

## **The E-Portfolio Method with Open Source Tools**

*Wolf Hilzensauer, Salzburg Research, [wolf.hilzensauer@salzburgresearch.at](mailto:wolf.hilzensauer@salzburgresearch.at)*

*Sandra Schaffert, Salzburg Research, [sandra.schaffert@salzburgresearch.at](mailto:sandra.schaffert@salzburgresearch.at)*

*Martin Prokoph, Universität der Bundeswehr München, [martin.prokoph@unibw.de](mailto:martin.prokoph@unibw.de)*

*Markus Ulrich, Universität der Bundeswehr München, [markus.ulrich@unibw.de](mailto:markus.ulrich@unibw.de)*

*Diana Wieden-Bischof, Salzburg Research, [diana.bischof@salzburgresearch.at](mailto:diana.bischof@salzburgresearch.at)*

**Key words:** e-portfolio, open source, open educational resources, teacher training

### **Abstract**

E-portfolios are known as a technology supported learning method for the documentation of competency development-. Based on the results of a Leonardo da Vinci project (MOSEP - More self-esteem with my ePortfolio) we describe a new training concept for teachers and tutors using open source e-portfolio software tools. We want to emphasise, that the work with e-portfolio is not only a question of tools, but a sustainable measure to support self-directed learning.

### **Workshop leader**

Mag.<sup>a</sup> Diana Wieden-Bischof

Salzburg Research,

Jakob Haringer Strasse 5/III

[Diana.Bischof@salzburgresearch.at](mailto:Diana.Bischof@salzburgresearch.at),

Tel.: +43/662/2288-307

### **1. Introduction**

In recent times „e-portfolio“ has become the buzz word for individual, self-directed and lifelong learning. The e-portfolio hype is unbroken and many educational institutions are addressing the question on how to implement the concept of e-portfolios in their curriculum. In this discussion, many other questions arise, too. In this paper we want to answer the question: How can teachers and tutors be trained to being able to support learners in their e-portfolio process using open source tools?

Based on the work of an EU-project called MOSEP (More self esteem with my ePortfolio!) this paper presents and describes a new training concept for teachers and tutors. Furthermore, we concentrate on open educational resources and open source e-portfolio tools referring to results of the Open eLearning Content Observatory Services (OLCOS).

### **2. The need of a training of teachers to work with E-Portfolios**

Salzburg Research defines e-portfolios as a technology supported learning method for the development of competencies, whose entire developing process and results are demonstrated as well as illustrated and documented via digital information objectives. Learners collect or rather save their self-contained and self-made products (artefacts) in a learning environment and reflect their achieved goals and results. In the course of time of a learning biography the results could be flexible compiled together and passed on for different purposes. The planning of an individual learning target as well as their results are accompanied and evaluated from teachers and peers.

This definition is far beyond the understanding of an e-portfolio as a “digital application folder”, in which you find a collection of scanned certificates. From our point of view, e-portfolios offer and allow an overall prospect on competencies of individuals or groups of people. Besides the acquired and learned elements, e-portfolios document the learning process and therefore the developing process of competencies. All forms of expressions provided by today’s multimedia

technologies are allowed.

The five most important processes in working with e-portfolios are:

- to clarify the target and context of the digital portfolio work
- to collect, select and connect artefacts with a learning target
- to reflect and manage the learning process
- to present the e-portfolio artefacts
- to assess and evaluate the learning processes / development of competencies

According to Graham Attwell (1997) and in respect to the implementation of e-portfolios the new teacher has to be able to: “provide technical support, organize the contexts and communities of learning, formulate organisational objectives, facilitate the structure of portfolio contents, facilitate reflection, guide and monitor the students advancement through the integral cycle of investigative learning, help in the evidence of competences, support planning, interact and conduct conversation with the students, plan an assess the overall process“ (Attwell, 1997).

Out of this vision of a “perfect teacher” we can deduce, that working and learning with e-portfolios requires a set of certain competencies. Now, one question seems to be obvious: How can we ensure that a teacher gets most of these competencies? One way is maybe to let the teachers have an e-portfolio, too. In that way it is possible to ensure, that the teacher is working actively and builds up experiences. The skills and the experiences, achieved by working with an own e-portfolio, might be very useful to understand the new role of a teacher and to use this knowledge in practice. Furthermore, a teacher or trainer will be able to foresee and understand problems, which may appear while working. These difficulties might be caused by problems of understanding or might be of technical origin. But if the teacher has solved those problems once by himself it may be more probable that he/she can guide his/her students through the same or similar problems much better, than without.

But who trains the teachers? This question leads us to a challenge, which the MOSEP-Project addresses. MOSEP is a European project, funded by the European commission in the Leonardo da Vinci programme. It has nine partners from six European countries, including Austria, Germany, UK, France, Poland, Lithuania and Bulgaria. The main objective of the project is (besides a basic study and the implementation of a testing phase) to design a course concept for the use of freely available resources for teachers and vocational counsellors for the use of e-portfolios.

## **2. The potential of E-Portfolio Work with Open Content and Open Source Tools**

In the last few years, Open Educational Resources (OER) such as educational materials made available under a liberal Creative Commons license or Open Source software tools that enhance learning processes gained much attention.

Following the OLCOS Roadmap 2012 on Open Educational Practises and Resources OER means

- "that access to open content (including metadata) is provided free of charge for educational institutions, content services, and the end-users such as teachers, students and lifelong learners;
- that the content is liberally licensed for re-use in educational activities, favourable free from restrictions to modify, combine and repurpose the content; consequently, that the content should ideally be designed for easy re-use in that open content standards and formats are being employed;
- that for educational systems/tools software is used for which the source code is available (i.e. Open Source software) and that there are open Application Programming Interfaces (open APIs) and authorisations to re-use Web-based services as well as resources." (Geser 2007, p. 20).

According to Geser (2007) OER are understood to be a means of leveraging educational

practices and outcomes and to be an important element of policies that want to leverage education and lifelong learning for the knowledge society and economy. This expectation is to some degree informed by the observation that the huge investments made so far in ICT-enabled teaching and learning have not brought about profound changes in educational practices. In particular, notions that the use of ICT would promote student-centred and collaborative approaches have not been fulfilled. Rather there is a considerable mismatch between teaching and learning as framed and maintained by typical educational institutions and the fabric of work in a knowledge-based economy “out there”. In addition, there is an obvious gap between current educational practices and what a younger generation of students uses almost naturally to communicate and form communities of interest outside “the classroom”. The OLCOS Roadmap 2012 on Open Educational Practises and Resources explores the possible pathways towards a higher level of production, sharing and usage of OER and provides an orientation as well as recommendations on possible measures and actions to support decision making at the level of educational policy and institutions.

In September 2004 the European Commission decided, on the basis of expert recommendations, to consider Open Source systems (OSS) a decisive factor for Europe. In Austria, OSS is also gaining importance in the field of education, which is shown clearly by campaigns initiated and supported by educational policy, such as ‘Desktop4Education’<sup>1</sup> or ‘Edumoodle’<sup>2</sup>. Furthermore, many EU projects deal with this subject and the EU has set up an Open Source observatory, focusing on developments in this area and supporting the introduction of OSS.

According to these facts and considerations, the MOSEP tutorials are based on the OER principles: The course concept foresees that all materials can be (freely) downloaded and be uses open source software. Furthermore, the use of a Wiki system allows users to annotate and enhance the tutorials e.g. with additional resources and annotations.

The MOSEP tutorials are in principal designed to being implemented without the use of a specific portfolio software. Nevertheless, a software recommendation has been given for the implementation of the MOSEP course. The selection of the tools is based on a study conducted by the EduMedia Group at Salzburg Research. The study gives a detailed analysis of today’s most common e-portfolio tools and was evaluated with regard to implementation in higher education institutions (Hornung-Prähauser, Geser, Hilzensauer & Schaffert, 2007). It provides an overview of the current e-portfolio software market (open source and commercial) and describes the main functional features of selected software products. Furthermore, an analysis on the usability for young learners and teachers who are ‘e-portfolio beginners’ can be found. It strives to offer information about and orientation on the software market and to support educational institutions in the choice of e-portfolio software products. In the field of e-portfolio software, currently three forms of software can be distinguished (see also Hornung-Prähauser, Geser, Hilzensauer & Schaffert, 2007).

Independent e-portfolio software products: Software solutions like OSP and Mahara are potential software products developed especially for, and used for, portfolio applications. In the field of open source software several products are available. Helen Barrett, an internationally acknowledged expert on e-portfolios, has compiled a list of 12 open source e-portfolio products.

Learning management systems with e-portfolio functions: For the widely used learning management system Moodle, two potential portfolio modules are available as plug-ins (Moofolio and Exabis). This is particularly interesting for institutions already using Moodle, as the introduction of e-portfolio processes is comparatively simple.

Social Software, Web 2.0 and Social Networking Tools: Social software is highly focused on the learners. Also, it can be assumed that wikis, weblogs and other elements of social software will be available as standard tools for educational aid in the near future.

For the concise usage of the MOSEP course and the practical implementation in an institution,

---

1 <http://www.d4e.at/>

2 <http://www.edumoodle.at/moodle/>

the course provides guidelines and tutorials for the usage of two different open source e-portfolio tools: Mahara (<http://www.mahara.org>) & Elgg (<http://elgg.net>). Both are available as open source products and cover the main requirements for a basic e-portfolio process.

### 3. The MOSEP-tutorials

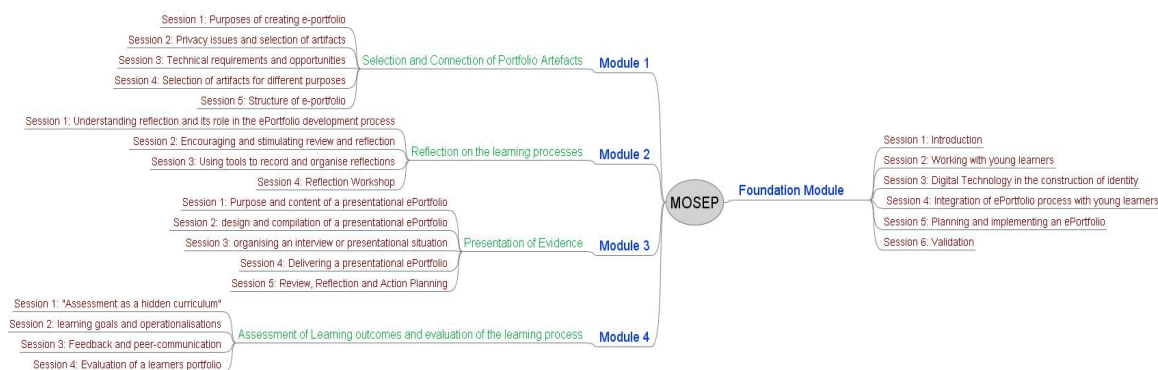
#### 3.1 Media-Didactical Concept – course philosophy

Beneath the use of open educational content, the media-didactical concept is based on the assumption that the course should be suitable for different target groups (teachers, trainers, tutors, vocational counsellors, ...) and adaptable according to the institutional needs: For that, the content of the course should be „modular“, which means, that the topics and the assignments (if they are not appropriate for the institutional context) shall be combinable. Therefore the content in the course shall be divided in small „bits and pieces“, which can easily be re-used and (if necessary) shuffled with other activities. The tutor and his/her students are able to determine the whole course timing freely. Only the timings for single activities or face-to-face situations are recommend within the course structure. So the course can take whole days, may be split up into half-days as well as after school sessions or even, thanks to the online option, can be accomplished at home.

As it is impossible, to name a prototypical e-portfolio software tool which is appropriate for a generic e-portfolio usage, the MOSEP philosophy tries to develop the course as platform independent as possible. In order to fulfil this requirement, none of the practical assignments require certain functionality, as long as the basic e-portfolio functionalities are available. Each module is divided in different sessions; each session consists of information material, resources, web links and multimedia artefacts such as video tutorials, screencasts and web-resources. Furthermore, practical assignments shall activate the course participants to work on their individual competence development by using the portfolio method themselves. Last but not least, the tutorials should be usable by the teachers, without external guidance.

#### 3.2 Overview of the Course Structure

The course is divided in a foundation module and 4 additional modules. The content of the modules are not only described, but also formulated as a question. Participants can easily investigate the purpose of the topic.



**Figure 1:** Overview of the MOSEP course structure  
<http://www.wikieducator.org/MOSEP>

#### 3.3 Description of the Modules

The content of the modules is derived from the main findings of the basic study which has been implemented by the project consortium at the beginning of the project (see Attwell, Chrzaszcz, Hilzensauer, Hornung-Prähauser, Pallister, Prokoph & Ulrich 2007). The topics of the modules are based on a „classical“ e-portfolio approach, which can be often found in the e-portfolio literature: planning – selection/connection – reflection – presentation – assessment.

### **3.3.1 Foundation module**

What is an e-portfolio and what are its advantages? How to plan and implement an e-portfolio? To start working with e-portfolios, learners need to know exactly what e-portfolio work means and how these learning processes can be planned, implemented and used. These questions are addressed answered in the ‘Foundation module’.

Introduction | Why e-portfolio?

Working with young learners | How can I support young learners?

Digital technology in the construction of identity | Why might they need it?

Integration of e-portfolio process with young learners | e-portfolio and curriculum – which barriers, which strategies?

Planning and implementing an e-portfolio | How to plan and implement an e-portfolio?

Validation

### **3.3.2 Module 1: Selection and connection of portfolio artefacts**

How can I select artefacts and connect them to each other?

In this module teachers are guided towards the development of specific skills that will enable them to support learners (pupils and students) as they select appropriate digital artefacts for their e-portfolio.

Purposes of creating e-portfolio | Why create e-portfolios?

Privacy issues and selection of artefacts | Who owns the e-portfolio?

Technical requirements and opportunities | What do I need, what do I get?

Selection of artefacts for different purposes | Why do I need what for which reason?

Structure of e-portfolio | What is the best way to structure it?

### **3.3.3 Module 2: Reflection on the learning process**

How can I reflect on my own learning process during e-portfolio work?

In this module teachers will develop set of skills necessary to support learners on reflecting on their individual learning process.

Understanding reflection and its role in the e-portfolio development process | Why is reflection important?

Encouraging and stimulating review and reflection | How can I encourage my learners?

Using tools to record and organise reflections | What exists and what is appropriate?

Reflection Workshop | How to set it up?

### **3.3.4 Module 3: Presentation of evidence**

How can an e-portfolio be presented?

In this module teachers will learn how to organise a possible presentation of e-portfolios and their artefacts and how interviews can be initiated.

Purpose and content of a presentational e-portfolio | What is a presentational e-portfolio and what are its purposes?

Design and compilation of a presentational e-portfolio | What possibilities are there for designing and compiling the e-portfolio?

Organising an interview or a presentational situation | How to plan and design

Delivering a presentational e-portfolio | What do I have to consider?

Review, Reflection and Action Planning | What are the next steps?

### **3.3.5 Module 4: Assessment of learning outcomes and evaluation of the learning process**

How can assessment be carried out and the learning process evaluated?

Here teachers will learn why assessment is important, how to plan and guide assessment of e-

portfolios, and how feedback and evaluation can be carried out.

Assessment as a hidden curriculum | What does that mean?

Learning goals and operationalisations | How can I create them?

Feedback and peer communication | How can I initiate and motivate my learners' feedback and communication?

Evaluation of a learner's portfolio | How can summative assessment be carried out?

#### 4. Perspectives

According to the work plan of the MOSEP project, these tutorials will be tested in 2007 with several target groups. After the evaluation of the tutorials they should serve as a profound base for self-directed learning and institutionally organised training of teachers, trainers and vocational counsellors.

#### References

- ATTWELL, GRAHAM (1997). *New Roles for vocational Education and training teachers in Europe. A new framework for their education. In: Journal of European Industrial Training. Volume 21, Issue 6/7, p. 256-265.*
- ATTWELL, GRAHAM; CHRZASZCZ, AGNIESZKA; HILZENS AUER, WOLF; HORNUNG-PRÄHAUSER, VERONIKA; PALLISTER, JOHN; PROKOPH, MARTIN & ULRICH, MARKUS (2007). *Grab your future with an e-portfolio! Study on new qualification and skills needed by teachers and career counsellors to empower young students with the e-portfolio concept and tools.* POLAND.
- GESER, GUNTRAM (2007). *Open Educational Practices and Resources - OLCOS Roadmap 2012.* URL: <http://www.olcos.org/english/roadmap/>, accessed January 2007.
- HORNUNG-PRÄHAUSER, VERONIKA, GESER, GUNTRAM, HILZENS AUER, WOLF & SCHAFFERT, SANDRA (2007). *Didaktische, organisatorische und technologische Grundlagen von E-Portfolios und Analyse internationaler Beispiele und Erfahrungen mit E-Portfolio-Implementierungen an Hochschulen.* Salzburg. URL: [http://edumedia.salzburgresearch.at/images/stories/e-portfolio\\_studie\\_srfg\\_fnma.pdf](http://edumedia.salzburgresearch.at/images/stories/e-portfolio_studie_srfg_fnma.pdf), accessed July 2007.