

# Empowering Learners for Lifelong Competence Development: Pedagogical, Organizational and Technological Issues

Henk Sligte<sup>1</sup> and Rob Koper<sup>2</sup>

<sup>1</sup> University of Amsterdam, SCO-Kohnstamm Institute, Amsterdam, The Netherlands

<sup>2</sup> Open University, Educational Technology Expertise Centre, Heerlen, The Netherlands

## I. INTRODUCTION

Early April 2008 an Open Workshop was organized by the EU 6th Framework Integrated Project TENCompetence. The objective of the workshop was to identify and analyze current research and technologies in the fields that provide design guidelines and evidence for powerful interfaces, interaction and navigation support, and tailor-made competence development opportunities for individual learners, teams and organizations. Especially open source infrastructures were thought to be interesting, infrastructures that contain all the services to (further) develop competences, using a variety of distributed knowledge resources (including actors), learning activities, units of learning and learning routes/programs that are available online.

For the workshop short papers were invited that were accepted after a peer review process. About half of these papers were written on the basis of work in progress within the TENCompetence project, the other half reported on research, trends and practical experiences in this rapidly growing field of support for lifelong learning.

As a follow-up to the workshop the presenters were invited to submit full papers that underwent a more rigorous review process. The result can be found in this issue of the International Journal of Emerging Technologies in Learning.

## II. TENCOMPETENCE

TENCompetence is a 4-year EU-funded Integrated IST-TEL project aiming at the development of a technical and organizational infrastructure for lifelong competence development. This infrastructure is composed of open-source, standards-based, sustainable and innovative technology. Through the infrastructure resources for learning become available, varying in scope, size and complexity, in combination with access to learning communities of actors. With this freely available infrastructure the European Union aims to boost the European ambitions of the Knowledge Society, by providing all European citizens, SMEs and other organizations easy access to facilities that enable the lifelong development of competencies and expertise in the various occupations and fields of knowledge.

## III. LIFELONG COMPETENCE DEVELOPMENT

In this section we will introduce the reader of this special issue to the core concepts: competence and lifelong competence development. The TENCompetence project is directed at the development of personal abilities/competences to support employability and personal growth in our modern knowledge society. The trend in our society is that jobs are changing very fast, people will have to be employable in multiple jobs, functions and roles during their lives. They will also act in many different real or virtual social communities, taking multiple roles and identities. Because of the increased complexity of tasks people should have expertise at a higher level and have to work in multidisciplinary teams to accomplish tasks. The expertise that people should develop in our society should be adaptable instead of routine based [2]. Persons should be able to take new tasks or roles and learn and adapt as quickly as possible to the new situation.

This is a challenge for the organisation of our educational institutions. More and more learning during life is of an informal or non-formal nature (Livingstone, ). Also, a modern society wants to provide their citizens with high quality jobs and sufficient free time to develop personal skills and social relationships that are not work related, but of importance for the quality of life.

There are at least two key factors to facilitate lifelong competence development:

First of all, we should overcome the barriers to lifelong learning. Longworth [3] summarizes the barriers to lifelong learning as follows:

1. Poor family culture of learning, low aspiration, low self-esteem, bad childhood experience of learning (mental barriers).
2. Lack of finance to participate, and lack of study facilities at home (financial barriers).
3. Distance to educational provision for a large number of students (access barriers).
4. Learning provision which not geared to the needs and characteristics of lifelong learners and does not sufficiently take into account the individual differences and circumstances of learners during life (learning design barriers).
5. Learning providers who supply information which is inadequate in attracting people to learning and fail to en-

sure that people have access to good-quality advice about learning opportunities throughout their lives (information barriers).

A second issue is that we should stimulate the exchange of knowledge and experience in (the by nature distributed) professional communities. There are still many professional areas that do not have the means for more informal knowledge exchange, and like modern guilds, help novices to become experts by natural, contextualized means of guidance at the workplace. Besides this informal knowledge exchange, also offerings of courses and events that match the needs of the knowledge worker should be realised.

As a consequence of these two issues we need to revise the structures we provide for learning and assessment. It also changes our perception towards learning fundamentally. In the traditional view, learning is separated from working and living. Learning is perceived as something that you do in schools or universities. A teacher is leading you into learning. This leads to the provision of standard career facilities in our society: a persons starts to follow primary, secondary, post-secondary education. When a professional starting qualification is attained one starts to work, build a career and sometimes some training courses are followed. This model should be revised fundamentally to keep up with the current developments in learning technologies and the demands of our society. We need a vision of learning, where learning is back where it belongs: as an integral part of your whole life, just like eating, drinking and breathing. You cannot stop learning and due to the ever changing job demands, new people you meet, new technologies and products introduced and the availability of a huge amount of open content we are heading into the direction that a second career path is developing, comparable with the self-made man in the past. However, in the past these self-made man were rare, only with a strong motivation and devoting they were able to attain good careers. To facilitate the knowledge society we should provide services for everyone to become a self-made human. Examples of these services are:

- Assessment services that are able to assess prior informal learning and experience (APL).
- Tools like ePortfolios that provide a basis for self-reflection and the generation of CVs.
- Services that help you with the creation of feasible and efficient personal development plans.
- Services that help communities to exchange knowledge and experience and to work and learn together
- Services that provides support during learning.

All these services should be available through Internet and/or mobile devices to allow to integrate them in the context of use.

This special issue addresses research into many of these different aspects: means to setup communities, new ways of assessment, flexible training of professionals, adaptive learning designs and the exchange of multimedia knowledge resources.

#### IV. THE PAPERS IN THIS ISSUE

In this section we will shortly introduce the eleven papers of this special issue.

The paper of Hotham & Rich provides an architecture for a large scale informal e-learning network. They conclude that it became clear that besides informal learning such a network should combine informal learning with formal learning elements.

The second paper from Reynolds and Heller concentrates on a pilot course in the public health sector, that is aimed at building competences in the public health sector in developing countries. The course is delivered through the People's Open Access Educational Initiative in order to test whether it is feasible to provide an online accredited diploma through the network.

The paper of Mason, MacNeill, Murphy and Ross provides a method to make teachers more aware of the learners perspective and to provide a structured way to articulate, design, evaluate and share learning designs. The model uses the 8 Learning Events Model as it is developed in Liège. The paper provides an evaluation of the approach.

The paper of Krassen, Nikolova, Ilieva and Stefanova describes a first experiment that has been performed with the Personal Competence Manager as it is developed in the TENCompetence project. It concentrated on the upgrading of the ICT skills of teacher trainers. The evaluation showed that the approach was successful and highly appreciated by the learners.

The fifth paper of Schoonenboom et al builds further on the Krassen et al paper: it provides an experiment to explore the effects of the Personal Competence Manager in practice. Five hypothesis were tested with 44 teachers in two conditions. The results showed that in the experimental condition more people passed the final competence assessment test.

The paper of Berlanga et al introduces the design of a ePortfolio system that can interact with the TENCompetence Personal Competence manager as tested in the papers by Krassen and Schoonenboom.

The next paper of Elliot discusses alternative ways of assessment needed for lifelong learning, informal learning and learning in the Web 2.0 arena. It compares the assessment 1.0 approach with the assessment 2.0 approach.

The paper of Angehrn and Maxwell describes the design of the TENTube tool that is used for connections within a social networks based on shared videos. The underlying hypothesis is that a higher connectedness of people to other people and to relevant assesss will motivate them to participate more actively and increase system usage.

The next paper of Wills et al is more technical in nature. It is focused on a delivery engine (ASDEL) for assessments that are modeled to the open standards IMS QTI. The paper concludes with a load testing of the system.

The paper of Pérez-Sanagustín et al presents an IMS Learning Design based template to support dialogic learning, an approach that can be used in lifelong learning with adults. The template has been tested by two designers/practitioners who have created dialogic learning based learning events with it.

The paper of Marenzi et al analysis the possibility to integrate social software into the TENCompetence infrastructure and identifies challenges involved.

AUTHORS

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**Henk Sligte** is with the SCO-Kohnstamm Institute for Educational Research, University of Amsterdam.

**Rob Koper** is with the Educational Technology Expertise Centre (OTEC), Open University of the Netherlands.