexander in response to a University of Manitoba course called "Connectivism and Connective Knowledge" (also known as CCK08). CCK08 was led by George Siemens and Stephen Downes (2008), and consisted of 25 tuition-paying students at the university, as well as over 2,200 online students from the general public who paid nothing. All course content was available through RSS (Rich Site Summary) feeds, and online students could participate through collaborative tools, including blog posts, threaded discussions in Moodle and Second Life meetings (Cormier, 2008; Downes & Siemens, 2008). Downes considers these so-called cMOOCs to be more creative and dynamic than the current xMOOCs, which he believes resemble television shows or digital textbooks. Later, in 2011, Sebastian Thrun launched his Artificial Intelligence

course as a MOOC, with some 160,000 enrollees (Gaebel 2014; Haggard et al., 2013; Sir Daniel, 2012).

2012 became the year of the MOOCs, and the concept became the educational buzzword of the year (Pappano, 2012; Sir Daniel, 2012). Universities around the world started to consider offering MOOCs themselves, and the number of MOOCs increased with the hype (Pappano, 2012; Sir Daniel, 2012). MOOCs were discussed and debated as causing the disruption of the entire role of universities. During 2013, the MOOCs discussion and its consequences were more balanced. In 2014, MOOCs seem to involve and have been embraced by educational settings, to be a phenomenon that will stay, and to be seen as a natural thing for universities to offer. Whatever one thinks about MOOCs, they seem to have brought something forward that embraces a new learning paradigm, with personalized and open learning – which are seen of the utmost value – for the entire discussion of online open learning, e-learning, and mobile learning (Kolowich, 2013). As Yuan, Powell, and Olivier argue:

> *The key opportunity for institutions is to take the concepts developed by the MOOC experiment to date and use them to improve the quality of their face-to-face and online provision, and to open up access to higher education. Most importantly, the understanding gained should be used to inform diversification strategies, including the development of new business models and pedagogic approaches that take full advantage of digital technologies. (2014)*

A MOOC is an online course aimed at unlimited participation and open access via the Web. In addition to traditional course materials such as videos, readings, and problem sets, most MOOCs are available through platforms such as Coursera, edX, and Future Learn. MOOCs can be said to be a recent development of distance education. Although early MOOCs often emphasized open access features, such as connectivism and open licensing of content, structure, and learning goals in order to promote the reuse and remixing of resources, some notable newer MOOCs use closed licenses for their course materials, while maintaining free access for students (Conole, 2013; Gaebel, 2014; Haggard et al., 2013).

Several authorities such as the European Commission (EC), United Nations Educational, Scientific and Cultural Organization (UNESCO), and the Organization for Economic Co-operation and Development (OCDE) are promoting open learning that is accessible for all through several initiatives. The aim of the EC's initiative, Opening Up Education, is to bring the digital revolution to education.

Three areas are in focus: open learning environments, OERs, and connectivity and innovation (EC, 2013). The solution according to the EC initiative lies in open technologies that grant access to education for everyone. The initiative states that opening up means "bringing the digital revolution in education"and that digital technologies allow all individuals to learn, anywhere, anytime, through any device, with the support of anyone" (EC, 2013).

Quality issues in online learning and educational settings are more prioritized and focused, due to the increased offerings of MOOCs (Conole, 2013; OpenupEd, 2013; Uvalic-Trumbis & Sir Daniel, 2013).

This paper focuses on the tracks addressed during the eMOOCs Summit 2014.[19] Additionally, some current trends and their consequences are discussed.

2 The European eMOOCs 2014 Stakeholders Summit

The second European eMOOCs Stakeholders Summit 2014 aimed to provide an opportunity to bring together European stakeholders involved in MOOCs, from policy makers to practitioners and researchers. The conference also aimed to develop synergies between European universities on the topics of quality, assessment, accreditation, platforms, interoperability, and joint research initiatives.

The scope of the eMOOCs Summit covered tracks such as policy, experimental, research, and business plans. The Summit addressed current trends and questions based on a wide variety of examples and practical experience reports. Some questions addressed were: What is a MOOC? How does it work? Why offer a MOOC? What is the MOOC hype about? Are there downsides? Which players and business models are involved? How do you plan, produce, and run a MOOC? One main message from the Summit was that the question "What can MOOCs do?" is not relevant any longer; rather, we have to ask "What should MOOCs do?" Xavier Prats-Monne of the EC argued that education is currently undergoing an incredibly comprehensive development. Characteristic of this is that we are in a situation where there are no traditions and that we don't know for certain how it affects or will affect (higher) education. The only thing we certainly know is that it will affect higher education and that the traditional educational map must be redrawn with other structures,

[19] http://www.emoocs2014.eu/

colors, models, pedagogy, organization, management, etc. This has indeed been said in the past, but this time it is different. MOOCs show the importance and influence of information and communication technology (ICT), media and communications (MIC), and the consequences of increased digitalization, as well as their implications for learning, individualization, and education. The role of universities will change, as knowledge is rapidly spreading in complex networks and communities of practice (COP), and universities are about losing their unique certification monopoly. It was stressed during the Summit that current, traditional educational models are outdated and about to be completely eliminated. MOOCs provide the ability to innovate learning design and educational offers. They also provide increased opportunities for lifelong learning, which confirms the fact that many of those studying in a MOOC already have a degree. Stories about how MOOCs change people's lives and working conditions are also beginning to emerge.

The four tracks (policy, experiences, research and business) will be summarized, followed by a discussion and the conclusions.

Policy track

MOOCs raise new questions and challenges in terms of higher education policy. They are considered as disruptive by some, and just a new way of teaching and learning by others, and Europe is responding in diverse ways. In some countries, national initiatives have been launched, and a growing number of university networks, foundations, established private sectors, and start-up companies are now getting involved in MOOC development. Questions on policy issues were addressed, such as: What are the main challenges higher-education institutions are facing? What should the level of implementation be? Should there be a national or European strategy for MOOCs? Who should be involved in their design and delivery? What are the opportunities in terms of outreach, knowledge transfer, and capacity-building in developing countries?

Rich opportunities were given to achieve the state of the art on MOOCs policy, as the Summit gathered decision-makers, leaders, and managers from European universities as well as from regional, national, and supranational authorities. Topics addressed were local, regional, national, and supranational strategies. Discussions on platforms and portals were held; partnerships, networks, and associations were addressed. In addition, initiatives fostering the use of MOOCs across academic communities to enhance learning and teaching were a focus. Curriculum design, assessments, as well as quality assurance, accreditation policies, certifications, capacity-building, collaboration with

developing countries, intellectual property, and data ownership were highlighted and emphasized.

Experience track

The experience track addressed best practices and success dimensions, the selection of MOOCs, production, costs, processes, and pitfalls. Questions such as incentives, motivations for teachers and learners, pedagogical development and support, and feedback from students were covered. Additional topics were integration with existing e-learning initiatives and learning management systems. Learning analytics in relation to MOOC data, such as dropout rates, student demographics, popular activities, and success rates, were also highlighted. Questions on course design, preparation, and how deployment could be organized were covered, as well as learning design and plagiarism. Experiences of university administrators and those responsible for promoting, selecting, supporting, and evaluating MOOCs from an administrative point of view were also addressed. Additionally, the integration of the MOOC platform with other systems, evaluation, and costs were a focus. One interesting statement was how the MOOC strategy was linked to the traditional education workflow. One of the main questions, namely, that of the incentives for offering MOOCs e.g., lifelong learning, remediation, bachelor and master's courses, new markets, marketing, on-campus students were emphasized.

The session included experiences in the use of MOOC-related educational technology in the context of traditional on-campus education. It used to be argued that MOOCs contribute to methodological innovation in learning and educational settings. This was highlighted in the course of the discussion on how to use MOOC technology for traditional education: e.g., in what ways can MOOCs perform better than other learning provisions, what elements of MOOCs can be used in face-to-face education, successful and unsuccessful experiences of the flipped classroom, and whether so-called campus education can be combined with the deployment of MOOCs. Gamification, which has gained popularity with learners during recent years and is now frequently used in educational settings, was discussed, and whether its use achieves greater student engagement and better learning.

Research track

The research track aimed to feed the general debate on MOOCs with scientific data. This track addressed evaluation of MOOCs and learning design

alignment with conceptual issues, which is frequently discussed related to open education (Conole, 2013; Ehlers, 2013; Laurillard, 2012). Research on learning analytics and technological aspects was likewise addressed. However, research on MOOCs is very much in its initial phase, and much still has to be done.

Business track

The business track is so far one of the less exploited areas of MOOCs, at least in Europe. At the Summit, this track dealt with the involvement of corporations in MOOCs in Europe. Corporations touched on included content and platform providers, corporations for internal learning and development needs, non-governmental organizations (NGO), and not-for-profit organizations having corporate-like needs. EU initiatives and projects, MOOC infrastructure for corporations, university/corporate partnerships for MOOCs, etc., were also discussed.

In summary, it could be said that on this track there were more questions than answers, probably because there are a variety of reasons for offering to participate in MOOCs, aligned with a diversity of MOOC models and huge diversity when it comes to target groups. Time will tell how questions and answers will be addressed. The short answer is what was argued by Xavier Prats Monné of the EC: that there is a need to rethink the entire educational sector, both nationally and globally, and a need for glocalisation (globalization and localizastion).

3 Discussion and conclusions

MOOCs can take advantage of 30 years of research in distance education and a minimum of 10 years of research in online learning. Similarly, MOOCs are a natural extension of learning objects, open courseware, and OERs.

MOOCs have been criticized for the lack of a personal touch. This is now recognized by the platform providers, who now offer established and co-located meet-ups around the world.

Currently, credits are not very often given by universities, just badges, although some allow participants to supplement those with campus courses to get course credits. A few employers recognize MOOCs. However, an increase in recognition can be foreseen and is forecast. The labor market is already demanding MOOC certificates, and employers are recommending MOOC courses

for their employees. The trend is towards certification of MOOCs by professional organizations (rather than colleges). There is a need for new forms of certification and accreditation. Gamification, and the maker culture will also show the way in this regard. xMOOC companies (EDX and Coursera) offer "premium track" models, in which participants pay a fee in advance to obtain access to the final exam and get a certificate. Users of premium tracks have a rate of up to 70%, which is much higher than usual MOOC participation. The increase can be explained by the economic motivation to get value for money and selection, by which only motivated participants are willing to pay. Some final interesting observations are that several MOOC initiatives are developing, with accompanying new abbreviations.The conference presentations offered a plethora of new terms: SPOCS (small private online courses), NOOCs (national open online courses), and SOOCs and BOOCs (small and large open online courses). Is a MOOC with fewer participants still a MOOC? Others include COOCs (MOOCs for corporate training), VOOCs (MOOCs for vocational training), pMOOCs (project-based MOOCS), and DOOCs (open and collaborative exchange, based on a special theme). The list is very long. In conclusion, MOOCs have lit a fire that will not soon go out!

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The adoption of OER in organisations: overcoming barriers

Dimitra Pappa

National Centre for Scientific Research (NCSR) "Demokritos", Greece
dimitra@dat.demokritos.gr

Abstract: recent years have seen the rise of the Open Education movement and the proliferation of Open Educational Resources (OER). Nonetheless, organisational training remains largely rooted in traditional approaches, with OER being widely unexploited. The present paper investigates the use of OER from the corporate point of view, discussing existing barriers and requirements for the adoption and effective integration of OER in the organisational setting.

Keywords: OER, organisational learning, quality, competencies, discoverability

1 Introduction

It is widely acknowledged that technology is changing the paradigm of education and learning (Aslan & Reigeluth, 2013). In an increasingly digitised society, with information and knowledge flowing freely online and being available everywhere and open to everyone to use, the educational challenge is to encourage and enable people to take advantage of this resource for their own learning and development. A 2011 foresight study commissioned by EU DG Education and Culture concluded that personalisation, collaboration and informalisation (informal learning) will be at the core of learning in the future. "The central learning paradigm will be characterised by lifelong and lifewide learning and shaped by the ubiquity of Information and Communication Technologies (ICT)" (Redecker et al. 2011).

Already, recent years have seen the rise of the Open Education movement and the proliferation of Open Educational Resources (OER). OER are defined by UNESCO as "technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes" (UNESCO, 2002). This includes all educational resources (course

materials, textbooks, streaming videos, multimedia applications, and any other materials that have been designed for use in teaching and learning) that are freely and openly available for use and reuse by educators and students, without an accompanying need to pay license fees. Currently, several initiatives provide OER for different purposes. Whether complete courses (offered by universities like MIT) or small learning objects (included in online repositories like OER Commons, MERLOT, ARIADNE etc), OER are materials offered freely for use by teachers and learners. 'Freely' in this context means without charge and with few or no restrictions on the way material can be adapted and reused. This allows material to be freely revisioned and updated.

The Open Education movement is already having an impact on higher education and life-long learning. With the growing availability and popularity of OER, a new pedagogy is emerging. Technology is changing not only the way students learn, but also the way educational institutions teach. The MOOC (Massive Open Online Courses) initiative is changing higher education, as growing numbers of free or low-cost courses become available online, making MOOC an alternative to traditional education.

Nevertheless, organisational training still appears rooted in traditional approaches. OER remain widely unexploited in the corporate setting. Although in theory the Human Resources & Training departments could exploit OER to enrich their course and didactic material and expand their curricula with innovative and up to date information and resources available in electronic format on the web, until now course designers have been reluctant to do so and overall the exploitation of learning content from the web has been limited, if any.

In the following section we are going to investigate the use of OER from the corporate point of view, discussing requirements for the exploitation of OER.

2 Organisational training

Nowadays, upskilling is acknowledged as the way forward for organisations to increase or maintain their competitiveness. The continuous updating of competencies becomes imperative for organisations, in order to achieve business success, while individuals can boost their employability and career potential. This implies a need for effective competency management within organisations, linked to quality training services. However, often the planning and execution of learning is not coupled, let alone integrated with business objectives. This limits the effectiveness of training programs and results in considerable delays in the

acquisition of urgently needed skills. Training is neither personalised enough, nor delivered "on time", training organisation is rigid and slow in adapting to emerging needs and potential content sources are not fully exploited. (Pappa, 2009; Karapidis et al., 2009).

The Open eLearning Content Observatory Services (OLCOS) (www.olcos.org), roadmap concluded that the key issue with respect to OER is whether or not they are useful and effectively used in equipping students with the competences and skills for personal and professional achievement in the current and emerging knowledge-based societies and economies. This is also valid in the case of organisational training. The information and knowledge assets of an organisation are strictly linked with its "capacity to act": in the organisational setting knowledge cannot be regarded as possession, but rather as a contextualized capability to perform (Sveiby et al.,1997). The aim of training is to build the staff's capacity and skills (i.e. equip employees with the competencies needed), in order to effectively perform particular tasks and duties to the standard of performance expected in the workplace (Eraut, 2004). Competencies describe the state or quality of being adequately or well qualified, i.e. having the ability to perform a specific role. In the organisational setting, competence denotes the ability of organisations and employees to cope with business needs: competencies determine individual performance, which affects process performance, which influences overall business performance. An organisation's strategy is translated in strategic objectives from which organisational competency requirements are derived. The organisational competency requirements together with the competencies derived from the key processes determine the individual competency requirements.

Competencies are measurable human capabilities that enable performance and can thus identify successful employees against defined roles within an organisation. They represent knowing 'what to know', 'what to do' and 'how to perform' in a specific work context. In addition to being informed, having knowledge or understanding about facts, processes, underlying concepts and principles etc, the ability to apply it, in performing a specific task with a specific outcome, is required. From an organisational point of view, competencies can be described as

- **Functional**: technical knowledge or skills required by a particular field or profession (e.g., accounting principles).
- **Personal**: individual attitudes and skills required to handle professional relationships and facilitate learning and personal development (e.g., communication).

- **Business**: ability to view issues or situations from a business perspective (e.g., strategic or critical thinking).

In order to be effective, training must be aligned with the employee's daily working tasks: promote learning of concrete skills that are directly applicable in specific professional contexts. Therefore, an organisations needs to put in place mechanisms for the combined management of business processes, organisational roles, competencies and learning processes. In order to align learning with business processes there is a need to support a complete learning life cycle, centred around the enhancement of individual competencies according to business process needs. This involves the following stages:

- **Competency modelling**: Analysis of business processes for the identification of competencies required for an effective and efficient process performance
- **Competency development planning**: analysis of competency gaps of individual employees
- **Training**: Development of training offerings and matching with individual competency development needs and learning style. Execution of training
- **Performance appraisal**: Monitoring of employees' performance according to the competency development and process performance goals

Learning planning is based on the examination of competency requirements against competency evidence and then of the resulting competency gap (or improvement potential) against the competencies that can be acquired through a given training module. Because of the rapid growth in the development of OER, there are currently numerous online repositories that contain and provide access to vast amounts of OER material. In principle, course designers could exploit an extended content pool to find the most appropriate resources, which can subsequently be adapted with the use of the appropriate authoring tools, according to specific training needs, the learning culture of organisation, etc and be integrated in their educational process. In practice, this is seldom the case.

The following section reports on the main issues affecting OER adoption in organisations.

3 OER in the context of organisational training

Overall, the exploitation of OER may have a significant impact on both training provision and course design and individual learning. However, the key issue with respect to OER is whether or not they are useful and effectively used in equipping employees with the competences and skills for performing their work tasks.

The COCAL project (2012) investigated the potential benefits of OER in the framework of organisational training, by analysing the needs and requirements of the different stakeholder groups involved. A qualitative survey conducted by the project featuring dedicated workshops and face-to-face meetings with stakeholders from the banking and the mobile communications sectors in Greece and domain experts, identified the following as the most critical points with regards to the exploitation of OER by organisations:

- **discoverability of learning resources**: applicability of federated search for OER (organisational perspective, employee perspective)
- **re-use/adaptation of OER** for in-house learning content production
- **quality assurance** mechanisms for learning content
- **content relevance**

The first question for potential users of OER is "how to find them", i.e. how to find material that best fits their specific needs. Because of the rapid growth in the development of OERs, there are numerous online repositories that contain and provide access to vast amounts of OER material. The use of advanced search services allows trainers to exploit an extended content pool to find the most appropriate ones, which can subsequently be adapted with the use of the appropriate offered/recommended tools, according to the trainees' training needs, the learning culture of organisation, etc and be integrated in their educational process.

Nonetheless, simple searching is not sufficient. Enabling competence-based search and retrieval of educational resources is one of the key requirements for commoditising OER in the context of organisational training. A simple topic-based search would not be enough, since organisations need the selected content to bring employees from their existing competency level and the desired proficiency level (as stipulated by their work tasks). Instead, OER descriptions should be enriched with competencies information, in order for search to yield the desired results.

The following is a listing of the key conclusions:

- The availability of OER is growing, with new institutional and user-generated, collaborative repositories emerging.
- The relevance of online content should be assessed, in order to identify resources that fully or partially meet specific training requirements. To facilitate this process open content aggregators (allowing for federated search for OER) and specialised search services are required. Typical search engines are deemed inadequate, for locating relevant educational content.
- Discovery of OER requires standardisation of metadata descriptions. At present common OER classification descriptors include: title, author, type, and license.
- Discovery of OER requires enrichment of metadata descriptions, with information about related competencies, which currently is not among the mandatory fields in most repositories. (Ha et al. 2011)
- Discovery of OER calls for standardisation in the content's format. Conformance to content standards and file formats is required, in order for the material to be usable in different software environments
- Changes and improvements could/should be made to the material located, in order to make it fit the specific requirements of the organisation
- The need for localisation of OER should be investigated, i.e. adaptation to the local language, culture, and/or organisational context.
- Content adaptation requires access to and expertise in using relevant content authoring tools. Large organisations usually have well staffed training departments, featuring in-house course designers, and already engage in limited or extended in-house content production.
- An in-house course designer could develop new courses on-the-fly by selecting existing OER components and/or adapting them if needed. Compared to developing new material from scratch this reduces significantly the response time of the training department to emerging requests for training content.
- In order to be released for use in the organisation, the learning material must conform to specific quality conditions. Material stemming from OER repositories that apply open and decentralised quality assurance mechanisms (OECD,2007) requires additional attention. Organisations usually have more strict rules with respect to authorising the use of training content. While popular online quality management processes

rely heavily on user comments/ratings, peer reviews etc, the setting up of internal quality procedures is required for corporate users. Prior to its acceptance, the learning material should undergo the same formal assessments (based on the same quality criteria) as any new material produced in-house or acquired from an external training provider.

- Content sustainability/maintenance is also an important consideration for potential users of OER. The risk of using out of date content should be eliminated.
- Independent (i.e. self-paced) learning may be facilitated through the creation of an inventory of approved independent open learning materials. Employees/learners can exploit free online (quality approved) content to enhance their training and/or build their personal education path. This personal development service calls for a clear definition of the competencies requirements of job roles, and of the competency improvement potential provided by each learning object. Each course should include a clearly documented specification, in terms of expected learning outcomes and assessment. The service should allow learners to understand how the content and skills in these learning modules relate to those required for their job role. This should be complemented by a self-assessment infrastructure allowing trainees to evaluate their current status at any time. Employees may need support for the development of the skills needed for self-regulated learning. Training tutors may assume a different role in assisting trainees to acquire new learning skills.
- The complexity of competency definitions in organisations, which hinders the direct re-use of generic OER without significant adaptation. In the organisational context, competencies are linked to business processes and contexts, as well as to the goals and strategic objectives of the organisation.In the context of the COCAL project this complexity has been modeled as the aggregation of three distinct tiers that comprise: (a) core competencies, i.e. competencies that are essential for all employees, (b) more specific cross-functional competencies that reflect the needs of specific business domains or job groups and (c) functional/technical competencies that reflect task-specific competencies requirements.
- Typically, OER are more suited for catering for functional/technical competencies, while are less suited for cross-functional and core competencies that intrinsically relate to core characteristics and values of the organisation. The later requires significant effort for the

adaptation/ re-purposing of open material to the specific needs of the organisation.

4 Conclusion

Overall, although there are advantages in exploiting open content for training, in the organisational context significant barriers exist, the most important being that of discoverability and relevance to the competency enhancement needs of the organisation. Indeed, several initiatives have addressed the issue of access and availability of OER. Nonetheless, additional expertise is required in order to fully integrate OER in the organisation and improve training practices. Open educational practice guidelines (OPAL, 2011) provide additional insight regarding the adoption of OER with the intention of driving improvement and innovation in teaching and learning. Yet, additional barriers exist. The "not-invented-here" syndrome, identified as a significant barrier for educators (OEI2 project, 2014) is accentuated in the corporate setting. For, in addition to the missing emotional/affective relation between the educator and the open resources (emotional ownership), what is also missing is the relation to the core characteristics and values of the organisation. What is clearly lacking is a feeling that learning opportunities have to be created within the organisation. With organisations often lacking the expertise and/or resources to complete this task internally and external content lacking organisational relevance, engaging in collaborative training resource development could be beneficial. Early stage collaborations, bringing together corporate users, educators and academics to develop OER for use within the organisation, as part of a participatory, generative and creative process similar to the one proposed by the OEI2 project could bring significant advantages.

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Bottom-up to top-down approach of integrating ICT in national school curriculum in Croatia

Aleksandra Mudrinić Ribić, Maja Quien

Croatian Academic and Research Network- CARNet, Croatia
Aleksandra.Mudrinic@CARNet.hr, Maja.Quien@CARNet.hr

Abstract: Adapting the national educational system to contemporary learning conditions, primarily information and communication technology (ICT), is an issue in many countries since it includes changing traditional learning principles, training school staff for implementing new technologies, providing hardware and as a result adjusting the national school curriculum. There are two main approaches in implementing ICT in the national school curriculum. Bottom-up approach focuses on activities for schools and teachers, while the top-down includes a formal, structural change; therefore**,** it focuses on the responsible ministry and other state bodies. By combining these approaches and their specific activities that focus on awareness, education, implementation, promotion and support, we can significantly contribute to the implementation of ICT in the national school curriculum in Croatia.

Keywords: information and communication technology, learning, school curriculum, education system.

1 Introduction

Claiming that technology is changing education principles and methods, while at the same time challenging the concept of traditional schooling is nothing new. Technology is involved in almost all segments of everyday life and education is not exempt from that. In spite of that, in Croatia, the potential of information and communication technology (hereafter ICT) is not being exploited in the formal education system. One of the main blocks to the incorporation of technology is that there are few teachers who are eager to be the first to try new technologies in the classroom. This paper will focus on presenting the activities undertaken in Croatia by the Croatian Academic and Research Network – CARNet, mostly on a national level, to participate in processes of formal involvement of ICT in education system or in other words, in the national school curriculum. Those activities are summarised in groups and presented with examples of various projects in this field.

ICT is changing the way we learn and this is ˝the new learning revolution˝, as Dryden and Vos (2005) call it. They discuss three revolutions that are fully in progress and cannot be stopped. Breakdown of traditional schooling is the first one, a bit painful and a slow process. Second is the emergence of new best ways of learning, so logically the third one is the ˝flood˝ of new methods of sharing knowledge and ideas. These processes are ˝demanding˝ overall reconceptualization of the formal education system that now needs to adapt to the world that has changed so fast in the last decade and needs to create a new learning approach and offer revised competences suitable for the new generation of children. This is also emphasized by Dryden and Vos (2005) who say that a shift of focus from teaching to learning must lead to the focus on curriculum. After all, such a large scale technological change that has occurred requires a large scale change on a formal level of the education system. Therefore, our paper will provide an overview of the context relevant for the present education and focus on the examples of good practice of combining approaches for reaching the goal of including ICT in the national school curriculum.

2 Issues and possibilities of involving ICT in the contemporary education system

Classrooms of the future' refers to the technologically equipped classrooms ready for the needs of the 21st-century teaching processes. These classrooms are equipped with interactive white boards, touch screens, teacher's computer and student's tablets, videoconferencing systems, broadband internet etc. But the reality is that this is a distant vision to most of the Croatian schools. Although there is an effort to equip schools in Croatia, the average school is poorly equipped with ICT and unable to take part in most activities of advanced e-education.

In 2001 the Croatian Ministry of Science, Education and Sport started a project that was implemented for several years where all schools were provided with ISDN (Integrated Services Digital Network) connection and free internet usage, and a total of 1750 computers were donated. All educational institutions can sign up to get a free Internet access with an unlimited Internet traffic and technical support20. In 1997, 139 institutions were connected to the Internet via CARNet, and by 2014 that number increased to 1651 institutions on 3299

[20]Source: http://public.mzos.hr/Default.aspx?art=8894&sec=3140, http://www.t.ht.hr/odgovornost/netuskoli.asp.

locations21. Still, hardware for schools is a big issue. Although raising the ICT standard in national education system is a significant financial investment there are long term and multiplier benefits. There is a broad consensus on the benefits of school education brought by the appropriate use of ICT that requires certain competences (UNESCO, 2011). Digital competence is one of the eight key competencies that all individuals need to develop for their own needs, such as social inclusion, employment and active citizenship (Official Journal of the European Union, 2006). Also, education is a dominant factor of wealth of nations (Goldin, Katz, 2008) but also of an overall development of a country in the future in connection to the average level of relevant teaching skills (Organization for Economic Co-operation and Development, 2012).

3 Making each teacher count: good practice example of combining approaches for implementing ICT in the national education system

There are two levels of activities that can be described as bottom-up and top-down approach in reaching the goal of integrating ICT in the education system. A bottom-up approach starts at the level of each school or even each teacher by getting them interested in ICT, educating them how to use it in the classroom, and finally implement it in their class. Teachers have an essential role in ensuring that students understand why they use ICT in learning and in adapting the learning process to be suitable for the use of ICT in the classroom (Wegerif, Dawes, 2004). Hence the importance of involvement of each teacher for implementing ICT in their class, as the sum of those teachers (or schools) create a basis for an irreversible process of ICT integration in the education system. Teachers serve as the change agents who will be the first to implement top-down change, which is a formal change brought by different state bodies. Therefore, top-down approach in this context refers to formal decisions, activities or large scale projects that involve ICT in the education system on a national level.

CARNet is a government agency, which operates under the Ministry of Science, Education and Sports. Since 1995, when CARNet was founded, its main activity was providing both a state-founded and state-funded infrastructure for Internet access for all educational institutions in the country22. Developing the

[21] Source: http://www.carnet.hr/.
[22] See footnote 2.

new technologies and the society as a whole, CARNet takes new focuses and perspectives in activities connected with integrating technologies into Croatian educational context.

Technology enhanced teaching and learning in Croatia at first was mainly focusing on academic community, mainly because having an Internet connection and several personal computers was reserved just for Universities and other institutions in higher education. Back in the end of the 90's CARNet, as a network provider for higher education institutions, started with the development of free online courses on specific subjects involving technology integration into teaching and learning practices and supporting educators and students in attending them. Moreover, this also included developing personal online courses and online learning materials. That was the early stage of structured acceptance and adaptation of technology into the educational context. In terms of ICT acceptance, CARNet understood the importance of raising academia and students' awareness along with systematic education on how technology can improve teaching and learning. To support successful integration of technology into education through raising awareness of its presence and possibilities and targeting key methods and users, CARNet debuted with activities, which were start-ups in the context of developing a digital society. First CARNet Users Conferences - CUC23 were events where were presented innovative tools, methods, examples of good practice that could be integrated into teaching and learning concepts. CUCs were the first national conferences that presented breakthroughs of using ICT in terms of teaching and learning, and it has become, among all other activities that it provides, a place of connecting teachers and learners in ICT enhanced learning.

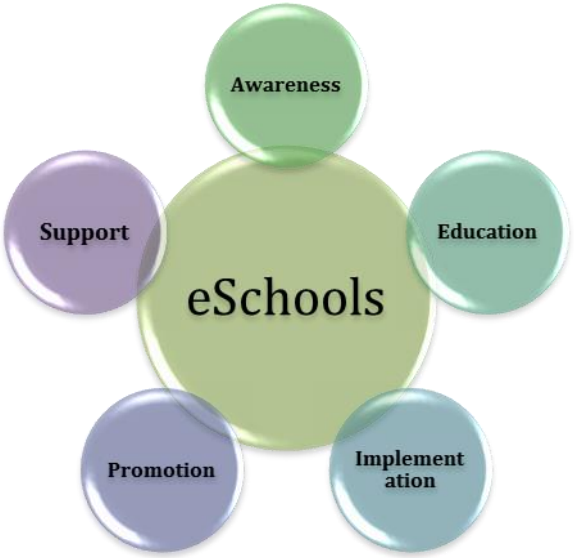
Along with the CUC conference being organised annually, by the year 2000 CARNet had produced dozens of online courses and face-to-face trainings on different subjects designed for university teachers and students with a focus on encouraging and supporting teachers and learners to develop their own online courses and to share them with their students and colleagues. CARNet also provided a Learning Management System for all its users as a platform for providing education and as a place to store and share users learning materials. One of the main focuses was to develop an environment where teachers and learners would be comfortable with technology and trained to integrate technology into their teaching and learning practices.

[23] Source: http://cuc.carnet.hr/2014/previous_conferences.

The year 2007 was a milestone in the work of CARNet because of the decision of the Ministry of Science, Education and Sport to officially include all primary and secondary schools in the country in the CARNet network, what enabled them to use all existing CARNet services. This indicated that CARNet should define new approaches as this meant a greater challenge and an opportunity for spreading the idea of technology that could enhance teaching and learning processes in primary and secondary education. A sustainable and formal acceptance of ICT in the education system would refer to the formal integration of ICT in the national school curriculum. ICT is playing an important role in changing educational system since these technologies provide a basis for implementing new curriculum that is based on real-world problems and provide quick feedback individually to students (Kozma, 2003).

A rich experience of CARNet's activities, projects, services and events that we have organised and developed, of which some of them are presented in this article, can be presented in groups of activities. Basic **bottom-up approach** for the integration of technology into educational practice were inevitably related to five main groups of activities: **Awareness, Education, Implementation, Promotion** and **Support** (see Figure 1).

Figure 1. Five groups of activities of ICT integration in the national educational system



Some of these activities, such as awareness, education and promotion are a key part of the **top-down approach** as well. Combining these activities in terms of bottom-up and top-down approach can have a bigger effect. Raising awareness on the benefits of ICT in the classroom among teachers became one of the key activities at the beginning. Portal for Schools[24] was established as a central place for the exchange of knowledge and a source of useful information for teachers, students, parents and schools. It included links and references to the other online and traditional sources of information. The CARNet Users Conference - CUC[25] modified its programme adjusting it to users from school community. It has become a well-known place for teachers in terms of educating on the new technologies and exchanging examples, ideas and models of ICT integration in school practices. As Croatia became an EU member, this allowed CARNet to participate and lead projects where activities and project results could improve users' abilities to adopt and integrate new technologies and methods into their educational practices. As a partner and national coordinator of EU funded projects such as Open Discovery Space – ODS, Inspiring Science Education – ISE, e-Vet Ready, eVET2EDU, and leader of Amores, ICT Curricula and Study Visit project, not only does CARNet gather school teachers and school principals, but, what is crucial, it targets stakeholders and decision-makers that have impact on Croatian education policies[26]. These projects provide a significant opportunity for a top-down approach for integrating ICT in the national school curriculum. Some of the project activities aim at bringing together key players: teachers as change-agents, school principals, school founders and Education agency members for common reflection and cooperation in activities for the integration of information and communication technology and models into school teaching practices. Through different project activities, such as Info Fair[27], CARNet promotes importance of Open Educational Resources (hereafter OER), so called Creative Commons licenses and understanding of authoring rights and their benefits for school teachers either as users or content providers.

In order to encourage teachers to create and publish their work related to using innovative ICT tools and methods, along with supporting them to create their own learning scenarios and digital learning materials CARNet organizes

[24] Source: http://www.skole.hr/.
[25] Source: https://cuc.carnet.hr/2013/en.
[26] Source: http://www.opendiscoveryspace.eu/, http://www.inspiring-science-education.net/, http://www.carnet.hr/ise/radionice, http://www.evet-ready.eu/, http://evet2edu.eu/, http://www.amores-project.eu/, http://www.carnet.hr/o_carnetu/eu_projekti/ict_curricula, http://www.carnet.hr/study_visit
[27] Source: http://www.carnet.hr/info2012/program

workshops, panel discussions, round tables and contests for teachers[28]. Another important activity that CARNet provides through its standard activities and through activities of specific national and international projects, is education of school teachers and other relevant users, such as the Croatian Education and Teacher Training Agency advisors. In the year 2007, in cooperation with the Ministry of Science, Education and Sports, CARNet initiated education for all primary and secondary teachers in the country on the subject reflecting ICT integration into their teaching and learning activities.

In the year 2010 CARNet in cooperation with the Ministry of Science, Education and Sport and the Croatian Education and Teacher Training Agency started the project ICTEdu that with an aim to encourage and educate teachers for implementing ICT in their teaching practices[29]. Until now, more than 45000 teachers, school staff and principals of primary and secondary schools were trained in 3790 workshops, making about 98% of the total school staff in Croatia. Topics that were presented in the workshops encouraged teachers to develop, implement and share OER. This project has significantly contributed to the growth of the national repository of digital learning materials in Croatia. In addition to "on-site training" courses, CARNet has developed and is providing and maintaining online courses in Moodle[30] that help raising digital competences of teachers, educating them to create their own learning materials and teaching courses. More than 5800 teachers participated and successfully completed online courses that CARNet provided. CARNet as a great supporter of OER has started up this year the first Massive Open Online Course (MOOC)[31] intended for all interested citizens in Croatia.

CARNet as a great patron and promoter of ICT implementation into school practice initiated a series of projects for equipping schools with the state-of-the-art ICT technologies. One of the most outstanding projects was the project Schools2.0[32], which provided broadband Internet connection, videoconference systems, Smart-School systems and tablets for all teachers and students in 27 Croatian schools. The main focus in the project was to establish systematic education and support for the teachers involved in the project. In the period of two years teachers have participated in the series of organized targeted education for implementing the technology into their every day practices. The

[28] Source: http://www.skole.hr/priprema_pozor_sat
[29] Source: http://www.carnet.hr/ictedu
[30] Source: https://loomen.carnet.hr/.
[31] Source: http://e-obrazovanje.carnet.hr/zapoceo-prvi-carnetov-mooc/
[32] Source: http://www.carnet.hr/skole2.0.

idea for creating digitally mature schools was the leading point of setting the basics for including technology into the school curriculum. One of the activities of the project was to educate three teachers of each school for designing and writing a new ICT enhanced school curriculum. Attending CARNet's E-Learning Academy[33] teachers got knowledge and expertise for implementing a new school curriculum. This inspired many other teachers to implement ICT in their own teaching practices and present and publish their work.

Creating the opportunities for teachers to test new, innovative ICT tools and methods and to see the examples of the best practice of their colleagues or ICT experts renders the promotion one of the crucial CARNet's activities. Moreover, promotion of those practices became an important activity of CARNet's work especially as it positively affected stakeholders' attitude toward the issues of integration of ICT in the national school curriculum.

As the top-down approach to integrating ICT in the national school curriculum in Croatia we have focused on a long term project called eSchools. It has received support from the Croatian Ministry of Science, Education and Sport and will apply for funding from two EU structural funds. With an ambitious budget of approximately 287.000.000 EUR, the project aims to create digitally mature schools that can produce competent and research-oriented students adaptable to both the educational and labour-market challenges.

Digitally mature schools are considered to be schools that are able to accept, use and exploit the benefits of ICT for the development of educational and business activities of the school and school system. The project thus includes the development of educational e-services and e-content (overall availability of OER), as well as development of school infrastructure. Moreover, it also aims at developing human resources of the school staff and support in terms of technology as well as pedagogy.

The development of this project is a result of a long term cooperation of CARNet with some of the key stakeholders such as the Croatian Education and Teacher Training Agency, Agency for Vocational Education and Training and Adult Education, several Faculties of Teacher Education and other higher education institutions. Also a significant factor is the cooperation with the CARNet users - educational institutions at all levels. In this context this project represents a top-down approach for implementing ICT on a national level due to the stakeholders' share and scope of work in the project.

[33] Source: http://www.carnet.hr/education/e-learning_academy.

4 Conclusion

Rich expertise and the results of many activities that CARNet has implemented that are related to ICT educational practices in Croatian educational communities, show importance and inevitability of bottom - up approach which consists of five main activities: **Awareness, Education, Implementation, Promotion and Support.** With this approach teachers as change-agents are becoming key players, ready to accept the changes but also ready to build a community and adopt technology and new teaching practice. Several attempts at top-down approach that include some kind of ICT in teaching practice have shown that for this approach it is necessary to have strong teachers' communities, which are ready for ICT adoption, reliable technology to work with, constant educational and technical support and society as a whole ready to change.

On the other hand the top-down approach refers to influencing stakeholders and decision-makers that have the ability to implement ICT in the school curriculum. The eSchools project and its top-down approach has good bases concerning general technological availability, and all the work CARNet has done during the years, especially in creating teachers' communities ready to adopt new technologies into their teaching practice and to implement it into their school curriculum.

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Using a Mobile App as an Agent for Online Learning in Higher Education

David Smith

Charles Sturt University, Australia
davismith@csu.edu.au

Abstract: The delivery of online learning subjects and courses in higher education presents many challenges including learning design and the use of technology. Structuring the learning design to include the integration of technology and mentoring the involved lecturers foregrounds a comprehensible integration of appropriate technology with learning pedagogy. Trialing such a process in a large regional university in Australia has produced some initially positive findings creating an impetus for the next stage of the implementation and suggesting a successful model for the design of online subjects in higher education.

Keywords: Online learning, mobile app, learning design, mentoring

1 Introduction

As universities try and cater to a more diverse clientele and be more flexible in its learning approach, the platform of online learning assumes a greater profile as part of the university learning identity. The increasing emphasis on online delivery has presented a challenge to universities to provide a learning environment that is visually appealing but is also structured in a way that the learning is founded in sound pedagogical principles, addresses the learning needs of students as well as maintaining an academic rigour.

The foray into web-based education has tended to be dominated by the technology used (Bates, 2005) with pedagogical aspects and user impact considered later in the delivery of courses. The user experience of technology has tended to concentrate on the students examining issues such as ease of access to the platform, appearance and the functionality of the platform. It is only in recent times that the focus has flipped with a concentration on an understanding of learning and design and utilising elearning technologies accordingly (Laurillard, 2005). With pedagogy as the prime design focus, learning theory, curriculum and technology can be utilied and deployed for the maximum impact.

This paper presents a pilot study on the development of one education degree within Charles Sturt University (Australia) using a mobile application to facilitate the understanding of teachnology use and mentoring for lecturers in developing subjects for online delivery. The study describes the structure of the mobile app, a short description of the underpinning learning theory and the mentoring given to the lecturers on the use of the mobile app.

2 Learning Strategy and App Design

The implementation of the learning development strategy is based on a hybrid learning theory based on a behavioural and constructivist approach. Teaching methods, the prescribed curriculum, assessment and the learning environment are the key elements for learning design. The alignment of these components is of strategic importance in order to maximise the learning opportunities for the student. Ellis and Goodyear (2010) found that enhancing student learning depends upon the link between the student's experience of learning and the student's learning environment. This approach to learning is supported by De Freitas and Conole (2010) who suggest that content should not be 'delivered' to learners but 'co-constructed' with them. The suggestion here is that there a mutually beneficial partnership with a co-development of knowledge that can emerge through recognition of the learner and the system as partners changing, adapting and developing curriculum.

The Confluence of Learning (COL) model upon which the mobile application has been developed is a hybrid model drawing from bahavioural and constructivist theories. The model has six major elements that provoke exploration, investigation, creation and cognition. A short description of each element is listed in the Table 1 below with a set of curriculum development questions related to each, and a sample of **suggested technologies** that may be used.

Table 1: The major elements of the COL model

Creation	Information
Developing the course and subject: plan, dream and conceptualise. How will the learning you design fit the course/subject	**Considering the information that needs to be disseminated.** What information will be relevant, current, challenging, serve as stimuli, will it be

outlines? Use the occasion to utilise new research, new technologies and new collaborative structures in the learning design.

Exchange

Communicating information and dialogue between lecturer and student, student and student, student and expert mentor. What are the most appropriate modes of exchange to achieve particular learning outcomes? The use of Wikis, apps, and augmented reality to facilitate interaction and the use of bookmarking and repositories to identify and store knowledge.

Assessment

Providing the opportunity for the student to demonstrate their development of knowledge. What judgements can be made about the volume, nature and quality of learning? Can assessment be negotiated with students? In what modes can it be developed, is it flexible?

synchronous or asynchronous? The use of video lecture, Skype/connect, vodcasts/podcasts and other media repositories can orchestrate this exchange.

Reflection

Encouraging students to evaluate and challenge their learning through exchange with their peers and with other members of the educational community. What useful knowledge has been acquired in this interaction? How can it be transformed for use in other situations? The use of blogs, forums and e-portfolios allow for students to develop their thinking.

Professionalism

Encouraging the student to develop further in their professional practice and standing. Has the student developed a stronger connection with their professional learning community? Active connections to professional learning community websites and academic social media facilitate some of this development.

The development and implementation of the mobile application at Charles Sturt University is linked to the above learning framework with the design of the application influenced by the major structural components of the theory, **information, interaction, reflection and assessment**. The initial motivation to develop the application was linked to the **re-design** of two teacher education degrees in the Faculty of Education. Both these degrees have a large proportion of students studying the degrees in distance mode. The degree re-design involves lecturers being placed into writing teams and working with an educational designer and course leader to redefine the subject content and delivery. Once

developed there is potential to use the app across all faculties in the university indeed across all universities.

The use of the application by university lecturers is intended to meet the following expected outcomes;

- **Link** mobile technology with learning strategies
- **Assist** lecturers to match technology with specific learning tasks
- **Provide** lecturers with a range of technologies for learning contexts
- **Develop** in lecturers a confidence to use technology by incorporating an easy to use interface
- **Create** a platform that can be used across various faculties within the university

The TFOiL mobile application (fig1) has been developed for both **tablet** and **smart phone devices** and is available across android, OSX and windows platforms.

The app is designed in 3 layers with the first two layers described in Table 2 and the third and last layer not describe in this table being the technology applications available for each of the learning options;

Table 2: Description of the first two layers of the TFOiL application

First Layer: Refining the learning phase	Second Layer:
Information: Consider the information that needs to be disseminated. What information will be relevant, current, challenging, serve as stimuli, how ill it be developed, will it be synchronous or asynchronous? The use of video lecture, skype, vodcasts/podcasts and other media repositories can orchestrate this exchange.	• Formulating the focus • Formatting the information\ • Presenting the information
Exchange: Communicating information and exchanging dialogue between lecturer and student, student and	• Initiating inquiry • Developing thinking

student, student and expert mentor. The use of Wikis, apps, and augmented reality to facilitate interaction and the use of bookmarking and repositories to identify and store knowledge.	• Network building
Reflection: The capacity for students to evaluate and challenge their learning through exchange with their peers and with other members of the educational community. The use of blogs, forums and e-portfolios allow for students to develop their thinking.	• Analysing information • Evaluating ideas • Synthesising Findings
Assessment: The opportunity for the student to demonstrate their development of knowledge. Can it be negotiated, in what mode can it be developed, is it flexible?	• Accululating findings • Criterion • Formative

The application was developed in HTML5 and is currently located on the education delivery platform. The intended trial of the application is in two phases with a small group of lecturers in 2013 and a larger group of lecturers in 2014. There are three meeting/mentoring sessions scheduled for each group and each group has the support of an educational designer to counteract the lack of support often experienced by lecturers (Siragusa, 2007).

3 Pilot Study

The first iteration of the application was trialed in August 2013 with a small number of lecturers developing curriculum-based subjects for teacher education students as a forerunner to a larger pilot study to be conducted in April 2014. Each lecturer involved in the initial study had an iPad and the web app was downloaded onto the device. There were to be three briefing/mentoring sessions that involved explanation, assistance and sharing of ideas and all comments and suggestions involving the application use were to be recorded and then qualitatively analysed with the data to contribute to a larger case study.

A two-hour initial briefing (August 2013) was held to explain the design concept of the application i.e., linking various technology applications with

specific learning concepts. At first there was some resistance with the general opinion that there was to be some compulsion to use a standard technology to deliver the subjects, however, a further explanation about the use of different technology applications to support elements of online learning did convince those present that there was merit in the design. The app was demonstrated and each person then opened the app and with guidance opened every screen. The lecturers were then asked to develop the first two weeks of their subject in readiness for the next meeting. The comments about the app were reserved and most present wanted to trial the use of the app in the development of their sibject material. There was particular comment about remembering how to use the app after the information session and what assistance would be available if lecturers required assistance.

In the second meeting (September 2013) the lecturers were asked to identify the elements of the learning contained in their two-week sequence. These elements were then identified with the learning elements in the app and lecturers were then asked to select a technology that they might consider using with the app. There was an educational designer present at each of the meeting venues so that lecturers could ask questions or discuss ideas. Despite some lecturers with hesitant technology skills there was general approval voiced for the use of the app with comments such as ‘useful’, ‘easy to use’ and ‘enough choice’ mentioned at the meeting. Lecturers also commented on remembering how to access each level of the app and that the learning structure merged well with the themed development of the two week module. There was one common comment voiced and that was there needed to be an app that would display the technologies for their curriculum area not just learning. Some lecturers also asked whether students could use the app in their development of their own lessons as the learning framework would be useful the students to adopt in their lesson planning. Other comments referred to the updating of the app, would there always be a delay when accessing the technology link the first time and would the app be used across different faculties.

The final meeting (November 2013) was to allow lecturers to present the design of their subjects ready at the time of the meeting. Not all subjects had been completely finished, however, there was technology present at all learning stages. One telling comment from one lecturer was that the app and process had allowed that person to use technologies that they had not previously seen. When asked about the time factor involved in developing the subject one lecturer stated that it had taken extra time because they had to trial technologies they did not know, other lecturers claimed that the time factor was not significant. All

six lecturers remained positive in their use of the app and stated that they would use the app in the development of modification of their next subject.

The analysis of all comments from the three meeting sessions confirmed that the participating lecturers adopted and maintained a positive approach to the use of the app. One participant described the app as a lexicon of technologies matched to a series of learning strategies. Difficulties that were highlighted related not to the app but to the technology infrastructure such as broadband speed and WiFi connection and there was comment that for the app to maintain its relevance it would need to be updated. The findings from qualitatively analysing all feedback support the implementation of a larger trial with the app involving more lecturers and the development of a larger suite of subjects.

4 Discussion

The increasing migration to online learning for higher education, developing engaged learning environments, utilising technolgy affordances and developing lecturers' skill in subject design has created a tension to be addressed with careful planning. The pivotal role is assigned to the lecturer who is either developing or delivery a subject using technology. There is a need to not only assist the lecturer in the development of the subject but to move beyond technology skill acquisition and aim for an appreciation and understanding of the pedagogical underpinning of technology and learning and its primacy in course design.

The mobile app has been developed as an assitive technology and does not purport to replace the lecturer or house an entire learning solution rather it is a step in a planned process. The process involved acknowledging the lecturers' expertise in their subject discipline and engaging the lecturers in a process that provided assistance when needed but empowered them to merge a current and familiar practice with new technologies successfully. The next step will be to evaluate a larger pilot and disseminate those lecturer perceptions across the university before a full release of the mobile app.

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How to use technology to develop critical thinking skills

Antonella Poce, Annalisa Iovine

Università Roma TRE, Department of Education, via della Madonna dei Monti 40, 00184 Roma
apoce@uniroma3.it

Abstract: The Project stems from the results of a research project funded by the Italian Ministry for Education and Research, entitled Adaptive message Learning, with the aim of favouring and promoting the development of critical thinking skills in higher education students, from different areas of study, offering online cultural insights. The hypothesis to be verified aimed at establishing if, proposing cultural insights to students, critical thinking skills are improved, notwithstanding the field of study. This has been possible thanks to the creation of an ad hoc teaching and learning module, where different groups of students could access. Data collected show a positive impact of a model that wants to make a critical use of technology and, employing consolidated teaching and learning structures, put cultural insights democratically at everyone's disposal, which are essential to educate "a free citizen in a free republic" (Garin, 1957, p.157).

Keywords: critical thinking skills, online learning, content analysis, innovation, critical technology.

1 Introduction

The project on the development of a *technology* able to enhance critical thinking skills represents a follow up activity within a larger research project entitled *Adaptive message-Learning* project, which was funded by the Italian Ministry for Research and Education in 2009 and is still ongoing. The main aim of the project was the adaptation of the message of instruction, within higher education online environments. The partners involved are different Italian higher education institutions: 2 based in Roma (Università Roma TRE – Facultuy of Education and Università La Sapienza – Faculty of Medical Sciences) and one from Modena and Reggio Emilia University – Faculty of Education. The original idea, at the basis of the main project, was to implement automatic assessment tools to identify the learner's linguistic skills and thus to adapt learning materials

with an innovative strategy. What is the link between the tools devised according to the main project objectives and the development of a technology able to increase students' critical thinking skills? The tools, devised in the main project, focus on the understanding of reading and learning texts (passive lexicon) by the students. After two years of this kind of experimentation, we realised that it could have been useful to study and understand, instead, the relation between the passive lexicon (number of words known) and the active, productive lexicon (ability to use words in writing and argumenting). Our students, in fact, had great difficulties in writing, in reflecting, in developing critical thinking skills needed to make critical points in writing, especially. This is felt as a big issue, because society and the critical situation we are facing all over the Western world, these recent years, highlight the need to develop those skills, be creative and produce.

2 The Study carried out at UniRomaTRE

The research, *Contributions for the Definition of a Critical Technology*, developed at Roma Tre - Laboratory for Experimental Pedagogy, is set within the context of the Adaptive Message Learning Project and, and as well as implemented in higher education, aims to project its results into different settings, so that the results can contribute to improving other areas, such as lifelong learning and enhancing development in various fields of knowledge.

The project principally aims to assess the hypothesis that, in providing further cultural insights, according to well-established models (*lectio magistralis* – still employed as *tutorial* in Oxford and Cambridge– see below) on which to undertake guided discussions, coordinated by an experienced tutor, students' critical thinking skills can increase. This is made possible through the development of an *ad hoc* online module, *Critical thinking skills and reading of the classics*, made available to students in Education at Roma TRE University, as a first step.

A cultivated critical thinker can be identified (Paul and Elder 2002, p. 15) as one who:

- raises vital questions and problems, formulating them clearly
- gathers and assess relevant information and effectively interprets it
- comes to well reasoned conclusions and solutions, testing them against relevant criteria and standards
- thinks open-mindedly within alternative systems of thought,

recognizing and assessing

- communicates effectively with others in figuring out solutions to complex problems
- Considering the above definition, the project had the following objectives:
- to define a specific use of technology able to enhance critical thinking skills, through the preparation of teaching material to be provided online, according to a well-defined design that requires, in particular, texts to be: taken from prominent sources (classical and/or contemporary literature); introduced via presentation cards that position the author in space/time, so that the relevance of the topics developed by the authors through their life and work is clear; also presented through images, in order to underline the multimedia dimension
- to organize and coordinate guided discussions on a dedicated virtual space, provided to students for the above activity
- to collect the insights of the online discussions and analyze them automatically with lexicometric tools
- to measure the students' critical thinking capacity manually via an adapted Newman, Webb, Cochrane (1997) model (the adaptation consisted in the identification of a sample of categories we considered more suitable both to the objectives of the project and to the matching with the quantitative lexicon metric automatic analysis). This activity to be implemented by:
- asking students, at the beginning of the education proposal, to undertake a short essay test on a certain topic that is related to their studies
- repeating the short essay test at the end of the learning activity, and assessing, via the same analysis model, whether an increase in critical thinking is found
- collecting the data and preparing the research report

37 Education students undertook the pre-test (October 2012), which was a short essay on a text taken from Galileo, *Dialogo sopra i due massimi sistemi del mondo* (1632), and completed their work, as described below, on the e-learning platform dedicated to the project. On this platform, a series of lectures (I-II – V_VI), on some passages taken from Descartes, *Discourse sur la méthode* (1637) were podcast. These lectures were organised in an innovative way by reproducing a model (*lectio magistralis- tutorial*) that proved to be successful since medieval Bologna university, and has been replicated in different contexts,

including today's (Oxford and Cambridge tutorials, for instance). Each passage was presented taking into account the following phases:

- distinctio, presentation of the subject (by introducing the context, the author, the setting of the work)
- divisio textus, the analysis aimed at understanding the constitutive elements of the text
- collatio, a discussion of the pros and cons between students and the tutor
- questio, the text, following the analysis and the group/tutor discussions, is subject to a global and critical interpretation

Students were then asked to present their final contributions both on the platform and in public, while undertaking, in February 2013, the short post-test essay on another passage taken from Galileo, *Il Saggiatore* (1623).

3 Methods

The data analyses were developed along the double synchronic and diachronic dimensions, i.e. students critical thinking skills were analysed comparatively during the activity and in specific moments of their learning path (pre-test vs post test), and, moreover, a longitudinal comparison has been carried out (a.y. 2011/2012, 2012/2013, 2013/2014). In order to verify the evolution of student's critical thinking skills, we used the following research tools:

- a survey to indicate the descriptive data of participants. To promote an individualized approach centred on defined didactic objectives, we created a student profile with the most frequent values, which provided the operative instructions to the research group.
- Lexicometric analyses of the written productions of students. Pre-test and post-test, blog posts and comments, short essay test: all the written material of students was analyzed in-depth to define the lexical components that referred to the critical thinking categories identified by Newman, Webb and Cochrane's model. The written productions were analyzed along a temporal axis to verify if changes had occurred.
- Application and verification of the categories identified in the Newman, Webb and Cochrane's model. To integrate the quantitative-lexicometric analysis, the research group introduced a qualitative analysis of

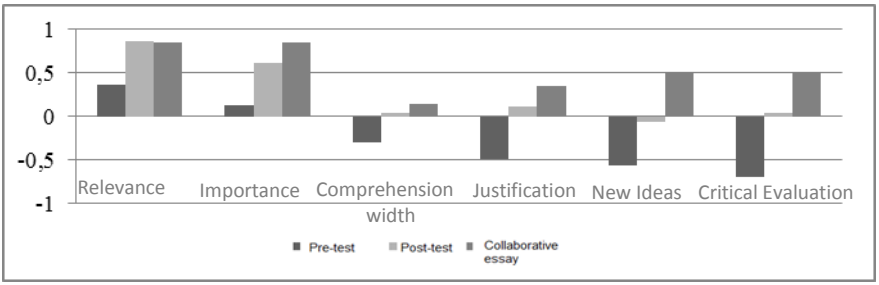
students' written productions to verify the presence or absence of these categories. The data obtained were inputted in an Excel worksheet with the categories in the rows and the positive or negative values for each student contribution in the columns. Furthermore, critical thinking contribution (CT) was calculated as the ratio between positive and negative values attributed to each category, through the following formula: CT= (x+ - x-) : (x+ + x-) where x indicates the category, x+ is referred to all statements contributing to the development of critical thinking as regards that particular category, and x- the not contributing statement always within the same category of analysis.

- Analysis of the temporal evolution of the collaborative final short essay. Students were divided into 9 groups to critically discuss the topics proposed by the tutor. They wrote a short essay, collaboratively, using an online shared Google Document, that allows making documents and sharing them with other workgroup members. Moreover, the system has a timesheet tool that allows to compare the various versions of the text. The research group could thereby estimate if an increase of critical thinking skills had occurred.
- An ex-post activity was carried out via an online survey addressed to participants who were asked to self-assess the competences developed within the project. The online interview was implemented with an online survey form by Google Doc.
- Individual student productions on a final essay on a passage taken from Il Saggiatore by Galileo Galilei.
- Comparison of the pre-test (October 2012) and post-test (February 2013) results, to identify the presence of a positive variation in the critical thinking contribution at the end of the project.

During the project, an online tutor moderated the discussions. The tutor was responsible for staying in contact with participants, motivating students in the activities according to the time schedule, directing discussion groups towards the achievement of objectives, while briefly summarizing the key points that emerged in each discussion. The tutor's actions therefore guided and facilitated the discussions and, at the same time, clarified the key points highlighted by each group, but without interfering with the contents of the discussions themselves.

4 Results

In order to assess critical thinking skills levels, the students' written productions were treated with an automatic lexicon-metric analysis, using the Taltac software, and with manual content analysis, through an adaptation of the Newman, Webb and Cochrane (1997) model. The main categories of the analysis include relevance, importance, introduction of new ideas, information and solutions, reference to personal experience and opinions, clarification of doubts, new knowledge, elaboration of new solutions, critical evaluation, practical use of new solutions, width of understanding. The early analyses concerned the essays produced on the passages taken from *Dialogo sui due massimi sistemi del mondo* by Galileo and from *Discours sur la méthode* by Descartes. From the lexicon metric analysis, mainly carried out to verify that the categorization used to classify the students' essays was adequate, emerged that pre-test, post-test and cooperative writing essays show, for every category investigated, a positive increase of critical thinking skills. As regards importance and relevance, the starting level is higher than every other category taken into consideration. Every other category, in fact, in pre-test results, shows negative values. The highest increase, at the end of the proposed activities, is connected to the categories of critical evaluation and novelty, which go, respectively, from an entry value of -0,69 to +0,04 and in the post-test from -0,56 to -0,06. The highest critical thinking values, anyway, have been recorded in the cooperative writing essay for every category considered and, in particular, for novelty and critical evaluation, categories which are more positively influenced, when working in group. The results, synthetized below, confirm the effectiveness of the model under investigation for Roma Tre Education students.



Graph 1: CT values per category in the pre-test, post-test and coll. writing essay. Critical thinking contribution (CT) was calculated as the ratio between positive and negative values attributed to each category, through the following formula: CT= (x+ - x-) : (x+ + x-) where x indicates the category, x+ is referred to all statements contributing to the development of critical thinking as regards that

particular category, and x- the not contributing statement always within the same category of analysis.

5 Conclusion

Project results enable us to draw some considerations.

First of all, we notice a substantial positive feedback, as regards the starting hypothesis, on the basis of which – giving cultural and structured insights - – students' critical thinking skills are improved. The gathered data highlight the positive elements of a teaching and learning model that wants to make a "critical" use of technology offering the opportunity to reflect through cultural insights, as it happened in Humanism and Renaissance times. The principles of humanistic education, indeed, are among the starting point of a study that, begun in 2011, wants to combine the prerogative of the *ratio* founding the main schools of a time, when education was thought to be "liberal, realised through those studies (humanities, moral philosophy and natural science) which are worthy of a free man". Nowadays technology can become a vehicle for such education and not an activity at the service of the market, which is an end in itself.

This study, as mentioned in the introduction, is a follow up of a wider research, which had as main objective that of adapting teaching and learning materials (texts and tests), according to the automatic exstimation of students possessed lexicon. Here the analysis is concentrated on how students are able to use that possessed lexicon and it has been applied to Education students based in Roma TRE. We still have a lot to do, especially if we consider that the students' linguistic competences in written argumentations are inadequate, most of all in the use of grammatical and syntactical structures. We already carried out other experimentations in different fields of study (Faculty of Engineerng University of Salento and in training (DHiTech training Programme – EU NOP funding) and we are in the process of analysing data and compare them with the ones herewith presented. We consider the search for new confirmation essential to identify the correct direction technology of instruction should take[34].

[34] This contribution is written by Antonella Poce apart from paragraph 2 by Annalisa Iovine.

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Guidelines and recommendations for successful implementation of OCW in virtual mobility

Edmundo Tovar Caro, Ana Dimovska

Technical University of Madrid, Spain
edmundo.tovar@upm.es

Abstract: The focus of the present paper is the creation of guidelines and recommendations for successful implementation of Open Course Ware that institutions could use when adopting and/or creating a virtual mobility programme. This paper is one of the results of a European education project funded by the Lifelong Learning Programme of the European Union called ´´Open Course Ware in an European Union higher education context: How to make use of its full potential for virtual mobility (later VM)?´´.

Keywords: Open Course Ware, OCW, virtual mobility, quality, policy, eLearning, Open Educational Resources, features, indictors, domains

1 Scope of the guidelines and recommendations for successful implementation of OCW in VM

This document represents a proposal of a quality model with guidelines and recommendations for the implementation of Open Course Ware in Higher Education Institutions. The general aim is to define some guidelines and recommendations for implementation of OCW by institutions in a context of virtual mobility. VM in this context is a form of learning which consists of virtual components shared through an ICT-supported learning environment that includes cross border collaboration with people from different backgrounds and cultures. The approach taken is to determine a set of recommendations that are extracted from a quality model that has been here proposed for the implementation of OCW in virtual mobility. Therefore, this quality model would take into account some acknowledged quality aspects in eLearning, production and reuse of Open Educational Policy, and at the end, the implementation of mobility programs.

2 State of the art

Given the lack of existence of a quality model in this area, for the development of this study various case studies were considered.

Therefore, the research falls into three categories: quality models related to Open Educational Resources or Open Course Ware, where we analyze some already existing quality assurance guidelines for Open Educational Resources. Second, institutional policies and guidelines on how Open Course Ware should be incorporated into Higher Educational Institutions, and in the third category we researched standards and policies on quality in elearning and publication of courses.

One of the key aspects when implementing OCW should be the identification of certain policy implications of a decision to harness OCW. When considering such policy implications we refer to policy changes such as clarity on intellectual property right and copyright of works, Human Resources policies, Information Communication Technology and access to those policies, considering also how the promotion of OERs is done (UNESCO, 2011). These guidelines can be easily linked to larger HE policy frameworks (UNESCO, 2011), (Sero Consulting, 2013), integrating more explicitly the role of student bodies and incorporating the role of academic staff in the guidelines for implementation of OCW in virtual mobility.

Another study of policies for OER uptake (Sero Consulting, 2013), for instance, tells us that there should be always a competitive innovation fund to develop new universities each year, with a commitment to low-cost online education. HE universities every day, more and more are considering approximations to elearning and based on OER, in order to obtain more potential students and to promote institutions. This way, traditional distance learning is seen as beneficial. This fact is important in order to improve the viewpoint of universities, and how they develop and see online studies and informal learning.

On the other hand, we analyzed different approaches on how quality could be assured in e-learning programs developed by institutions. Namely, ECBCheck provides the opportunity for institutions that offer OCW e-learning, the possibility to review their offerings against internationally agreed quality standards; so that they could assure there is a clear information about the program they offer (EFQUEL, 2013a). In addition, UNIQUe, as a second project of EFQUEL, offers certification for institutions and institutes (EFQUEL, 2013b). The analysis also included surveys on OER quality and pedagogy in higher education that were later used to obtain a broad overview and to analyze some very specific examples in the context of a summary of general trends in quality of

eLearning and virtual mobility. Moreover, some of the aspects we identified that constitute quality in online learning, and in the same are applicable to OCW are: course development and structure, student and faculty support, teaching and learning instructions, technology evaluation and student examination security policy. A very important aspect in quality assurance for e-learning is that institutions that provide OCW, must have established a clear vision and commitment provided from leadership; sound planning and finally, they should embrace partnerships involved in programmes. Two additional references were considered in relation to the above mentioned quality aspects: the guide to quality in online learning published by Academic Partnerships (Butcher, 2013); and the quality assessment document for eLearning presented by EADTU (Williams, 2012). Both of them showed some quality criteria key concepts that we should have in mind when integrating guidelines on eLearning and virtual mobility.

Finally, the third viewpoint we considered are guidelines and quality recommendations for the design of programmes for virtual mobility. When institutions aim to offer virtual mobility trough OCW, they should consider a virtual mobility process which includes and defines: curriculum designing strategies, communication strategies, preparation strategies, course delivery strategies; and recognition and certification strategies. The VMColab Project suggests a typical quality model based on criteria grouped in common areas to each of the phases of the Virtual Mobility (VM) model (Volungeviciene, 2013). We evaluated each of these criteria in order to select or prioritize virtual mobility quality criteria. This evaluation had a special highlight to our ten families of scenarios for virtual mobility and their overall descriptions.

The product of this research led to a combination of institutional best practices and some key quality aspects. We present this combination of best practices and aspects in the form of a generic quality model for the implementation of OER in the context of virtual mobility.

3 Proposal of a generic quality model for the implementation of OER in the context of virtual mobility

3.1 Proposed structure of the quality model

The structure of the model we developed is organized following the EFQM Excellence model (EFQM, 2013). This model served as a framework to organize the quality guidelines presented on *Table 1* below. The reason why we chose to

use the EFQM model, and why it would be suitable for the purpose, is simply because of the fact that it could be applied to any organization, regardless of size, sector or maturity.

Following this model, we defined five *domains*; each of them consisted of two elements: *features* and *indicators*. By *domains* we understand and classify some general key areas needed to assure quality in HEIs. *Features* for instance, are processes to ensure quality for VM programmes´ implementation with open educational resources. Last but not least, *indicators* basically represent quality model controls that are recommended to achieve the objectives related to quality.

3.2 Description of the proposed quality model

In continuation and as explained in 3.1, the domains defined following the EFQM model of excellence are presented, as well as some indicators related to each feature within the related domain.

Due to the lack of quality indicators for the implementation of OCW in the proposed model, we consider those precedents to OER, eLearning and to VM programmes.

DOMAINS	FEATURES	INDICATORS
Leadership and Strategy	The role of virtual mobility in the academic strategy	Assure that the virtual mobility strategy is compatible with the educational strategy of the institution. Provide means for communicating legal and ethical responsibilities to staff and students. Create Intellectual Property rights and copyright of works during the course of study and explain how these may be shared or used by others.

People		Ensure procedures which will meet student expectations are in place: students need to develop as self-regulated learners, with reduced dependence on teachers. Provide training of academics in order to ensure that competences of teaching staff are developed, that there is a certain framework condition for producing and using educational contents. Ensure that interactivity and communication is available. Both teachers and local HEIs implement feedback and provide feedback tools for learning on track learning process and ensure equal participation.
Resources	Technology requirements and interoperability	Ensure that the virtual learning environment runs on an adequate server, which guarantees its stability; and that it is accessible through different browsers and operating systems. Provide accessibility for users with special needs. Ensure that the virtual learning environment is fully functional and supportive to the learning process and cultural exchange. Ensure that OCW creators aim to develop high quality educational materials and cost-effective tools that will facilitate the delivery of content for the global community of learners.
Processes, services and products	Joint Curriculum design	Provide target audience orientation. This means that the programme takes into account the learning needs of the target audience. Ensure that all staff involved in the course design holds appropriate academic titles within the university structure. This could include the review whether they have the same career advancement prospects as general staff, whether they have the same rights with respect to accessing resources and fund for research and personal development, etc. Ensure that the technical requirements of the system for course delivery are monitored on a regular basis.

Key results: customers, people and society	Evaluation and review of programme quality	Ensure that the achievement of learning objectives is systematically and regularly checked throughout a programme quality assessment process. Provide a provision of tutorial support using a diverse range of media for communication. Ensure that a teacher signature, as well as the ECTS[35] gained at host institution are transferred and recognized at the home institution.

Table 1: A quality model for using OCW in VM

3.3 An example of domain and guidelines. Domain of Leadership and strategy

Usually virtual mobility programmes are promoted and endorsed without a clear understanding of the strategic objectives they are intended to serve. Strategic management should be treated as a key challenge for institutional leaders, with respect to strategy, because it ensures that institutional strategy drives virtual mobility strategy. The documents analyzed (UNESCO, 2011), (Sero Consulting, 2013), (EFQUEL, 2013) suggest that institutions should have defined policies and management processes that are used to establish strategic institutional objectives, including those needed for virtual mobility. They should offer an institutional strategic plan, which would include the roles e-learning will play in the overall development of the institution. Furthermore, in the policies for HEIs mention that it is crucial to develop institutional strategies for the integration of OERs. They also highlight the importance of having institutional policies and practices; and the creation of flexible copyright policies.

For this reason, strategic management is identified as the first domain area to treat when implementing OCW for virtual mobility. Even though there are many reasons why strategic management should be introduced in virtual mobility, when speaking about OCW we identify the following key areas where it would be extremely helpful: Meeting the service expectations of students, staff and stakeholders, enhancing the quality students´ learning experiences, improving access and flexibility of study for students, increasing enrolments by targeting new groups of potential students and delivering teaching services more efficiently.

[35] ECTS: grading scale; a grading system defined in the European Credit Transfer and Accumulation System (ECTS) framework by the European Commission.

For the feature “Policies and plans for using virtual mobility” for the implementation of OCW practices first and foremost there should be an institution-wide engagement with the development of policies and plans for the achievement and enhancement of virtual mobility. Having a policy and a plan developed for virtual mobility, could assure a strong strategic direction at the highest educational level of the institution.

As a consequence, some of the guidelines elaborated for this feature of this domain are:

- The institution identifies a group of key staff responsible for formulating, evaluating and developing institutional policies and plans relating to OER in virtual mobility.
- All policies and plans related to OER strategic management should be communicated clearly to stakeholders.
- The institution should have a means for communicating legal and ethical responsibilities to staff and student.

4 Conclusion

Given the absence of best practices and/or recommendations for the successful implementation of OCW in virtual mobility, made us elaborate a proposal for a quality model for this purpose.

The quality model presented in this paper (see *Table 1*) is described the point of view of an institution, ie. it should serve to institutions when they aim implementing OCW in virtual mobility. It was formed to provide and promote guidance to those institutions seeking to achieve it. This is achieved through a set of three integrated components which comprise the quality model: *standards and policies on quality in elearning and publication of courses*, *standards and policies on quality in virtual mobility*; and *OCW related quality criteria*.

The quality model for successful implementation of OCW in virtual mobility provides a holistic view of the institutions, and it can be used to determine how all the different domains and indicators fit together and complement each other. Institutions therefore could use it depending and adapting it to their needs, as a guideline for developing excellence in virtual mobility.

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Development of Quality Standard for eLearning Courses in TVET Sector, Sri Lanka

J. A. D. Janaka Jayalath

Director / Information Systems, Tertiary and Vocational Education Commission, Sri Lanka

Abstract: Tertiary and Vocational Education Commission (TVEC) as the apex body for quality assurance and accreditation in Technical Vocational Education and Training (TVET) sector in Sri Lanka, embarked on Development of Quality Standard for eLearning Courses in TVET Sector. This project was handled with the support and leadership of the TVEC UNEVOC Centre. Delivery of TVET courses through distance learning, eLearning and blended learning have now become poplar in Sri Lanka. A wide use of these methods makes it possible to ensure equal possibilities of receiving an education and of a continuous further training for all people regardless of their place of residence, social and economic status. Quality assurance of eLearning courses in TVET sector in Sri Lanka is a responsibility of TVEC as the apex body. Development of quality standards has been a long felt need for accreditation of eLearning courses. To fulfill this requirement, TVEC has developed quality standards with the stakeholder participation including private and public training organizations, industry and universities by benchmarking ECB Quality Check in Europe. Necessary training on eLearning development and implementation and EFQUEL's ECBCheck was provided by GIZ (former InWEnt) in Germany.

Keywords: accreditation of eLearning courses; quality assurance of eLearning programmes; quality standards

1 Overview of TVET System of Sri Lanka

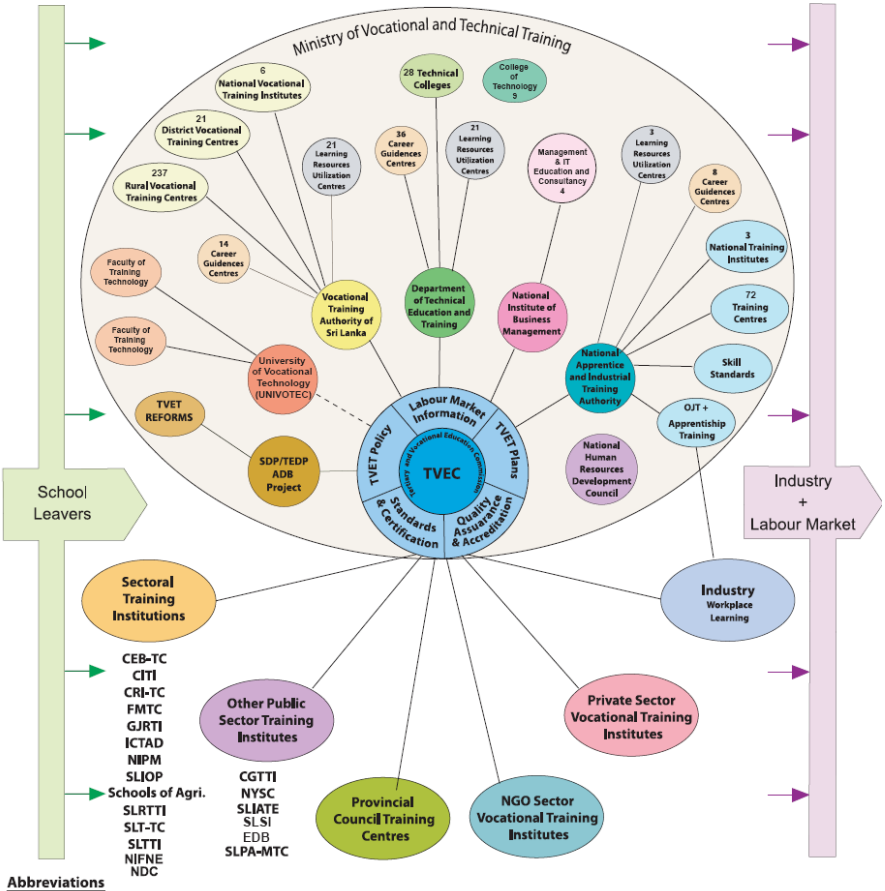
Technical and Vocational Education and Training System of Sri Lanka comprises of few frameworks such as TVET institution framework, Quality Assurance Framework and National Vocational Qualification framework. Apart from these frameworks, career guidance system, apprenticeship training system, learning resource development and utilization system are supporting systems which monitored and regulated by Tertiary and Vocational Education

Commission (TVEC) (TVEC, 2014) established under Ministry of Youth Affairs and Skills Development (MYASD).

As shown in the figure, any TVET system ends with the Labour Market, where “demand for” and “supply of” labour is matched. According to the labour market, TVET policies are formulated to minimize the gap between the demand and supply of labour (TVEC, 2014). TVET plans are then setup according to the TVET policies applying appropriate strategies. Proper training standards and accreditation criteria are key areas for implementation of a quality assurance in TVET system. Quality Management System (QMS) will define required quality aspects of particular TVET system (QMS, TVEC, 2014).

In Sri Lanka, public TVET institution framework consists of 374 training centres under 5 major training providers called University of Vocational Technology (UNIVOTEC), National Institute of Business Management (NIBM), Department of Technical Education and Training (DTET), National Industrial and Apprenticeship Training Authority (NAITA) and Vocational Training Authority (VTA). Apart from above there are 58 training centres under 21 different ministries and about 700 training centres in private and NGO sector registered under the TVECquality assurance framework (Jayalath et. el.2009).

TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) SYSTEM OF SRI LANKA



Abbreviations

CEB-TC	- Ceylon Electricity Board - Training Centre	NIPM	- National Institute of Plantation Management
CGTTI	- Ceylon German Technical Training Institute	NYSC	- National youth Services Council
CITI	- Clothing Industry Training Institute	SLIATE	- Sri Lanka Institute of Advance Technical Education
CRI-T	- Coconut Research Institute - Training Centre	SLIOP	- Sri Lanka Institute of Printing
FMTC	- Farm Machinery Training Centre	SLPA-MTC	- Sri Lanka Ports Authority - Mahapola Training Centre
GJRTI	- Gem & Jewellery Research and Training Institute	SLRTTI	- Sri Lanka Railway Technical Training Centre
ICTAD	- Institute for Construction Training and Development	SLT-TC	- Sri Lanka Telecom - Training Centre
INGRIN	- Ingrin Institute of Printing and Graphics Sri Lanka Limited	SLTTI	- Sri Lanka Television Training Institute
NIFNE	- National Institute of Fisheries and Nautical Engineering	NDC	- National Design Centre
SLSI	- Sri Lanka Standards Institute	SDP	- Skills Development Project
EDB	- Export Development Board	TEDP	- Technical Education Development Project

2 Quality Assurance in eLearning

There are nine elements considered in Quality Assurance of eLearning as described in Report on eLearning Quality published by Mizuho Information & Research Institute (Mizuho, 2009), and few important quality objects are responsibility, assurance object, evaluation layer and quality assurance contents. The contents of the object need to be specified for quality definition.

Some other important objects are term of assurance, activities for assurance and an object categorized whether if it is general or specific activities. The purpose of audits is also an important aspect in quality assurance. The final object, “Audit criterion" is "Degree of organizational and systematic actions". This means the purpose should be judged from the viewpoint of degree of organizational level and systematic level. Quality assurance agents and relationships presented at conference on “Cost and financing of eLearning”, by Mr. Dieter Dohmen, FiBS forum in August 2005 (Mizuho, 2009) is very useful to observe simple relationships between different agents.

The above discussed criteria are to be applied when an eLearning is driving its full potential and the institutes that embark on eLearning quality should implement quality objects under available quality management system in the organization. TVET sector in Sri Lanka has now started to implement ISO 9001:2000 Quality Management System in accordance with the guidelines established by the Tertiary and Vocational Education Commission. Therefore TVEC as apex body of the TVET sector, is mandated to develop National Standard for registration and accreditation of eLearning courses with the stakeholder participation.

3 Overview

This “Quality Standards for e-Learning Courses” are developed to comply with accreditation requirements of online, distance or elearning courses in TVET sector in Sri Lanka which benchmarked with European Foundation for Quality in eLearning (EFQUEL) produced eLearning Capacity Building(ECB check) model.

4 Purpose of Quality Standards

Lack of quality assuarance of eLeaning programmes has created issues in recognition of online courses in Sri Lanka (jayalath et. al. 2009). Therefore TVEC as the mandated institution for quality assurance for TVET sector in Sri Lanka has embarked on development of quality standards for online courses. The Quality Standards for e-Learning are intended to provide a measure of quality assurance for online courses in order to serve the e-learning course deployments in the TVET sector. These standards are published among training centers that wish to offer online or blended learning courses within the scope of TVET programs.

5 Introduction

Under the development of Quality Standards for the eLearning Courses in TVET sector, a subcommittee was formed to study quality criteria for the eLearning courses. Preparation of the quality standard was done by benchmarking European Foundation for Quality in eLearning - ECB (eLearning Capacity Building) model. The criterion within that model was used for preparation of quality checklist which was customised to the eLearning courses of TVET sector in Sri Lanka.

6 Objectives and Quality Framework

The objectives of this project were:

- To develop a quality criteria for the courses offered by eLearning mode in TVET sector.
- To develop a plan to implement quality systems to the eLearning courses
- To develop a plan to maintain accreditation through quality standards for eLearning courses in TVET sector

Quality Framework Check List:

A Information about and organization of the programme

A.1 General description, objectives and programme organization

A.2 Technical and organizational requirements

B Target Audience Orientation

C. Quality of Contents

D. Programme/Course Design

D.1 Learning Design and Methodology

D.2 Motivation

D.3 Learning Materials

D.4 eTutoring

D.5 Collaborative Learning

D.6 Assignments & Learning Progress

D.7 Assessment & Tests

E. Media Design

F. Technology

G. Evaluation & Review

7 Plan and Implementation Schedule

For the fulfillment of the courses, different phases were identified according to the terms of references. Three levels for the delivery of the online courses were evaluated to ensure the quality of the courses; Level 1: As a basic Level content sharing, Level 2: Increase accessibility or outside usability and Level 3: Increase the learning process with different learning resources.

8 Lessons Learned and future work

In this exercise and study, it was identified that learning platforms and learning software, institutional responses to the use of e-learning, e-learning materials development, academic approaches and tutor skills are the most important factors in quality assurance. Eventhough most of the institutes are interested in eLearning courses for internal staff development as well as offer eLearning courses as support for skill development, absence of quality standards and awareness among employers caused low reliability in elearning couses.

As per the future work is concerned, the automation of quality measurement system is a necessity to implement quality assurance in eLearning. Also development of a quality manual which contain quality processes, procedures and checklists will be immensely helped to overcome the barriers for implementation.

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eMundus: Fostering international Higher Education collaboration through ICT and Open Education

Fabio Nascimbeni[1], Rory McGreal[2], Grainne C Conole[3]

[1]Menon Network, [2]Athabasca University, [3]University of Leicester

Abstract: This paper presents the work of the eMundus project that began in October 2013 and reports on the project activities to date. The aim of eMundus is to strengthen cooperation among HE institutions from the involved regions (EU, Brazil, Mexico, Russia, Indonesia, Canada and New Zealand) and globally, by exploring the potential of Open Approaches (e.g. OER, MOOCs and Virtual Mobility amongst others) to support long term, balanced, inter-cultural academic partnerships for improving learning and teaching through Open Education approaches. The project's vision is that Open Education should not be seen solely as a solution to the urging challenges of reducing the unitary cost of higher education - moving towards a "market-oriented" global higher education system, but rather as a way to help establish long-term international partnerships, aiming for an open international setting where universities cooperate on the basis of their capacity not only to attract international students but to meaningfully share experiences with counterpart universities.

Keywords: Open Education, Virtual Mobility, OER, MOOCs, higher education, international cooperation.

1 Context and background of eMundus

The higher education world is nowadays the subject of intensive challenges, where the pressure to perform placed both on HE institutions and on their graduates has increased, coupled with budget cuts, especially in those countries most affected by the actual economic crisis. The impact of this pressure is partly one of efficiency, restructuring and innovation, while also contributing to the strengthening of flexibility. Universities in Europe and elsewhere today operate in a global environment and are challenged to update and internationalise their study programmes, to establish partnerships, to engage in mobility and, at the same time, to do all of this in a cost-effective way, keeping the cost of HE for learners and governments at a reasonable level.

In this context, the concept of Open Education is gaining ground, often seen as a solution to the need to educate an increasing HE population within the existing financial constrains, while Open Educational Resources (OER) and Open Educational Practices (OEP) are increasingly being considered as an option by universities around the world. In its Communication "Rethinking Education" (European Commission 2012), the European Commission stated that: "technology offers unprecedented opportunities to improve quality, access and equity in education and training. It is a key lever for more effective learning and to reducing barriers to education, in particular social barriers. Individuals can learn anywhere, at any time, following flexible and individualised pathways." This can imply "scaling up the use of ICT-supported learning and access to high quality OER". Further, promoting the creation and use of OER is high on the agenda of international organizations, e.g. the OECD, UNESCO and the Commonwealth of Learning (COL). Governments, such as the Netherlands, Poland, Indonesia and the USA have started to make large investments in developing Open Educational Resources.

According to Curran (2004), ICT strategies (including Open Education Resources and Open Education Practices) adopted by universities respond to three most frequent objectives: a) widening access to educational opportunities, b) enhancing the quality of learning and c) reducing the cost of higher education. The last point is particularly important, since it responds to the recognised social demand for equity in access to and progress/completion of higher education programmes, challenging universities to find new ways of organising/supporting learning. The use of ICT allows institutions to combine efficiency with quality and support administrative and pedagogical processes.

While agreeing with this, the eMundus project consortium partners believe that ICT and Open Educational Resources and Practices are having a broader impact, which touches upon the very core of the higher education sector, affecting how universities expect and plan their future. The project partners believe that OER and OEP should not be seen only as a solution to the urgent challenges of reducing the unitary cost of higher education - moving towards a "market-oriented" global higher education system, but also as a way to help establishing long-term international partnerships, aiming for an open international setting where universities cooperate based on their capacity not only to attract international students but to meaningfully cooperate with counterpart universities.

2 MOOCs and Virtual Mobility: drivers for innovation in Higher Education collaboration

The above is particularly true if we consider two rather recent developments in terms of ICT-enhanced open education, on which the eMundus project will focus its activities. Massive Open Online Courses (MOOCs) have proved in recent years to be an alternative source of access to free courses from top universities through the Internet. These MOOCs aim to provide a quality learning experience using some of the best professors in their respective fields, and want to offer an adequate platform for interactive learning. This can include sets of videos with integrated questionnaires, weekly assignments, discussion forums, programming environments and interactive simulators, final grading exams, etc. At the end of the course, the students that have completed the requirements set by the course can be awarded with a certificate. Most of these certificates are currently offered for free, but some platforms are offering validated certifications for a fee.

MOOCs can be an extremely powerful tool allowing ubiquitous access to higher education. They can reach - for example - good students from remote places who find difficulties in accessing higher education due to the high costs and/or long distances to universities. MOOCs can also make learning possible for people with special social situations, for example parents with little children or persons who need to work and cannot attend classroom-based courses. For them, MOOCs could become the norm for accessing higher education. In addition, MOOCs are being used by students or professionals who want to complement their knowledge or be in the continuous higher education learning loop to excel in their professions. MOOCs will leverage the opportunities for people who do not have the chance to access the privileged knowledge offered by top universities, making higher education ubiquitous and broadly accessible no matter the socio-economic status, the family situation or the distance to those Universities.

A second development is Virtual Mobility (VM). Internationalisation of higher education provision is a “natural” reponse to the globalisation of the economy and multiculturalism. Researchers, lecturers and students are engaging in different virtual mobility practices among Higher Education Institutions of different countries/continents. This VM is, to a large extent supported by ICT, having significant potential to address several objectives within the modernisation process of HEIs, VM can:

- complement the physical mobility of students and researchers;
- enhance research collaboration;

- enforce capacity building;
- provide further opportunities for postgraduate students and researchers, to deliver joint titles;
- support the collaborative development of curriculum; and
- exploit the full potential of ICT.

Ultimately, VM is a facilitator and aggregating element providing overall coherence to HEIs fundamental activities. VM supports:

1) students from different countries who mainly study in their local (chosen) university with their fellow students and without going abroad to study for long periods of time;
2) interaction and communication among groups of students/teachers based in different countries to discuss diversity depending on national/local/contextual elements;
3) cooperation in designing, implementing, course programme evaluation;
4) joint choice of subjects to be studied through VM;
5) joint curricula design - which adds value in terms of reciprocity and mutual benefits between the HEIs in the different countries;
6) joint production of learning resources (through reflective tools, non-interactive tools, collaborative tools, communication tools, social networking tools);
7) joint titles - wherever possible; and
8) relationships of mutual confidence.

The emergence of MOOCs and Virtual Mobility practices are challenging the well established idea of universities as the main “guardians” of knowledge stored in libraries with limited access. VM is opening new perspectives in terms of where the “core business” of universities is. Is it producing and delivering content? certifying learning achievements? supporting students to become lifelong learners? and/or teaching students how to make sense out of a wider and wider availability of content. As said before, the introduction of these innovations can have a “marketization” impact on the HE world but can also contribute - if properly managed and planned – to the creation of a more balanced international higher education field, where intercultural collaboration is guaranteeing the development of skills and competences of graduates even those without the opportunity of moving from their home bases.

However, for this to happen, three gaps should be closed:

- the “understanding gap”, meaning that recent MOOCs and Virtual Mobility developments can be mapped, analysed and coherently integrated as part of an international collaboration. Successful patterns can be used as examples to extract recommendations for change, targeted both to policy makers and to HE stakeholders;
- a “sharing gap”, meaning that flows of information among MOOCs and Virtual Mobility experts and practitioners from different countries and world regions must be made smoother and must be based on recognized “good practices which work”;
- a “mainstreaming gap”, meaning that the successful practices of supporting international collaboration through MOOCs and Virtual Mobility must be made visible as ways to popularise a meaningful bottom-up use of ICT for learning. This could be the basis on which future scenarios and visions of HE international collaboration are built and discussed.

3 The eMundus project

The aim of eMundus is to strengthen cooperation and awareness among European Higher Education Institutions and their strategic counterparts in other countries such as Brazil, Mexico, Russia, Indonesia, Canada and New Zealand, by exploring the potential of MOOCs and VM to support long term, balanced, inter-cultural academic partnerships. The project is run with the support of the Erasmus Mundus programme of the European Commission.

To reach this aim, the project will work towards three specific objectives:

1. To map the global state of the art of MOOCs and Virtual Mobility developments (considered as two key dimensions of the Open Education revolution in higher education) both in Europe and in the involved countries, facilitating the identification of successful patterns of ICT-enhanced international collaboration.
2. To foster global sharing of knowledge, tools, practices around MOOCs and VM, stressing their impact on HE internationalisation and on fundamental issues such as employability, quality assurance, credit recognition, joint degrees.
3. To promote and mainstream working practices of MOOCs and VMs as a way towards XXI century academic cooperation, making sure that the best practices of the world leaders in the field are transferred to

universities which are starting to adopt MOOCs and Virtual Mobility as strategies for their internationalisation.

Being an Erasmus Mundus project, eMundus has also the underlying objective of promoting the attractiveness and the awareness of the excellence of European Higher Education area. The project will do so not by promoting European solutions as "the best way to do things", but by contributing to put Europe in a central position in the MOOC and Virtual Mobility debate, acting as a facilitator for the most promising ideas and practices to be discussed, adapted, and possibly adopted. In doing so, eMundus will support intercultural development of European curriculum components and will generalise successful practices of HE cooperation, based on mutual trust and specialisation, aimed at promoting the emergence of excellence in European HE and, at the same time, broaden equity and accessibility of world level study programmes. Within eMundus, interculturalism occupies a core position, because of its dialogic undertone, seen as a more dynamic alternative to the Cartesian mono-logicality, which is apparently affecting multiculturalism. This is particularly important when facing actual EU challenges; for example, the inter-cultural curricula development on migration issues (welcome and integration policies) would provide a high-quality academic programme investigating that actual issue, providing a more multifaceted picture and strengthening best practices exchange to tackle a common and highly sensitive matter.

The broadness of the project scope – both geographically and thematically - is justified by the need to integrate, in a comprehensive conceptual framework and multi-disciplinary approach, what is now a large but fragmented body of knowledge. In addition to this, the eMundus consortium believes that a major systemic effort to reposition open education and ICT within current and future HE collaboration practices is now important, and this cannot be achieved by a fragmented research agenda which looks at many detailed aspects without linking its achievements to the present "challenge of relevance" that HE systems have to cope with.

4 The eMundus call for action

Preliminary work carried out by the eMundus partnership has demonstrated that a number of efforts exist which are trying to close the gaps presented above, but they are not coordinated nor properly articulated to reach the desired impact at the global scale. Some of these efforts focus on the content side of Open Education, others on the mechanisms to enhance students and staff mobility

through ICT, but rarely an action tackles both these dimensions. Further, some real-life cases of integration of different universities around the OER concept exist, such as the "OER universitas" hosted by the OER Foundation in New Zealand, which is part of the project consortium, and which supports a sustainable partnership between accredited universities, colleges and networks, which aims to support free learning for all learners with pathways to gain academic credit from formal education institutions around the world. All the eMundus partners share the importance of running such an integrated exercise with a sense of urgency. This is crucial if we want to transform the impressive possibilities offered by Open Education into tools for an equitable, efficient and participative HE international collaboration scheme.

The project consortium is aware that it is not possible to reach its objectives without engaging as many stakeholders as possible, and for this reason intends to work in a fully open and collaborative way. The idea is to engage a number of "eMundus Community Partners" from the very beginning of the project, and to clearly propose a number of ways they can contribute to the project work. To do this, eMundus has shared its roadmap for action in the www.emundus-project.eu website, and is calling for interested parties to join.

All project results will be co-developed and published through the Wikieducator portal, allowing users to comment and enrich the eMundus outcome. Further to this, there is an open call for Community Partners and they are invited to propose additional activities that they can organise in their own countries and settings replicating the mapping, the webinars and/or the tool gathering of eMundus. The final objective of this open approach is to be perceived not only as a project with a fixed duration and limited objectives, but rather as a trigger for broader debates, knowledge exchanges and best practices mainstreaming, to make the project vision a reality.

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Project Presentations

Selected and approved after Open Call for Presentations

All projects in alphabetic order

A Quality Platform for Post-traditional Higher Education

Aim and objectives of the project:

Fresh approaches to quality assurance are needed for the emerging innovations that we call 'post-traditional' higher education. Higher learning is provided from different sources, MOOCs, OERs, competency-based education, experiental learning, shorter courses. The mission of CHEA's international quality group (CIQG) is the quality implications of these innovative developments. A new tool, the CHEA "quality platform" is being piloted to review the quality of post-traditional provision.

Main target groups of the project:

Colleges and universities, quality assurance agencies, employers, students

How does the project contribute to learning innovations and learning quality?

It is in itself an innovation in quality assurance to deal with new providers of higher learning.

What are the main outcomes of the project?

The Quality Platform amended through the pilot phase as an innovative tool to apply to new providers of higher learning.

A short quote: What is most important for learning innovations & quality today?

Learners need the assurance that post-traditional higher education is based on systematic processes, authentic content and credible assessment.

More information about the project is at: http://www.cheainternational.org

Main contact: Stamenka Uvalic-Trumbic [suvalictrumbic@gmail.com], Sir John Daniel [ODLSirJohn@gmail.com]

Agricultural Alliance for Competence and Skills based Training (ACT)

Aim and objectives of the project:

ACT wants to a) facilitate and accelerate a better match between the needs of the agricultural labour market and the vocational educational training opportunities; b) respond to the demand for lifelong-learning in the agricultural sector; c) contribute to making definitions of competences reusable and accessible across learning and recruitment systems.

Main target groups of the project:

Family & industrial farmers, VET providers, VET policy makers in agriculture

How does the project contribute to learning innovations and learning quality?

By providing a reference framework to detect and address skills gaps

What are the main outcomes of the project?

The "Pathways for Agricultural Competence and skills based Training" (PACT)-framework to reduce the mismatch between new job profiles and existing skills in the agricultural sector and to improve the agricultural curriculum design and delivery by innovative VET services and broad

A short quote: What is most important for learning innovations & quality today?

To leave behind pure economic reasoning and to develop a comprehensive view on learners' development

More information about the ACT project is at: http://www.act-now.eu/

Main contact: Thomas Kretschmer [thomas.kretschmer@icb.uni-due.de]

CPTK Web quest in Teachers Training

Aim and objectives of the project:

The CPTK frame is a very important structure for Training Teachers in the Knowledge Society. But Training by WebQuest in the most four relevant aspects of their profession, ensures the possibility to be adaptive at no matter teaching medium and tool, or e-profession.

Main target groups of the project

First year teaching teachers, teachers, mentors, tutors, trainers

How does the project contribute to learning innovations and learning quality?

Adapting teaching activity on mediums and tools and e-professions who will emerge. Innovations will also be in the field of adapting revolutionary tools to teaching and training.

What are the main outcomes of the project?

1. to make a professional guide for teachers, for adapting to all e-professions in teaching;
2. to realise some guides for using technology, and didactics, and subject contents to excellence in teaching

A short quote: What is most important for learning innovations & quality today?

Knowing all aspects of your teaching job, helps you to improve also undiscussed points from emerging theories.

More information about the TPCK WQ TT project is at:

http://www.catalinanicolin.tripod.com/

Main contact: Catalina Nicolin [catalinanikolin@yahoo.com]

Early Change: Professional Development of Early Childhood Educators in Portugal (Early-C Portugal)

Aim and objectives of the project:

Aims: To enhance professional development of early educators through self-assessment skills; to evaluate early childhood education environments. Objectives: To collect empirical data for assessment of quality in preschool education; to record a wide range of 'good practices' implemented in early childhood classrooms of six European countries.

Main target groups of the project:

Early childhood educators were responsible for assessing structural and process quality and for recording examples of 'good practices'.

How does the project contribute to learning innovations and learning quality?

An open access e-book will function as a resource where different professionals in early childhood education will find a collection of 'good practices' implemented in various socio-cultural frameworks.

What are the main outcomes of the project?

The 'good practices' will be dissiminated through a Web-site and an E-book. Some Portuguese examples will be analysed using as a framework the Portuguese Preschool Curricular Guidelines.

A short quote: What is most important for learning innovations & quality today?

Conceptual and methodological tools promoting reflection and innovation.

More information about the Early-C Portugal project is at:

http://earlychange.teithe.gr

ECVET for Strengthening Training to Employment Pathways (ECVET-STEP)

Aim and objectives of the project:

The main goal of ECVET-STEP is to bridge the gap between descriptions of job profiles and training opportunities, while at the same time promoting mobility of people engaging in agricultural VET activities, by making use of the ECVET system.

Main target groups of the project:

Farmers, training providers & policy makers from the agricultural sector

How does the project contribute to learning innovations and learning quality?

By easing the identification of competence gaps between job profiles and learners' actual status

What are the main outcomes of the project?

A model of mobility for VET actions as basis for the "ECVET Capability Maturity Framework", aiming to support stakeholders engaged in learning mobility to discover how they can efficiently use ECVET system for implementing mobility strategies.

A short quote: What is most important for learning innovations & quality today?

To support citizens in their daily activities

More information about the ECVET-STEP project is at:
http://signup.ecvet-step.eu/

Main contact: Cleo Sgouropoulou [csgouro@teiath.gr]

Enhancing peer relationships: Preschool teachers' ideas and practices

Aim and objectives of the project:

Aim: To obtain a comprehensive description of the social participation environment experienced by children with and without disabilities in inclusive preschool settings. This presentation is focused on two project objectives: To understand Portuguese preschool teacher's ideas about what is important to supporting peer interactions; To document preschool teachers' practices aiming to support these particular child outcomes, while investigating their associations with teachers' ideas.

Main target groups of the project

Preschool teachers working in inclusive preschool classrooms.

How does the project contribute to learning innovations and learning quality?

The projet intents to provide the early education and intervention fields with new measures of teacher beliefs and practices related to the support of peer relationships.

What are the main outcomes of the project?

The activities and results of the project are being disseminated through a Web-site. Q methodology was used to determine viewpoints; the Q-set developed will become available through the Web-site of the project.

A short quote: What is most important for learning innovations & quality today?

Do support interactions, a *natural* tool for learning and development.

More information about the project is at:
https://www.facebook.com/InvestigacaoPRO.Pares

e-podręczniki - e-textbooks

Aim and objectives of the project:

"www.epodreczniki.pl" (e-textbooks) is a modern open source educational MOOC for K12 platform to create and share e-textbooks and other resources (text, audio, video, interactive quizzes, on-line applications) on the principle of full disclosure for K12. The project is supposed to equip all students with complete digital educational resources. The resources will be available online and off-line, on different devices and in different cases, in a secure way and will be scalable and highly available.

Main target groups of the project:

Three main target groups are students, teachers and parents with the greatest focus on students (primary, gymnasium and secondary education).

How does the project contribute to learning innovations and learning quality?

The concept of the project supports the teaching process in a completely novel way and enables remote access to e-textbooks (for other purposes than presentation ones) without any geographic or time constraints.

What are the main outcomes of the project?

The development of 18 textbooks, covering the core curriculum for K-12 education in Poland and, in addition, 2,500 objects of teaching resources by 2015 to support teachers using new e-textbooks and offer students even a broader access to resources.

A short quote: What is most important for learning innovations & quality today?

epodreczniki.pl is the largest MOOC platform for K12 in Europe supported by national government providing access to open educational resources for 2 mln+ students and teachers in Poland by 2015.

ETESA: E-Textbook and e-Schoolbag Standards and Applications in China

Aim and objectives of the project:

The main aim of ETESA is to develop national standards of e-Textbook and e-Schoolbag and key technologies that could support e-Textbook and e-Schoolbag being intergrated into education. In addition, ETESA aims to gear educational innovation through promoting standard-based e-Textbook and equipping pilot schools with 1:1 e-Schoolbag learning environment.

Main target goals of the project:

E-textbook device vendors and content providers; ICT in education policy makers; School teachers

How does the project contribute to learning innovations and learning quality?

Sponsored by China National Committee of Information Technology Stadrdardization and China e-Learning Technology Standardization Committee as well, the project has drawn interests from over fivety of ICT companies and digital publishing houses in China. It has great influence on unifing the digital educational products market. The standards were developed after investigating the needs and characteristics of e-teaching and e-learning and thus greatly help to improve the quality of e-textbook.

What are the main outcomes of the project?

ETESA developed a profile of China e-Textbook & e-Schoolbag standards (including 21 standards). Proposal on e-Textbook Standards has been approved by ISO IEC/JTC1 SC36. The research team developed several e-Textbook demo and Standard-based prototypical platform for classroom teaching. A Plan for demonstration schools of e-Textbook & e-Schoolbag Standards application was launched including 80 pilot schools in Minhang Districts of Shanghai.

A short quote: What is most important for learning innovations & quality today?

Standards lead the delelopment of industries, technology enables educational innovations.

More information about the ETESA project is at: http://e5.mhedu.sh.cn/, contact: Zhu Zhiting [ztzhu@dec.ecnu.edu.cn], and Wu Yonghe [yhwu@dec.ecnu.edu.cn].

Europeana Creative

Aim and objectives of the project:

The Europeana Creative project sets out to demonstrate how Europeana, the online portal providing access to more than 26 million digitised cultural heritage objects from Europe's libraries, museums, archives and audiovisual collections, can foster the creative re-use of digital cultural heritage content and associated metadata in the production of high quality OERs.

Main target groups of the project

The main target groups are the Open Education sector (teachers and students as end-users), learning resource developers and creative industries, multimedia designers, and European digital heritage institutions (as content providers).

How does the project contribute to learning innovations and learning quality?

Project-funded pilot applications developed in Europeana Creative demonstrate how technical infrastructures (e.g., extended Europeana APIs, back-end services) and legal infrastructures (e.g., how to access digital objects, under which conditions) can be integrated to further open European digital heritage for educators and informal open learning opportunities for the general public.

What are the main outcomes of the project?

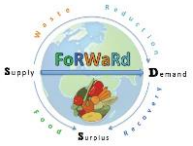
The main outcomes will be innovative applications showcasing Europe's cultural heritage.

A short quote: What is most important for learning innovations & quality today?

Most important for learning innovations are infrastructures that foster exchange of information and collaboration between OER end users, multimedia designers and content providers.

More information about Europeana Creative is at:

http://pro.europeana.eu/web/europeana-creative



FoRWaRd: Food Recovery and Waste Reduction

Aim and objectives of the project:

The project intends to develop a free online training plan for representatives of the food supply sector, a practical guide to help them starting a food waste reduction and recovery program at their facilities in favour of charities

Main target groups of the project

(a) *Representatives of the food supply chain* will directly exploit the acquired skills in their facilities/businesses and (b) *NGOs and charitable associations* can exploit such knowledge in order to work as "consultants" for food suppliers and to organize recovery systems in their territory.

How does the project contribute to learning innovations and learning quality?

FORWARD will provide the first standardized method to reduce food waste and favour its recovery. The coordinator uses the new-coined word "VIS-EDUCATION", a matching of traditional education and visual interactive elements that makes learning faster, more attractive, and memorization of contents more effective.

What are the main outcomes of the project?

a training pathway to train food waste managers, an IT solution to favour the recollection of unsold food by mathcning demand and supply

A short quote: What is most important for learning innovations & quality today?

The development of a training system as close to the learners needs as possible and to make learning more attractive and effective by using innovative tools

More information about the project is at: http://foodrecoveryproject.eu/

Main contact: Silvia Farina [silvia.farina@eurocreamerchant.it]

GLN: Green Learning Network

Aim and objectives of the project:

GLN will establish an interdisciplinary, integrated learning infrastructure for agriculture, biodiversity and rural education (ABR), supporting virtual collaboration between ABR professionals and learners, and promoting practical business instruction for farmers. Furthermore, GLN will facilitate educational scenario generation and a pedagogical best practice repository.

Main target groups of the project:

Rural professionals, educators and learners in ABR, ABR and OER experts.

How does the project contribute to learning innovations and learning quality?

GLN will deliver a rich network of practical ABR resources by creating a framework for Inquiry and Problem Based Science Education (IBSE), bringing IBSE directly into the ABR field through 'green case studies' based on the experiences of agriculture professionals.

What are the main outcomes of the project?

A Living Roadmap regarding the state-of-the-art in ABR education and IBSE; an affiliation network; working groups, including user generated content in area specific groups and ePortfolios; Green Ideas events

A short quote: What is most important for learning innovations & quality today?

Building learning systems which can be constantly refined by real-world applications.

More information about the GLN project is at:
http://www.greenlearningnetwork.eu/

Main contact: Christine Notté, Hélène Coché (AgroSup Dijon)

Hands-On ICT: Learn, practice, teach creativity and ICT

Aim and objectives of the project:

The HandsOn ICT project aims at facilitating the integration of ICT tools in teaching and learning by developing a learning-by-doing environment to be explored by teachers themselves or with the guidance of a mentor. The end goal is to improve the quality of teaching and learning by increasing the digital skills of teachers and as a consequence of their students.

Main target groups of the project

The HANDSON environment main targets are SE and VET teachers, HE faculty members, teacher trainers.

How does the project contribute to learning innovations and learning quality?

The Hands-on ICT project is innovative in three different ways: 1) it combines existing experiences, tools, content and communities; 2) it pairs up the development of creativity and use of new ICT skills; 3) it provides a mentoring system which introduces the teacher to the community and provides support for the whole duration of the new teaching experience..

What are the main outcomes of the project?

- Attractive and comprehensive environment that promotes the knowledge of TEL among teachers and students
- Learning activities, ICT tools, content and communities of practice, regarding ICT integration and fostering creativity

A short quote: What is most important for learning innovations & quality today?

User-centred design approach, ementorship

More information about the HOI Project is at: http://handsonict.eu/

ICORE

Aim and objectives of the initiative:

ICORE is the global initiative to connect the two worlds of Open Research (OR) and Open Education (OE) for mutual benefits. ICORE promotes, supports, and enhances Open Research and Open Education and their recognition, progress and application worldwide in close cooperation with international organizations. ICORE is completely non-profit, requires no membership fees to join, and is open to both representatives of organizations as well as individuals sharing the same objectives of openness in research and education worldwide.

Main target groups of the initiative

ICORE brings together interested experts and stakeholders from the fields of open education and open research for common activities

How does the initiative contribute to learning innovations and learning quality?

ICORE aims to support the design and implementation of innovative strategies, instruments and services for facilitating Open Research and Open Education.

What are the main outcomes of the initiative?

- ICORE aims to promote Open Research and Open Education as a fundamental social objective.
- ICORE aims to foster co-operation among all relevant stakeholders in Open Research and Open Education.
- ICORE aims to facilitate the continuous and rapid transfer of results from Open Research and Open Education into the deployment for future research and education and for the benefits of the global society.
- ICORE aims to foster research and development leading to innovation.

A short quote: What is most important for learning innovations & quality today?

To connect open education with other sectors, in particular with open research

More information about the ICORE initiative is at: http://www.ICORE-online.org/

ICT-DRV: Preparing and keeping professional drivers qualification up-to-date with ICT-based learning

Aim and objectives of the project:

It is the projects major objective to explore and define quality criteria for computer- and simulator-based learning within professional driver qualification. The project makes a contribution to the further opening of qualification in the framework of EC directive 2003/59 towards e-learning.

Main target groups of the project

Policy makers, VET providers concerned with professional driver qualification

How does the project contribute to learning innovations and learning quality?

The project aims to integrate and increase acceptance of technology-based learning in/-to the framework of professional driver training in Europe being so far primarily oriented on traditional class-room-based training methods but having high potential to strongly benefit from the the application of e-learning.

What are the main outcomes of the project?

- Pilot computer- and simulator based learning offers for professional drivers based on the needs of this target group and on instructional design principles.
- Criteria for a high-qality integration of e- and simulator-based learning into professional driver qualification (based on directive 2003/59/EC) in Europe.

A short quote: What is most important for learning innovations & quality today?

“Most important is the orientation on the learners’ needs and characteristics!”

More information about the ICT-DRV project is at:
http://www.project-ictdrv.eu

Infant Transition to Child Care

Aim and objectives of the project:

To investigate infant's transition to child care in the first year of life, examining the extent to which variables of the family, child care and family-caregiver communication influence infant adjustment, after controlling for several child and context variables.

Main target groups of the project: Preschool teachers and families with babies

How does the project contribute to learning innovations and learning quality?

We intend to contribute to the understanding of the infants' adjustment process to child care, to the empowerment of professionals, especially in what concerns the promotion of high-quality experiences in child care, and parent-caregivers communication, what can be relevant to support alliances and enhance the quality of both family and child care environments.

What are the main outcomes of the project?

The dissemination of research findings through a website, the publication of expected indicators in national and international journals, the invitation of teachers and families to a workshop, and web conferences

A short quote: What is most important for learning innovations & quality today?

Teachers' training needs to keep up with the world new technologies and innovations, in order to contribute to help them to meet child needs and being more able to provide sensitive, high-quality care. Inovate with quality!

More information about the BebésEmCreche project is at:

http://ined.ese.ipp.pt/course/view.php?id=50/,
https://www.facebook.com/TransicaoDosBebesParaACreche/

Main contact: Sílvia Barros [silviabarros@ese.ipp.pt]

Inspiring Science Education (ISE)

Aim and objectives of the project:

Inspiring Science Education will provide digital resources and opportunities for teachers to help them make science education more attractive and relevant to students' lives by fostering inquiry-based learning and teaching.

Main target groups of the project

Science teachers in school education

How does the project contribute to learning innovations and learning quality?

By providing learning design and scenarios of use, including meaningful orchestration and integration of learning technologies

What are the main outcomes of the project?

An integrated learning environment including learning technologies, resources, scenarios of use and communities

A short quote: What is most important for learning innovations & quality today?

Make learning fun and relevant!

More information about the ISE project is at:

http://www.inspiring-science-education.net/home

Main contact: Nikolas Athanasiadis [Nikolas.Athanasiadis@intrasoft-intl.com]

LIBE: Supporting Lifelong Learning with Inquiry-based Education

Aim and objectives of the project:

Designing, developing and testing an innovative e-learning management system (a) to develop key information processing skills for ICT (literacy, numeracy and problem solving), with an inquiry-based approach to learning; (b) to produce a high level of personalization in learning based on CAT and on an innovative way of delivering learning materials, through automated texts modulation, to reduce reading comprehension difficulties.

Main target groups of the project: Low educational achievers aged 16-24

How does the project contribute to learning innovations and learning quality?

The innovative educational platform will use automated adapted algorithms in order to modify learning object contents according to learner's lexical profile. The course will offer a full learning experience to improve learner skills into retrieve effectively specialised information on the internet.

What are the main outcomes of the project?

A learning content management system for information-centred courses to upper-secondary school, undergraduate students and unemployed young people

A short quote: What is most important for learning innovations & quality today?

To provide adult learners with the strategic and basic skills for an efficient and motivated self-regulated learning by means of the unlimited potential of the resources and information already available on the web.

More information about the LIBE project is at: http://www.libeproject.it

Main contact: Gabriella Agrusti [gabriella.agrusti@uniroma3.it]

LoCloud: Local Content in a Europeana Cloud

Aim and objectives of the project:

LoCloud will enrich the Europeana content by adding over 4 million digitised items from European cultural institutions. LoCloud is supporting small and medium-sized institutions in making their content and metadata available to Europeana, by exploring the potential of cloud computing Technologies. A cloud-based technology infrastructure will enable the aggregation of local content and a number of micro-services will help to reduce technical, semantic and skills barriers and to render the content more discoverable and interoperable.

Main target groups of the project:

Small and medium-sized local heritage institutions (SMIs) in Europe

How does the project contribute to learning innovations and learning quality?

The exploration of the potential of cloud computing technologies for enhancing Europeana, working on the development of a cloud infrastructure (IaaS) and on the creation of software services (SaaS) aimed to benefit content providers & users.

What are the main outcomes of the project?

A cloud-based technology infrastructure of LoCloud will enable the aggregation of local content and a number of micro-services will help to reduce technical, semantic and skills barriers and to render the content more discoverable and interoperable.

A short quote: What is most important for learning innovations & quality today?

Education, culture and innovative technologies need to go side by side.

More information about the LoCloud project is at: http://www.locloud.eu/

Main contact: Gunnar Urtegaard [gunurt@arkivverket.no]

Open Discovery Space (ODS)

Aim and objectives of the project:

With a budget of 15.3 Mio € and involving 51 partners from 20 European countries, ODS is the largest e-Learning project ever funded by the EC. The ICT/PSP project started in April 2012 and will end in April 2015.

Main target groups of the project

ODS focuses on all stakeholders related to the European school sector

How does the project contribute to learning innovations and learning quality?

ODS opens up content by centralizing the access to European learning content repositories, opens up learning by extending the repositories' functionalities through an own toolset basing on innovative insular solutions on teacher/school level, and additionally, opens up collaboration through fostering the open exchange of knowledge, experiences, and educational activities.

What are the main outcomes of the project?

ODS has developed a portal as centralized access point to open learning resoureces and provides a freely available community platform, implemented on the European level and implementable on school, regional, and/or national level.

A short quote: What is most important for learning innovations & quality today?

If we want a powerful innovative culture in schools, which is self-sustaining, we have to empower system-aware practitioners.

More information about the ODS project is at:

http://www.opendiscoveryspace.eu

Main contact: Nikolas Athanasiadis [Nikolas.Athanasiadis@intrasoft-intl.com]

Open Educational Ideas

OEI2: Open Educational Ideas and Innovations

Aim and objectives of the project:

OEI2 is developing new ways for students and educators to share their educational ideas. We enable Open Education at an early stage: instead of sharing complete OER or Open Educational Practices (OEP), we aim to share ideas in the early design process. We belive this process will create a fundamentally different uptake of OER by creating Emotional Ownership of OER.

Main target groups of the project

Educators/ teachers and students in Higher Education and schools.

How does the project contribute to learning innovations and learning quality?

OEI2 enables peer learning - We are bringing together educators and students to work together on collaborative idea generation. This enables critical discussion between educators and the community as well as new innovations to emerge.

What are the main outcomes of the project?

Interactive tool to incubate ideas - We are developing free online tools to support the idea generation and sharing process.

A short quote: What is most important for learning innovations & quality today?

Getting the communities active. Peer learning and working is the key.

More information about the OEI2 project is at:

http://www.idea-space.eu/

Main contact: Henri Pirkkalainen [henri.j.pirkkalainen@jyu.fi]

POERUP: Policies for Open Educational Resources Uptake

Aim and objectives of the project (funded under LLP KA3 ICT):

(1) To provide evidence-based policies for governments (national, regional and municipal) to use to foster the uptake of OER within the context of open and flexible learning; (2) To incorporate feedback from OER experts, advisors and practitioners; (3)To ensure ongoing availability of project results

Main target groups of the project:

Policy-makers, advisors, experts, senior practitioners in institutions

How does the project contribute to learning innovations and learning quality?

By showing how to achieve OER-related innovations affordably/sustainably

What are the main outcomes of the project?

- A set of 30 reports on countries with OER initiatives;
- A listing and a categorization of over 100 notable initiatives;
- An analysis of existing policies related to OER;
- Seven case studies of successful OER initiatives;
- EU-wide policy recommendations and nine national policy recommendations

A short quote: What is most important for learning innovations & quality today?

To facilitate innovation in a managed way within a quality framework reconceptualised to be innovation-friendly yet supportive of learners

More information about the POERUP project is at: http://www.poerup.info

Main contact: Paul Bacsich [paul.bacsich@sero.co.uk]

PUMO: PUpils on the MOve

Aim and objectives of the project:

PUMO develops a system (teacher training course & know-how) to enable pupils away from their home country to maintain their progress in homeland specific subject areas and to monitor their progress in other subjects to ensure that they can re-integrate with their original cohort when they return home.

Main target groups of the project:

Main target groups of the project are pupils living (temporarily) abroad. The PUMO training course will be used primarily by teachers where some pupils leave temporarily to move abroad.

How does the project contribute to learning innovations and learning quality?

It provides a unique teacher training programme to equip them with the skills, knowledge and motivation to supplement the education of the migrant pupils with distance tutorials to keep the pupils up to date with their native curricula.

What are the main outcomes of the project?

Main outcomes of this project are teacher training course, know-how and a social network of teachers and pupils living (temporarily) abroad.

A short quote: What is most important for learning innovations & quality today?

Today more attention is/will be paid on skills how to collect information, think critically and how to use knowledge gained during the learning process.

More information about the PUMO project is at: www.pumo.info

Q-LET: Quality in Learning, Education and Training

Aim and objectives of the initiative:

QLET is the European initiative and website for quality development in Learning, Education and Training (LET).

Main target groups of the initiative

All Learning, Education and Training (LET) experts and stakeholders interested in quality development

How does the initiative contribute to learning innovations and learning quality?

QLET provides rich materials and services about planning, designing, realizing and evaluating of learning innovations and learning quality.

What are the main outcomes of the initiative?

QLET promotes and supports quality development as a basic and most important objective in Learning, Education and Training (LET).

A short quote: What is most important for learning innovations & quality today?

Learning innovation has always to contribute to the learning quality.

More information about the QLET initiative is at:
http://www.facebook.com/Q4LET and at: http://www.qualitydevelopment.eu/

QUADRO: QUAlity Development Roadmap for training in the financial sector

Aim and objectives of the project:

To support and promote the improvement of the Quality Assurance approaches for VET in the Financial Services Sector (FSS), from learning needs identification to impact of training results in coherence with the European QA for VET.

Main target groups of the project:

Stakeholders interested in the development of the EQAVET Handbook and the Implementation Guidelines: Institute of Bankers, Training Providers, Universities, Banks&Financial Institutions, FSS employees, Trade Unions, Banking Associations.

How does the project contribute to learning innovations and learning quality?

Two important achievements: a sectoral Handbook for QA and a common approach for different European Countries which will enhance the setting up of National QA Frameworks for training.

What are the main outcomes of the project?

Establish common EQAVET Handbook for the FSS for supporting QA and ICT usage in VET; Increase the level of trust and confidence between the VET actors, the employers and the employees.

A short quote: What is most important for learning innovations & quality today?

Raising awareness, valorising the existing practices and engaging key stakeholders to work together and cooperate are the main challenges and needs for innovating learning programmes and for guaranteeing their quality and relevance for the labour market.

More information about the QUADRO project is at:

http://www.quadroproject.eu

SoNetTE: Social Networks in Teacher Education

Aim and objectives of the project:

To give access to teacher education courses that are of special interest for (student) teachers in different countries, like subject didactics and general pedagogy that reflect a very specific idea, debate or development in that area that cannot be found in teacher education in general. An element in these courses is participatory research by each member of the course in study groups.

Main target groups of the project

Student teachers, in-service teachers (experienced teachers) and teacher educators/researchers.

How does the project contribute to learning innovations and learning quality?

The project uses social networks and other internet tools to organize participatory research between teachers in different countries.

What are the main outcomes of the project?

A methodology for how to support experienced teachers and student teachers to participate actively in international research and improve their professional development.

A short quote: What is most important for learning innovations & quality today?

Innovational education starts with inspired teachers.

More information about the SoNetTE project is at:
http://www.sonette.org

Main contact: Jan Folkert (J.F.) Deinum, [j.f.deinum@rug.nl]

Space of Inclusion

Aim and objectives of the project:

The main aim of the project is to improve the knowledge of managerial staff concerning disability as well as persons with disabilities in the workplace context and, as a consequence, the effective inclusion of employees with various disabilities as staff members across companies.

Main target groups of the project: Managers and managerial staff

How does the project contribute to learning innovations and learning quality?

The project responds to the need to enhance the disability awareness of managers and senior managerial staff in companies. The content of the e-learning training course has been developed as a collaborative effort of two strong academic centres (the Jagiellonian University of Krakow (Poland) and the Pierre and Marie University of Paris (France)) and the international corporation Thales, with due care taken to ensure the attractiveness of the offer, hence the use of advanced animation technology (in full compliance with the WCAG standards).

What are the main outcomes of the project?

“Space of Inclusion” course with four e-learning units, each featuring a wealth of practical information on persons with disabilities as company employees and cooperation between non-disabled and disabled staff members. The Polish-language e-learning course units have been made available for all Internet users under a Creative Commons licence.

A short quote: What is most important for learning innovations & quality today?

The creation and development of easily accessible tools which facilitate effective knowledge and skill transfer to persons who have completed their formal education.

More information about the project available at:http://spaceofinclusion.eu

TALOE: Time to Assess Learning Outcomes in e-Learning

Aim and objectives of the project:

The main goal of TALOE is to develop a web-based platform to help teachers and trainers decide on the e-assessment strategies to use in their online courses. The main idea is that a teacher will describe the learning outcomes of their course or module and the TALOE platform will analyse them and provide an e-assessment strategy that is consistent with the intended learning.

Main target groups of the project:

teachers and trainers from all levels of education

How does the project contribute to learning innovations and learning quality?

The practical automated web-based tool (TALOE platform) for implementing the general idea of alignment or consistency of courses is new. It is also innovative the focus on online learning and particular on e-assessment.

What are the main outcomes of the project?

- research and selection of innovative e-assessment practices;
- development of a web-based tool which will be tested with real case studies.

A short quote: What is most important for learning innovations & quality today?

Since the labour market demands more workers qualified and updated, the quality-based approach for all education providers has become essential.

More information about the TALOE project is at: http://taloe.up.pt/

Main contact: Alfredo Soeiro [taloe@up.pt]

TRANSversal key competences for lifelong learning: TraIning teachers in competence based education

Aim and objectives of the project:

The aim of TRANSIt is to help teachers acquire and reinforce such skills and knowledge so that they can design and implement cross-curricular activities that support the key competence acquisition of their students. Also, TRANSIt aims to support teachers in utilising ePortfolios particularly in the area of formative assessment. Moreover, the project aims to raise the awareness of the administrative staff of schools in order to support teachers in bridging the gap between policy and practice (e.g. curricular reforms).

Main target groups of the project

Teachers (in-service, pre-service), teacher educators, educational policy makers, school leaders, school ICT support staff

How does the project contribute to learning innovations and learning quality?

Development of an innovative Training Framework/a systematic evaluation methodology

What are the main outcomes of the project?

TRANSIt Training Framework; 2-phases piloting; Workshop on “Challenges in Training Teachers about Key Transversal Competences”; TRANSIt Guide of Good Practice.

A short quote: What is most important for learning innovations & quality today?

Authentic learning and assessment; ePortfolios; project-based learning; Open Badges.

More information about the TRANSIt project is at: www.transit-project.eu

Vegucation: Vocational training and competency in sustainable and plant-based nutrition for chefs

Aim and objectives of the project:

In the gastronomical sector, the trend for sustainable and meat-reduced cuisine is meanwhile overarching. In order to improve competitiveness an adaptation to this changing demand is required. The project creates an EQF standardized curriculum, teaching material and training for a) the usage within primary vocational chef education and b) as a distinct additional training as vegetarian cook.

Main target groups of the project:

a) teachers by training them, b) students by an EQF-standardized curriculum and teaching material, c) policy makers of VET institutions for certifications, and d) social partners and chambers for dissemination and commercialization.

How does the project contribute to learning innovations and learning quality?

The project improves the established VET for caterers by new learning contents and innovative learning-field oriented, ICT-based and multimedia teaching materials.

What are the main outcomes of the project?

The project develops a transnational vocational training concept including the curriculum for a 100-lesson-module, teaching materials in five language versions as well as test stages online and in focus groups.

A short quote: What is most important for learning innovations & quality today?

Innovative and high-quality VET responds reliably to ever-changing customer demands by contemporary methodology and certification.

More information about the Vegucation project: http://www.vegucation.eu/

Workshop Presentations

Selected and approved after Open Call for Workshop

All workshops in alphabetic order

Conversations with POERUP: what can insights from outside Europe bring to Europe in respect of opening up European universities to educational innovation?

Workshop presenters and facilitators
Paul Bacsich (Sero Consulting Ltd), Grainne Conole (University of Leicester), Rory McGreal (Athabasca University).

Description of the session
The three presenters are all active members of the POERUP project. In addition they are and were members of several other projects (eMundus, VISCED, Re.ViCa, etc) each with a specific non-EU dimension. In addition, POERUP has a specific admonishment to "look beyond" conventional geographic and sectoral boundaries. The speakers' specific geographic experience covers in particular Canada, Australia, New Zealand, South Africa, the Gulf States, Hong Kong and Brazil.

The session will be initiated by Paul Bacsich, project manager of POERUP. In it each speaker will make an elevator pitch with three key ideas where they believe that Europe should learn from non-European countries' experience in ICT-based higher education. These will cover:

- staff development [Grainne]
- private providers and issues they raise [Paul]
- learning design [Grainne]
- accreditation of prior learning including "challenge for credit" [Rory]
- competency-based education [Paul]
- knowledge mobility [Rory]
- low-cost education: three takes on this [Grainne, Rory, and Paul]

The format will then become a Q&A discussion, chaired by Grainne Conole, on these, as guided by audience interest and if time allows, other topics which members of the audience believe are relevant.

The session will conclude with an interactive summary, facilitated by Rory McGreal, of the topics which the discussants and the audience believe are the most important.

Data analysis & quality: what combination for an improved evaluation of learning experience?

Workshop presenters and facilitators
Anne Boyer (LORIA – Université de Lorraine, France, anne.boyer@univ-lorraine.fr), Anne-Marie Husson (Préau – CCI-Paris- Ile de France, France, amhusson@cci-paris-idf.fr), Jacques Dang (HEC, France, HEC, France), Azim Roussanaly (LORIA – Université de Lorraine, France, azim.roussanaly@univ-lorraine.fr)

Description of the session

In this workshop, the facilitators explore how the analysis of learning data can be combined with traditional quality evaluation approaches for three different types of learning models: classical, blended learning experience, and individual learning with OER and massive online courses such as MOOCs to deepen the perception of learning experience and improve the design of learning services.

INTRODUCTION: The session will start with a short presentation setting the scene and explaining the format and the expected outcomes.

PRESENTATION: A general presentation of the topic issue will be provided through a background paper (given before the session to the registered participants) and a PowerPoint presentation. A specific focus will be made on the various approaches of data analysis and their potential contribution to learning systems. This will be put into perspective with 'traditional' quality approaches dealing more with outsider information like the satisfaction of learners during or after the learning experience or its observed effects on the learners.

EXPLANATION OF GROUP WORK: The session chair will explain the work to be done in the 3 different sub-groups (traditional blended learning, OER and MOOCs): the questioning and main issues of each theme and the expected outcomes. He will also explain the different rounds in which the workshop will be paced. The participants will then choose the sub-group they want to join (with a max of 7 participants for each).

1st round of GROUP WORK: Participants will be asked to briefly introduce themselves and share their experience of quality approaches in learning systems. A moderator will take part to each subgroup which and will focus on one of the three topics answering key questions like: In which dimensions, the existing quality models do not fit completely? What could be the relevant new criteria? What kind of data could be meaningful to qualify these new criteria? How could we combine the data coming from learning systems to deepen the perception of learning experiences and design better services?

First outcome: a poster on a paperboard paper providing a synthesis of their reflexion.

2nd round of GROUP WORK: Each subgroup submits its production to another subgroup with the aim of refining it and identifying the common criteria and data analysis they could find between their own work and the one done for the other topic.

SHARING RESULTS: Each subgroup has 6-7' to present their poster to the whole group, including the feedback provided to their work by the second round of work.

SUMMING UP & SESSION EVALUATION: The session concludes with summing up and drawing conclusions by the session chair and with an evaluation of the session.

Framing quality indicators for multilingual repositories of Open Educational Resources – The LangOER European network

Workshop presenters and facilitators:
Linda Bradley (University of Gothenburg, linda.bradley@chalmers.se), Anne-Christin Tannhäuser (EFQUEL, anne.tannhauser@efquel.org), Katerina Zourou (Web2Learn, katerinazourou@gmail.com), Sylvi Vigmo (University of Gothenburg, sylvi.vigmo@ped.gu.se)

Description of the session

The workshop departs from a current state-of-the-art analysis for multilingual repositories of Open Educational Resources (ROER) in European languages, regarding the research and development done in the LangOER network.

The overall aim of the workshop is to share ongoing research and development of a framework for quality indicators for multilingual ROERs. This is done in more specific terms by applying a tentative framework on a set of ROERs to display and discuss with the workshop participants what can be categorized as quality. In addition, some examples from less used languages in Europe will serve as examples to explore and discuss quality indicators relative the tentative framework.

Participants will learn about the current situation in multilingual ROERs available, some common features concerning quality as well as insight into their diverse contexts.

Through scrutinizing a number of multilingual ROERs, participants will discuss issues, applying the tentative framework - calling for critical input of the nature and quality of these ROERs.

Participants will discuss key quality indicators to take into consideration when categorizing multilingual ROER.

Expected results and outcomes: Participants will become more informed and increase their awareness of quality indicators connected to multilingual ROERs.

After a short introduction on the scope of LangOER, a European network focusing on multilingual ROERs, the participants will be engaged in exploring and applying a tentative framework for analysing qualities in ROERs. The tentative analytical framework will be handed out and examples of OERs in less used languages will be investigated together. Participants will be invited to apply the tentative framework and asked to contribute regarding quality indicators for multilingual ROERs.

Teacher Competences Fostering Universal Design for Learning and Inclusion

Workshop presenters and facilitators:
Katerina Riviou (Ellinogermaniki Agogi, Greece), Alan Bruce (ULS, Ireland)

Description of the session

The workshop will include group working and interactive sessions. After initial presentation, participants will collaborate and finally present the outcomes of their team's brainstorming/discussions. Methodology will be dynamic using case studies, defined challenges and senarios based on good practice examples.

The session will include presentations followed by practical sessions (brainstorming in groups where a team member will act as facilitator and then present the outcomes of each team's discussions to the plenary group). Themes of discussion will be:

- Universal Design for Learning (UDL)-based learning environments,
- UDL Resources
- Teachers' and school leaders' competences,
- Examination of barriers and identification of opportunities.

Participants will be informed about inclusive learning strategies that address learning variability by Universal Design for learning methodology. A discussion and brainstorming session will follow where, in teams, participants will deposit case studies and practices that promote inclusion.

Participants will be invited at the end to become members of a community of practice that will allow them to exchange and share ideas, experiences, concerns and educational resources with fellow teachers across Europe. Participants' feedback and requirements will be collected and discussed regarding the development of a web inventory of inclusive practices.

The workshop will take place in the context of the UDLnet: Universal Design for Learning: A Framework for Addressing Learner Variability (540659-LLP-1-2013-1-GR-COMENIUS-CNW) project.

Towards a Quality Assurance Framework for Open/Online Education: from practice through expectations to indicators of quality

Workshop presenters and facilitators
Dr. Anca GREERE (Quality Assurance Agency for Higher Education, UK)
Dr. Catherine Riley (University of Trento, Italy)

Description of the session

The session invites participants to debate on the quality assurance and enhancement (QA&E) issues relevant to HE online settings by making reference to quality in general and in HE in more specific terms. The activities proposed will create the context for sharing practice and formulating expectations in reference to quality of open/online education, discussing whether and in what way it is different from teaching and learning in more traditional settings. The outcome is to elicit QA criteria which, in the opinion of the participants, should be indicative of quality in open/online education.

The session is targeted towards participants who understand the nature (different facets, characteristics and peculiarities) of open/online education. Participants could be involved in programme management, design, development or delivery and may have varying degrees of expertise in Quality Assurance.

The session will have three components:

1. Awareness raising activity – What is Quality and What is Quality Assurance? This section will invite participants to first reflect individually and then discuss in groups their own perceptions/expectations of quality in general terms by analysing quality expectations for various common objects and/or day-to-day services (activity tested during the SPEAQ project). Such expectations are appropriately filtered to draw parallels for the context of education, and, subsequently, online and open education. This activity engages all participants in individual contributions and whole group comparisons based on examples of practice. The result of this activity is a list of questions which, in the opinion of the participants, can contribute to an evaluation framework

for the QA of open/online education and open/online education resources.

2. Mapping the Quality Questions onto a list of indicators – How do we translate questions into proof of practice? In groups, participants will systematise the questions elicited during Activity 1 into pertinent quality categories. The outcome is to produce a framework/grid that may serve as a tool for QA&E processes for open/online education and open/online education resources. Each group proposes categories to produce a grid in plenary.

3. Using the framework to categorise practice – What does current practice look like? Participants will work in groups with quotes extracted from two quality assurance contexts focussing on the use of online resources: (1) a survey conducted at the University of Trento, Italy amongst teachers and students engaged in online teaching and learning; (2) reviews undertaken by the Quality Assurance Agency for Higher Education, UK, which result in the formulation of recommendations and identification of good practice by teams of HE peers. Participants will be asked to match the quotes with the relevant category in the framework/grid. The purpose of this activity is to test the criteria developed during Activity 2 to see if examples of actual practice fall under the categories identified or if/which adjustments need to be made to the grid.

The workshop ends with a revision of the final grid of categories – in plenary.

Author Index 2014

All authors in alphabetic order

Author Index

Adelsberger, Heimo H.

University of Duisburg-Essen
Germany
heimo.adelsberger@icb.uni-due.de

Prof. Dr. Heimo H. Adelsberger is Director of the TELIT Research Institute and a Professor for Information Systems at UDE, Institute for Computer Science and Business Information Systems. He is Head of the Department WIP leading the Research Group for Information Systems for Productions and Operations Management and he holds a PhD in Information Systems. His main working fields are research on information systems and repositories including business information systems and artificial intelligence. He is Co-Editor of the "International Handbook on Information Technologies for Education, and Training" (Springer 2002) and has gained an international reputation by his publication of numerous articles and book chapters.

Baglatzi, Alkyoni

National Technical University of Athens,
Greece
baglatzi@mail.ntua.gr

Barros, S.

Polytechnic of Porto,
Portugal
silviabarros@ese.ipp.pt

Bijnens, Marie

EFQUEL, Brussels
Belgium
marie.bijnens@efquel.org

As the EFQUEL director Marie Bijnens is responsible for strengthening the EFQUEL network and for seeking opportunities for EFQUEL members to generate expertise through EFQUEL activities. This on the one hand by providing them with the respective quality frameworks developed by EFQUEL and on the other hand by offering opportunities to contribute to the implementation of diverse projects. Furthermore she is responsible for the coordination of the organisation of the EFQUEL Innovation Forum.

Bird, Terese

University of Leicester, Leicester
United Kingdom
mh300@leicester.ac.uk

Ingo Blees

Deutsches Institut für Internationale Pädagogische Forschung
Germany
Blees@dipf.de

Ingo Blees M.A. holds degrees in Philosophy, German literature and linguistics and as Information Specialist. He worked as a teacher in higher education and research assistant at the RWTH Aachen prior to joining the German Institute of International Educational Research (DIPF) in 2005. In the Information Center for Education located at DIPF he is tasked with the further development of the educational information portal ‘German Eduserver’. He also worked as teaching assistant at the Darmstadt University of Applied Sciences.

Bruce, Alan

Universal Learning Systems, Ireland
abruce@ulsystems.com

Dr Bruce is a sociologist who studied in Los Angeles, Galway, Amsterdam and Hull. He has lectured in France, England and Ireland and worked in research for the European Commission in Brussels. In Ireland he was responsible for national initiatives in professional development in the disability sector. He is a long-standing member of the *European Distance and E-Learning Network*, the *Irish Institute of Training and Development,* and the *National Council for Rehabilitation Education.* He has published widely on the social impact of disability, labor market policy, innovative education, distance learning, social inclusion, conflict transformation, strategic change and managing diversity. He is involved in innovative transformational school systems and is National Coordinator for the *Open Discovery Space* program in Ireland. In 2010 he was elected Vice-President of EDEN. He is CEO and Director of Universal Learning Systems.

Conole, Gráinne

University of Leicester, Leicester
United Kingdom

Gráinne is Director of the Institute of Learning Innovationsinse 2011. Prior to this, she was Chair of E-Learning at the Institute of Educational Technology, The Open University, since April 2006. Previously, Grainne was Professor of Educational Innovation in Post-Compulsory Education at the University of Southampton, and was Director of the Institute for Learning and Research Technology at the University of Bristol, a centre of excellence on the development and use of information and communication technology in education. Gráinne has research interests in the use, integration and evaluation of Information and Communication Technologies and e-learning and impact on organisational change. Gráinne has research, development and project management experience

across the educational and technical domains; funding sources have included HEFCE, ESRC, EU and commercial sponsors.

Creelman, Alastair

Linnaeus University, Kalmar
Sweden

Alastair Creelman is E-Learning Specialist at Linnaeus University in Kalmar, Sweden, and a member of the EFQUEL board. He has extensive teaching experience (teaching English and telecommunications) in schools, adult education, corporate training and higher education in the UK, Sweden and Finland. Has lead and participated in numerous national and international projects in fields such as the use of social media, virtual worlds and in particular open educational resources in higher education. He is a member of the ISO/PC288 committee, Educational organizations management systems, and is Swedish representative in the Nordic Council's network for distance learning, NVL Distans.

Daniel, Sir John

Academic Partnerships
Vancouver
Canada
odlsirjohn@gmail.com

Sir John Daniel served as President and C.E.O. of COL from 2004 to 2012. He now works on a variety of projects, notably as Education Master in the Beijing DeTao Masters Academy, China, Senior Advisor to Academic Partnerships International and Chair, pro bono, of the UWC (United World Colleges) International Board. Sir John brought wide international experience in universities and the United Nations system to his eight-year tenure as President of COL. Sir John is an Honorary Fellow of St Edmund Hall, Oxford University (1990), the College of Preceptors (1997) and the Commonwealth of Learning (2002). He won the

Symons Medal of the Association of Commonwealth Universities in 2008 and his 32 honorary degrees are from universities in 17 countries.

Darra, Nancy

National Technical University of Athens
Greece
nancyd@central.ntua.gr

Dimovska, Ana

Technical University of Madrid
Spain

Ehlers, Ulf-Daniel

Baden-Wurttemberg Cooperative State University, Stuttgart
Germany

Prof. Dr. Ulf-Daniel Ehlers is the Vicepresident for Quality and Academic Affairs at the Baden-Wurttemberg Cooperative State University in Stuttgart, Germany. He has been appointed Professor for Educational Management and Lifelong Learning at the same university. Before he has held positions as Associate Professor in the Duisburg-Essen, Germany, Professor for Technology Enhanced Learning in the University Augsburg, and Associate Professor of the Graduate School for Management and Technology of the University of Maryland University College. Ulf is an educational scientist and holds degrees in English Language, Social Sciences and Educational Sciences from the University of Bielefeld, where he finished his Ph.D. with honors in the field of Technology Enhanced Learning in

2003. He was awarded his habilitation in 2008 from the University of Duisburg-Essen. In his research he established a groundbreaking model for quality from the learner's perspective and an internationally awarded quality culture model. He has created many international, European and national projects on education quality, ICT and learning in all eductaion sectors and alost all continents. Ulf is founding member and current President of the European Foundation for Quality in E-Learning, has been President of the Society for Media in Science as well as serving on advisory boards to several professional associations in the field.

Ulf is an internationally recognized researcher and innovator in the area of E-Learning. He has extensive experience in helping individuals achieving superior learning performances and has run lighthouse initiatives in the field of e-learning and knowledge management as well as e-business, including knowledge-technology consulting for small and medium sized enterprises. Ulf has developed the Learners' Quality Model for e-learning, which is a basis for learner centred quality development in e-learning. He is working as advisor to governments and non-governmental organisations in the field of learning and development cooperation and is member of several advisory boards and editorial committees. Ulf is the author/ publisher of several books on quality and organisational innovation and culture and more than 130 articles and book chapters, has been a featured speaker at numerous international conferences, and is member of several professional associations for e-learning and education.

Engel-Vermette, Sebastian

University of Duisburg-Essen, Campus Essen
Institute for Technology-Enhanced Learning and Innovations for Didactics and Quality (TELIT)
Germany
sebastian.vermette@icb.uni-due.de

Sebastian Engel-Vermette is a research associate for third-party projects at the department of Information Systems for Production and Operations Management at the University of Duisburg-Essen. His responsibilities include communications and marketing for said projects, as well as for conferences with which the department is involved. His personal research interests focus on migration and societal integration concepts and their corresponding media and political discourse within Europe, especially in Germany.

Gamelas, A.

University of Porto
Portugal
anavgamelas@gmail.com

Grammatikopoulos, Vasilis

University of Crete, School of Education, Department of Preschool Education
Greece
ramvas@edc.uoc.gr

He is a Lecturer in Educational Evaluation at the University of Crete, Greece. He was Postdoctoral Teaching Fellow at the Liverpool Hope University, UK, the University of Macedonia, Greece, and the University of Thessaly, Greece. He has participated in numerous funded national and international research projects during the last 13 years, and his main research interests are: educational evaluation, early childhood education evaluation, evaluation of physical activity in early childhood education. He has great experience in pre & in –service teacher training as he has been participating as a leader in many training courses. He has published over 20 research papers in peer reviewed international journals.

Gregoriadis, Athanasios

Aristotle University of Thessaloniki
Greece

Dr Gregoriadis is a lecturer in the Department of Early Childhood Education, at the Aristotle University of Thessaloniki. His domains of specialization are early childhood education, early childhood education teachers training. Dr Gregoriadis

has participated in several research projects and has great experience in pre & in –service teacher training. He has published over ten research papers in peer reviewed international journals.

Hamilton, Mark

University of Leicester, Medical School and the Institute of Learning Innovation, Leicester
United Kingdom
mh300@leicester.ac.uk

Heinen, Richard

Duisburg Learning Lab, Universität Duisburg-Essen
Germany
Richard.Heinen@uni-duisburg-essen.de

Richard Heinen, M.A., Scientific Assistant with the Chair of Media Didactics and Knowledge Management – Learning Lab, University of Duisburg – Essen. Research focus: School development, infrastructures for learning and media integration, BYOD - Bring your own device and Open Educational Resources (OER).

Iovine, Annalisa

Università Roma TRE, Department of Education, Rom
Italy

Jansen, Darco

European Association of Distance Teaching Universities
The Netherlands
darco.jansen@eadtu.eu

Jayalath, J. A. D. Janaka

Director / Information Systems, Tertiary and Vocational Education Commission
Sri Lanka

Mr Janaka Jayalath is working as the Director, Information Systems at Tertiary and Vocational Education Commission (TVEC), the quality assurance and accreditation body of Technical, Vocational Education and Training(TVET) sector in Sri Lanka. Mr. Jayalath started eLearning initiatives in TVET sector in year 2006 under the German assistance and organized few capacity building programs in eLearning development and implementation. He has worked as an international tutor and facilitator in many elearning courses conducted for South Asia, Africa and Middle East. In year 2009 he was elected as the Vice President of the Asian eLearning Network (AseLNet) which membership consists of South Asian countries. Also he was pioneered in development of quality assurance framework for eLearning courses of TVET sector in Sri Lanka.

Karen Kear

The Open University
United Kingdom
karen.kear@open.ac.uk

Dr. Karen Kear is a Senior Lecturer at the UK Open University, where she designs and teaches modules on Information Technology, and carries out research in e-learning. Karen's undergraduate study was at Cambridge University, where she gained a BA in theoretical physics. She also has an MSc in Information Technology from Keele University, and a PhD in Educational Technology from the UK Open University. Karen is a fellow of the UK's Higher Education Academy.

Kerres, Michael

Duisburg Learning Lab, Universität Duisburg-Essen
Germany
Michael.Kerres@uni-duisburg-essen.de

Prof. Dr. Michael Kerres, Chair of Educational Media and Knowledge Management – Learning Lab, University of Duisburg – Essen. Research focus: Innovations in learning and competence development in schools, universities and further education, instructional design of IT-based environments for learning, learning with social media.

Lappalainen, Harri

Turku University of Applied Sciences TUAS
Faculty of Technology
Finland
Harri.Lappalainen@turkuamk.fi

M. Soc. Sc (econ) Harri Lappalainen has worked since 1997 as a trainer and organizer of numerous intensive training programs in further vocational training and higher education. He has extensive experience on evaluation in several levels: EU programs, EU projects, educational institutes, EU project proposals as well as individual level assessments. Lappalainen holds a Certificate of Competence-Based Personal Evaluation, acknowledged by the Finnish Psychological Association. In addition to his Master's degree he holds a degree of Vocational Teacher. Lappalainen has several years' experience on working in multicultural environment. At the moment Lappalainen is acting as a Special Advisor in the Innovation Pedagogy team in Turku University of Applied Sciences TUAS.

Lazoudis, Angelos

Ellinogermaniki Agogi, Greece
aggelos@ea.gr

Leal, T.

University of Porto
Portugal
anavgamelas@gmail.com

Liukkonen, J.

University of Jyvaskyla
Finland
jarmo.liukkonen@jyu.fi

McGreal, Rory

Athabasca University
Canada

Rory McGreal is a Professor and Associate Vice-President, Research at Athabasca University – Canada's Open University. He has been a supporter, developer and user of OERs for many years. He is presently on the Board of Directors of the

Open Education Foundation and as such has supported the hosting of WikiEducator at AU. He is also the AU representative at the OCW Consortium and has been a lead player in opening up content at the university, supporting the development of the AUSpace open access repository.

Mudrinić Ribić, Aleksandra

Croatian Academic and Research Network- CARNet
Croatia
Aleksandra.Mudrinic@CARNet.hr

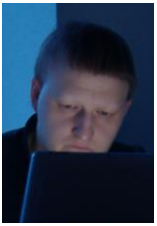
Aleksandra Mudrinic Ribić is Head of Service for Support to E-education in Croatian Academic and Research Network – CARNet. Her expertise lies in analyzing and selecting appropriate educational technology for designing materials, determining the purpose of teaching and learning outcomes, assessing the quality of e-learning and applying the principles of project management in the planning, development and manufacture of material. She has long experience in managing projects related to enhancing the quality of education by integrating technology into the learning processes. The results of successfulness in this field are shown in her last project Schools 2.0 which has been recognized and awarded by the European Commission as one of the three most innovative initiatives in the category Education and Research.

Nascimbeni, Fabio

Menon Network
Belgium

Fabio Nascimbeni has a degree in Economics with an international business management specialisation, and is finalising a PHD on ICT for Development in the Knowledge Society. In his present position of Director of the MENON Network, he is in charge of business development, coordination of international working groups, policy advisory and strategic consultancy. He has been coordinating a number of research projects in the fields of e-learning and lifelong learning, as

well as a number of international collaboration actions in fields spanning from Science and Technology, ICT research, information society development, educational research. He has actively participated in the set up of a number of international entities (MENON EEIG, Multipalio EEIG, European Foundation for eLearning Quality, VIT@LIS Network).



Ortel, Markus

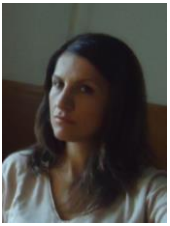
University of Duisburg-Essen
Institute for Technology-Enhanced Learning and Innovations for Didactics and Quality (TELIT)
Germany
markus.ortel@uni-due.de

Markus Ortel is a research assistant at the University of Duisburg-Essen and holds a Master of Science in Software Systems Engineering. He has contributed to a large number of open source projects and works also as freelancer and software consultant.

Ossiannilsson, Ebba

Lund University
Sweden
ebba.ossiannilsson@ced.lu.se

Ebba Ossiannilsson (PhD) has worked since the year 2000 and ongoing with strategic issues on e-learning and open learning. She earned her PhD from Oulu University, Finland, with a dissertation on international benchmarking, and quality enhancement on e-learning in Higher Education. Her research areas are on open learning cultures in innovative learning spaces, but also on UGC, OERs and MOOCs. Benchmarking and quality issues from rhizome perspectives is her area of special interest. Ossiannilsson is a board member in national and international organizations, like, SVERD, EFQUEL, EDEN NAP, OERSverige, OERNordic, and BoldicOER. She serves a quality reviewer for UNIQe, ECB Check and Epprobate. She is the evaluator for SEQUENT. She was also a founder and course leader for OER Practitioner Services



Pappa, Dimitra

National Centre for Scientific Research (NCSR) “Demokritos”
Greece
dimitra@dat.demokritos.gr

Dimitra Pappa holds a degree in Electrical Engineering from the National Technical University of Athens (NTUA), specialising in telecommunications and a Masters Degree in Business Administration (MBA) from the Hellenic Open University (HOU) and works for the National Centre for Scientific Research (NCSR) “Demokritos” in Greece. Since the late 1990’s she has taken part in a number of European and national research and development projects in the fields of e-learning, e-health, e-government and e-commerce, as project coordinator, scientific supervisor, project manager and/or member of the work team. She has published several papers in refereed international scientific journals and conferences. Her current research interests evolve around technology-enhanced learning and knowledge management.

Pastra, Katerina

Cognitive Systems Research Institute
Greece
kpastra@csri.gr

Pessanha, M.

Polytechnic of Porto
Portugal
Pessanha@ese.ipp.pt

Poce, Antonella

Università Roma TRE, Department of Education
Italy
apoce@uniroma3.it

Quien, Maja

Croatian Academic and Research Network- CARNet
Croatia
Maja.Quien@CARNet.hr

Maja Quien is a sociologist and a PhD candidate at the Faculty of Humanities and Social Sciences in Zagreb, Croatia. She studied at the Faculty of Philosophy in Split where she won the Rector award for exceptional academic accomplishments. She is working as an Expert Associate at the Croatian Academic and Research Network – CARNet as a team member of EU funded projects (funded from CIP and IPA) at the Education Support Department. Prior to this she worked at a private education institution (providing secondary, high and adult education) as a Development Manager responsible for the implementation and development of EU projects and also as an Assistant Professor. She participated in several scientific research projects, published three scientific books, several expert articles and presented several papers at various international and national conferences. She is focused on topics within the sociology of the media, sociology of education and urban sociology as well as research work with a practical use.

Richter, Thomas

University of Duisburg-Essen
Institute for Technology-Enhanced Learning and Innovations for Didactics and Quality (TELIT)
Germany
thomas.richter@icb.uni-due.de

After 15 years of career as 'chief' and 'pastry cook', he studied Educational Sciences, IT, Technical Journalism, and BIS. In his doctoral thesis, he developed a

guideline for the systematic classification and description of culture-related investigations in design research. In 2007, he spent one research year at the KGIT in Seoul, South Korea where he investigated the context of e-Learning. In 2008, he joined the WIP-team at the faculty of economics in the University of Duisburg-Essen (UDE) as managing director of the Consortium of German Universities (KDU e.V.), lecturer, researcher, and project manager. Since 2014, he is a senior researcher and member of the board of the research institute TELIT (UDE). He published several papers in peer-reviewed conferences and journals and is particularly interested in e-Learning, OERs, international academic exchange, and intercultural education & management.

Rittberger, Marc

Deutsches Institut für Internationale Pädagogische Forschung
Germany
Rittberger@dipf.de

Marc Rittberger is Professor at the German Institute of International Educational Research (DIPF) and at Darmstadt University of Applied Sciences. He is director at the Information Center for Education at the DIPF. He holds degrees in physics and information science and had professorships at Düsseldorf and Geneva. Marc Rittberger is a member of several scientific boards, e.g. GESIS – Leibniz Institute for the Social Sciences, SWP – German Institute for International and Security Affairs, and at the management board of the Leibniz Research Alliance “Science 2.0”. His research interests are in the field of Information infrastructure, user studies, and information quality.

Rosewell, Jon

The Open University
United Kindgdom
jon.rosewell@open.ac.uk

Jon is a lecturer at the UK Open University where he has designed, led and taught many modules which make significant use of e-learning. He is also a life-long

student, on his way to a third degree! He has worked recently in quality assurance of e-learning with the E-xcellence project and recently adapted this work for quality assurance of OpenupEd MOOCs. His research interests include e-learning and assessment, informal learning and citizen science.

Shamarina-Heidenreich, Tatiana

University of Duisburg-Essen
Institute for Technology-Enhanced Learning and Innovations for Didactics and Quality (TELIT)
Germany
tatiana.shamarina-heidenreich@icb.uni-due.de

Tatiana Shamarina-Heidenreich is Scientific Researcher at the University of Duisburg-Essen (UDE). She studied Business Information Systems at the UDE obtaining her Diploma in 2010 and Education and Linguistics at the Barnaul State Pedagogical University (Russian Federation) receiving her Diploma in 1998. Since February 2011 she is working in the fields of Lifelong Learning at the UDE in the Department "Information Systems for Production and Operation Management" (WIP). Her main working fields are impact measurement, quality management (QM) as well as evaluation. She has got a strong background and expertise in leading, coordinating and contributing to European research projects (e.g. ARISTOTELE, OERtest, SIMBASE, Q-Cert-VET, PUMO, LoCloud). Currently she is responsible for the research activities in the PUMO and LoCloud projects.

Smith, David

Charles Sturt University
Australia
davismith@csu.edu.au

David Smith is a learning technology analyst with a PhD in the field of eLearning from Newcastle University in Australia. He has developed a broad expertise in education through his work in schools and universities. In the last ten years, he has specialised in the fields of learning pedagogy and technology working for education authorities and institutions in Australia and Europe. He has published

on these topics at international conferences and continues his research in these areas.

Sotiriou, Sofoklis

Ellinogermaniki Agogi
Greece
sotiriou@ea.gr

He is the Head of R&D Department of Ellinogermaniki Agogi, the first research department that operates in the school environment in Greece, where has been active in the co-ordination and development of research projects on implementation of advanced technologies (e.g. mobile applications, wearable computers, VR and AR applications, robotics) in science education and training. Since 2001 he is the Director of the Ellinogermaniki Agogi Center for Science Teachers Training. His main research field is the design, application, and evaluation of virtual and digital media environments that could bridge the gap between formal and informal science learning. He has been involved in a long series of EC joint research and technology funded projects. He is a member of the European Academy of Sciences (since 2003), member of the board of ECSITE (2004 - 2009) and member of the NAP (Network of Academics and Professionals) Executive Committee of EDEN.

Stracke, Christian M.

University of Duisburg-Essen
European Institute for Learning, Innovation and Cooperation
Germany
christian.stracke@uni-due.de

Christian M. Stracke is Coordinator of European and international research and cooperation and Team Leader for E-Learning, QM and Competence Development at the University of Duisburg-Essen (see: www.wip.uni-due.de), Advisory Professor at the East China Normal University (ECNU) in Shanghai (see: http://www.sole.ecnu.edu.cn/), and Adjunct Professor for E-Learning at the Korean National Open University (see: www.knou.ac.kr/engknou2/). As an

internationally recognized expert and innovator, his main working fields are innovative and technology-enhanced learning (TEL), impact measurement and competence modelling as well as quality management (QM), evaluation and standardisation in learning, education and training (LET). In international Standardisation he is elected Chair of ISO PC 288 on QM for Education, ISO Convener of SC36 on E-Learning and elected Chair of CEN TC 353, the European Standardisation Committee for Education & Training. He is author and editor of numerous books, handbook chapters, articles, and standards on learning innovations and quality. Christian M. Stracke is invited keynote speaker, PC member at many international conferences and has initiated and established. LINQ, the annual international conferences on Learning Innovations and Quality (see: www.learning-innovations.eu). He has studied educational sciences and gained extensive experience in leading large scale projects and in consulting and supporting institutions and public authorities to develop long-term policies and to introduce and improve learning innovations and quality. Many research projects were coordinated and supervised as quality manager by him including ODS (15.3 Mio Euros, see: www.opendiscoveryspace.eu) and Q.E.D. (budget: 4.0 Mio Euros, see: www.qed-info.de) as two of the biggest e-Learning projects next to many other obtained European research and development projects. He has founded ICORE, (see: www.ICORE-online.org) and eLC, the European Institute for Learning, Innovation and Cooperation (see: www.elc-institute.org) as well as QLET, the Quality Portal for LET (www.qualitydevelopment.eu). He is Co-initiator and Board Member of the German E-Learning Association D-ELAN merged into BITKOM, the biggest ICT association worldwide (see: www.bitkom.org/en).

Suvivuo, Pia

Turku University of Applied Sciences ltd, Turku
Finland

Tannhäuser, Anne-Christin

EFQUEL, Brussels
Belgium
anne.tannhauser@efquel.org

Anne-Christin Tannhäuser earned a degree in Educational Sciences and Linguistics from the University of Leipzig in 2007. She was trained at the Max Planck-Institute for Human Development in the use of qualitative and quantitative research methodologies. Since 2008 Anne-Christin Tannhäuser has been working for projects in the field of education and innovation at a European level. In EFQUEL Anne-Christin is responsible for project management of European funded projects.

Tomai, Eleni

National Technical University of Athens
Greece
etomai@mail.ntua.gr

Tovar Caro, Edmundo

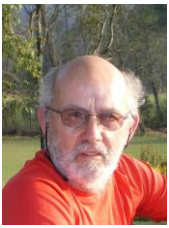
Technical University of Madrid
Spain
edmundo.tovar@upm.es

Uvalić-Trumbić, Stamenka

Academic Partnerships
Commonwealth of Learning

Ms. Stamenka Uvalić-Trumbić retired from her post as Chief of UNESCO's Higher Education Section in late November 2011. She was a long-time member of the UNESCO Higher Education team and a valued COL partner. She continues to collaborate with COL as a consultant on the COL/UNESCO/Hewlett Foundation

initiative “Fostering Governmental Support for Open Educational Resources Internationally”. Ms. Uvalić-Trumbić was voted International Higher Education Professional of the Year 2009 by her peers in the International Community of Higher Education (Washington, D.C, January 2010). She studied at the Universities of Belgrade and the Sorbonne. Prior to her 20 years of work in higher education at UNESCO, she was Secretary-General of the Association of Universities of Yugoslavia.



Williams, Keith

The Open University
United Kingdom
keith.williams@open.ac.uk

Dr Keith Williams has enjoyed a long career at the Open University developing innovative courses in materials and general engineering subjects. He served a six year term as Dean of Technology Faculty. As Director of Academic Development in Open University Worldwide (the OU’s commercial and international arm) he was active in developing international partnerships.He was Director of Distance Learning with The British Council for a three year period of leave of absence from the OU. He has been a major contributor to e-xcellence, a European project developing quality assurance methodology and criteria applicable to the use of e-learning in Higher Education and is a member of a UNESCO international task force on the subject. He is currently a Co Director of the OU’s eSTEeM unit established by the Faculties of Maths, Computing & Technology and Science to foster the development and promotion of scholarship associated with teaching STEM subjects through open and distance learning methodologies.

Zachopoulou, Evridiki

Alexandrio Technological Educational In stitute of Thessaloniki
Greece
ezachopo@bc.teithe.gr

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EIF / LINQ 2014 Keynote Speakers

Vijay Kumar (Director, Office of Educational Innovation & Technology, MIT)

June Breivik (Development Manager e-Learning at Norwegian Business School)

Zhu Zhi-Ting (Dean of School of Open Learning and Education, East China Normal University)

Pat Manson (Head of Unit, DG Connect, European Commission)

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The programme committee of the International EIF / LINQ Conference 2014 is composed of the following experts:

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