Editorial for the special issue "Mashup Personal Learning Environments"

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Editorial

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Biographical notes: Fridolin Wild is a Research Associate of the Open University, serving since 2009 at the Knowledge Media Institute as the General Scientific Manager of the European Network of Excellence STELLAR. He is the voted Treasurer of the European Association of Technology Enhanced Learning (EATEL). Before joining the OU, he was from 2004 to 2009 at the Vienna University of Economics and Business, there leading research in several ICT projects in technology-enhanced learning funded by the European Commission. He graduated at the University of Regensburg as a Magister Artium in Information Science and Politology in 2004.

Matthias Palmér has a background in Mathematics and Computer Science. He is a PhD student at the Royal Institute of Technology (KTH) with a focus on technology enhanced learning and semantic web. In his research, partly within the European projects PROLEARN, LUISA and ROLE, he has focused on how modern web technologies can be combined with data-based interoperability to empower learners and teachers. He has also designed and developed several tools for learning, including the concept browser Conzilla and the electronic portfolio system Confolio. Since 2007, he has had a leading role in the development of the Uppsala University Student Portal.

Marco Kalz is an Assistant Professor at the Centre for Learning Sciences and Technologies (CELSTEC) at the Open University of the Netherlands. He has more than ten years of experience in the field of technology-enhanced learning. He has worked as a Work Package Leader in several national and international research projects like the TENCompetence project or the OpenScout project. His research focus is the flexible support of self-organised learners with social

software and open educational resources. He has more than 30 international publications and he serves as an Editorial Board Member, Editor and Reviewer of international scientific journals.

This special issue is the result of three successful workshops during the European Conference on Technology-Enhanced Learning (ECTEL) from 2008–2010. These workshops have been motivated by two-trends in technology-enhanced learning. On the one hand, most research in the field has changed from an institutional towards a more individual focus on learning and competence development. This change from an institutional perspective to an individual has also broadened the scope from formal to non-formal and informal approaches. The second trend was based on recent technological developments like mashups and widgets. These developments have been the basis for a new kind of 'personal' learning environments (PLE). The personal aspect relates to the fact that learners are able to design their learning environments instead of tutors, teachers or administrators who do this e.g., as a preparatory activity before a course starts. PLEs typically consist of distributed web-applications and services that learners integrate for a specific

The aim of the workshop was to bring together the various research and development groups in technology-enhanced learning that currently focus on the development of the next generation learning environments – learning environments that put the individual centre stage and empower learners with design capabilities by deploying modern mashup principles to establish system-spanning interoperability. This topic and the PLE concept has been discussed in several European IST-funded research projects such as iCamp, LTfLL, LUISA, Palette, Prolix, STELLAR, TENcompetence, OpenScout, and ROLE. Therefore, the workshop has also served as a forum to bring together researchers and developers from these projects and an open public that have an interest in understanding and engineering mashup PLE (MUPPLE).

This special issue would have not been possible without the reliable support and dedication of our highly-regarded and reviewers, who we thank most sincerely. Based on a double-blind review of the submissions to the special issue the following six papers have been chosen for publication:

- The paper by Wilson, Sharples, Griffiths and Popat describes and experimental implementation of the Moodle virtual learning environment using the W3C Widget specification and Google Wave Gadget API to replace existing core features in the system. The article discusses several representative challenges proved through this implementation.

- The paper by Chatti, Jarke, Specht, Schroeder and Dahl focuses on the problem of ad hoc mashup creation by end users. Based on a review of existing platforms for mashup creation the authors introduce the concept of model-driven mashup development (MDMD) that should improve the rapid and user-friendly creation of widgets by learners.

- The paper by Sire, Bogdanov, Gillet, Palmér and Wild discusses six qualitative dimensions that can be defined to analyse the main features of PLE platforms. As a proof of concept of the introduced dimensions, a few familiar Web 2.0 platforms are first measured along each dimension and then, using the results visualised as spider diagrams, compared with respect to their usefulness as PLEs.

- The paper by Glahn, Specht and Koper reports on a qualitative study about the application of tag clouds for supporting meta-cognition in self-directed and incidental learning. The study analyses the use of the ReScope system that provides a personal tag cloud visualisation of the tags that are used at a public social bookmarking service.

- The paper by de la Fuente Valentin, Leony, Pardo and Delgado Kloos discusses important issues related to the management of users' identity and authorisation. Based on the discussion of an IMS LD scenario aspect like user correspondence, authenticated data retrieval, and remote account creation are discussed.

- The paper by Verpoorten, Westera and Specht introduce the concept of widget-based reflection amplifiers in e-learning courses. The study reports the results of a survey that asked designers of Open Educational Resources about their opinions on different types of reflection amplifiers.

These articles of the special issue document major achievements of recent years in this thriving new field of mashups and PLE. It goes without saying, however, that there are still a number of unresolved open problems and grand challenges to be faced.

We have used particularly the recent MUPPLE workshop at EC-TEL 2010 to elaborate shared grand challenges together with the workshop participants. The most refined grand challenge for MUPPLE that emerged from this discussion is formulated as follows: 'Build a one person university in 15 minutes'. This involves many challenging aspects: to quickly assemble an environment of tools from a large set of alternatives; to quickly find unknown peer learners willing to collaboratively engage on a particular topic; to identify new methods of assessment for bridging from the informal to formal learning and getting achievements accredited. Further research is needed that excels in these specialised areas or brings them together in a mashup.

We have enjoyed the workshops during the last three-years and we thank the organisers of the ECTEL conference for this opportunity. We also thank all authors of papers and participants for their input to the discussion. Last but not least, we would like to thank the editor-in-chief of the *International Journal for Technology Enhanced Learning* – Ambjörn Naeve – for his continuous support with this special issue.