

ePortfolio at the University of Vienna – Framework and Pilot Projects

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Abstract—In this paper we present the first draft of the University of Vienna ePortfolio framework which is closely interlinked with the university-wide eLearning strategy. Conceptually the aims of the framework are to bridge the gap(s) between different ePortfolio conceptualizations in order to provide orientation, to integrate ePortfolio on a curricular level within the context of a university-wide community, and to envision ePortfolio as a tool for quality development for the study programmes. In order to illustrate the direction Vienna University is taking concerning curricular integration as well as to present the methodology currently being developed in more detail, we will present the *Media Competencies Seminar* as a case of an ePortfolio-implementation into a mini-curriculum, using an adaptation of creative writing techniques as didactical methodology.

Index Terms—ePortfolio, Competencies, Creative Writing, Curriculum.

I. INTRODUCTION

In January 2007 the national ePortfolio project “*Modellfälle für Implementierungsstrategien für integrierte ePortfolios im tertiären Bildungsbereich*” (cases of implementation strategies for implemented ePortfolios in tertiary education) started. The ‘forum new media’ (*fnm-austria*), as project coordinator, will bundle the models, results and different foci of five universities and an applied university (*Fachhochschule*) to generate a more general framework and collection of models (for details see <http://www.fnm-austria.at/ePortfolio/Start/>).

Within the overall project, the focus of the University of Vienna Centre for Teaching and Learning lies on the implementation of ePortfolio into study programmes, with the goal to develop an ePortfolio framework as part of the eLearning strategy, to develop a guide to the curricular implementation of ePortfolio, and to extract a more general model from pilot cases. These pilot cases are five study programmes at different faculties.

A. Organizational goals for an implementation of ePortfolio

For the University of Vienna, the goals for an introduction of ePortfolios and the implementation into the pilot cases are derived from the performance indicators for the agreement on objectives between university and ministry for science and research (bm.w_f), the university’s development plan ‘*Universität Wien 2010*’ [1], and the specific needs of the pilot partners. Four major goals have been identified:

- The use of ePortfolio to support critical study phases.
- Decrease in drop-outs.
- Enhancement of employability.
- The support of inquiry-based teaching and learning.

II. THE VIENNA UNIVERSITY ePORTFOLIO FRAMEWORK

A. Different Notions of ePortfolio and their Implications

ePortfolio concepts found in the literature are diverse and often even contradictory in their goals. Meeus; VAN Petegem and van Looy [2] identified 49 different notions of ePortfolio. As predominant conceptualizations in the context of the higher education system we can see *presentation portfolio*, *process portfolio* and *assessment portfolio* [3, 4]. While the latter seems to be of little interest to a Continental European university culture - there is little tradition of standardized testing and thus no need of introducing ePortfolio as a tool for qualitative assessment - the concepts of process and presentation portfolio both offer promising traits. A presentation portfolio provides a space for the documentation of work and the representation of an individual’s competencies. The process portfolio focuses on the reflection of the learning process with the aim to support *deep learning* (for a discussion see Biggs [5]). At the intersection of both lies the reflection on the individual’s competencies as a basis for taking stock of formal and informal learning processes and planning next steps.

However, if an ePortfolio is to offer both, we perceive an inherent contradiction: while the presentation of ones competencies and work serves the society’s goal of the employability of graduates, learning processes are deeply personal and require a protected space for the learner. Thus a presentation portfolio is inherently aimed at the public, while a process portfolio is a rather intimate space.

The question what is public and what is private gains yet another dimension when ePortfolio is seen as part of the curriculum, because the notion of assessment portfolio is re-entering through the back door: the ePortfolio must be considered to be part of the students’ workload and is therefore part of their assignments.

B. ePortfolio in a Community Context

In pedagogy there is now a widely accepted notion of learning processes that rejects a ‘knowledge transfer metaphor’ in favour of viewing learning as the active construction of knowledge [5]. This expansion of the students’ role from “consumers of knowledge” to active participants in knowledge processes must be based on active learning processes rooting in their learning

biographies. On this note we propose that within the semi-public space of an intra-university public the ‘presentation dimension’ of ePortfolio can be more than an electronic *curriculum vitae*, but starting point for an active community.

By communicating competencies and products of learning within a community, student artefacts can not only be recognised and valued by a broader audience, students are invited to take on an active role and be partners in the University’s knowledge processes. Thus, on the collective level we conceptualize an implementation of ePortfolio as a potential focal point for student participation in knowledge processes.

C. The University of Vienna ePortfolio Framework

When implementing ePortfolio on study programme level, those involved should be aware of the options and contradictions mentioned above. Trade-offs must be considered carefully according to the specific needs and goals. Aim of the University of Vienna ePortfolio

framework is to provide orientation and guidelines in this process.

For the University of Vienna ePortfolio framework we consider four dimensions of ePortfolio to be relevant: personal competency planning, the learning process, presentation, and infrastructure.

When looking at the participants involved with an ePortfolio implementation at university, the individual learner will take on a different perspective from teachers, which will in turn have a different perspective from study programme directors, eLearning representatives, and other institutional bodies. Thus the organizational levels we take into account are the individual, courses and modules, and finally the institutional level, including the curriculum.

For each ePortfolio implementation a balance must be found, which makes sense for all stakeholders involved at the different institutional levels. In the following paragraphs we will describe the issues emerging for each dimension and group of stakeholders. An overview is given in table I.

TABLE I.
UNIVERSITY OF VIENNA ePORTFOLIO FRAMEWORK

	Individual (Learners)	Course- and Module level (Teachers)	Curriculum/ Institution (Study programme directors, eLearning representatives, other institutional bodies)
Competency planning	Meta-Reflection - individual competency planning Reflection of extra- curricular acquisition of competencies	Implementation of Meta-Reflection processes in courses and modules as a bracket to the curriculum	Curricular quality development processes
Learning processes	Active knowledge construction and production, individually, as well as with peers, supported by teachers and tutors	Integration of ePortfolio with existing blended learning concepts; Cooperative knowledge production on course and module level	
Presentation	Documentation of competencies, representation of results of work	Content base on module and curricular level	Interface to institutional knowledge processes
Infra-structure	Acceptance of ePortfolio-Software	Design of ePortfolio based on teaching- and learning concepts; Interface to LMS and other tools	Providing an ePortfolio tool; Interfaces to other central services: LMS, Digital Asset Management Systems and others

For students an ePortfolio may provide the following:

- Personal competency planning: ePortfolio can be used for offering support in the reflection of the individual’s abilities and goals.
- Support of the learning process: ePortfolio can be utilized for fostering understanding as well as for the active construction of knowledge and production of artefacts. This can take place individually or with peers, with the support of teachers or tutors.

- Presentation: Providing an infrastructure for the presentation of students and their competencies, and documenting them with artefacts produced.
- The technical infrastructure: The ePortfolio-software-tool provided must fit students’ media competencies and be acceptable for them.

On course as well as on module level the following points should be considered for an ePortfolio implementation:

- Personal competency planning: Meta-Reflection processes can be part of a bracket spanning the curriculum, helping students with orientation and decision making, i.e. students can be supported in finding their individual way through the curriculum by questions guiding their reflection regarding their current situation, strengths and weaknesses, competencies, personal questions and future plans. However, if this kind of portfolio-work is not part of the workload of courses and/or modules, they will not be documented by the students. We see this as the key to a curricular implementation of ePortfolio.
- Support of the learning process: Where possible, ePortfolio-work must be integrated with existing blended learning concepts in a way which makes transparent what is part of the common ‘seminar room’ in the Learning Management System (LMS) and what is part of portfolio-work. An implementation of ePortfolio should not lead to a substantial increase in teacher workload. ePortfolio can be used to foster individual or cooperative knowledge production, because student work will be visible and can therefore be valued beyond the classroom.
- Presentation: The production of artefacts by students, student groups and teachers can contribute to the ongoing development of a curricular content base.
- The technical infrastructure: The ePortfolio should be chosen and/or designed in a way which fits teaching and learning concepts as well as the media competencies of students and teachers. If a LMS is used, students should be able to easily navigate between different software tools.

From an institutional perspective the following points are relevant:

- Personal competency planning and support of the learning process: ePortfolio potentially provides an excellent basis for curricular quality development processes. Students’ reflections on competencies and contents provide valuable qualitative feedback on the coherence and overall quality of the curriculum.
- Representation of knowledge and products: ePortfolio provides a potential interface between students’ work and institutional knowledge processes.
- Technical infrastructure: The institution must decide whether it provides a central ePortfolio tool with services and interfaces to other central services such as the LMS, Digital Asset Management Systems and others.

D. ePortfolio Pilot Partners at Vienna University

Currently five partners – faculties or study programmes – have started implementing ePortfolio into courses, modules or curricula as pilot projects.

They have been chosen on the grounds that they are generally early adopters of eLearning and have developed and proven an affinity to new media in the course of the implementation of the general eLearning strategy. Specifically, they have either derived a learning paradigm in concordance with the university paradigm of research-based, competency-oriented, and eLearning-supported teaching and learning or they are using eLearning as

means for quality development in teaching, and/or are participants in the curriculum *Education for eTutors and Knowledge Experts*. The nucleus of this programme is the Media Competencies Seminar which will be presented as a case in the next chapter. An overview over the partners – subject, faculty, Bologna-cycle of the curriculum, and main goal for piloting ePortfolio is given in table II.

TABLE II.
EPORTFOLIO PILOT PARTNERS

Subject	Faculty/Centre	Bologna-cycle	Goals
Translation Studies	Centre for Translation Studies	BA	Enhancement of employability
Translation Studies	Centre for Translation Studies	Ph.D	Support of critical study phases
Mini-Curriculum “Media Competencies Seminar” (Centre for Teaching and Learning)	Centre for Translation Studies, Faculty for Computer Science, Faculty for Philosophy and Educational Sciences, Faculty for Social Sciences	BA and MA	Enhancement of employability
Sports Sciences	Centre for Sports Sciences and University Sports		Forthcoming
MEi:CogSci	Faculty for Philosophy and Educational Sciences	MA	Inquiry-based teaching and learning

III. CASE: THE MEDIA COMPETENCIES SEMINAR

The University of Vienna has a long and successful tradition in assigning advanced students as tutors. These tutors perform student teaching and learning support in small groups or assist teachers during the courses.

In order to qualify these tutors in media and educational competencies, the Centre for Teaching and Learning provides an interdisciplinary seminar for them, the *Media Competencies Seminar*.

The seminar utilises portfolio-work as a tool for personal development planning, to support learning processes of the individual modules as well as for integration of diverse topics of the modules.

A. Seminar Structure and Aims

Composed of eight structurally and temporally interconnected modules, the seminar implements a mini-curriculum which is bracketed by the integration of an ePortfolio.

In the seminar students should acquire the following competencies:

- Ability to handle new media such as web tools and social software like wikis, Learning Management Systems, etc.
- Ability in handling educational technologies
- Basic knowledge and understanding in learning theory and didactics
- Basic knowledge and understanding of copyright in eLearning settings

- Knowledge and understanding of group dynamic processes
- Sensitivity and awareness of gender and diversity issues
- Ability in moderating virtual and physical learning groups
- Ability to cultivate and support virtual and physical communities
- Ability to communicate across disciplines
- Ability to reflect on individual and group action
- Ability to participate in the cooperative construction of knowledge
- Ability to contextualize contents for ones own work

As there is no one-to-one relation between the contents of the eight modules and the competencies to be acquired, the use of ePortfolio is conceptually focussed on the support of the learning process and serves for contextualisation in two respects. First, it integrates contents across the different modules of the seminar, second it provides an interface between contents and personal experiences. Thus, ePortfolio is to provide a golden thread through the seminar.

B. Methodology and Implementation

Generally, ePortfolio tools accept a variety of data formats such as audio, video and picture formats. However, text still remains the predominant medium of expression. We thus view ePortfolio work to a large extent as a writing process.

According to the principles of free writing (Elbow, 1981), a creative writing technique was used for this ePortfolio pilot case, the goal is to overcome barriers to express oneself in written form by simply encouraging the students to produce ‘output’ as a basis for further reflection.

As a consequence, concerning the assessment of the ePortfolio assignments we decided that students were not graded for the quality or contents of their writing, only the fact that they participated in the ePortfolio-work contributed to their grade.

On the modular level we used circular, module specific questions asking the students to reflect their personal increase of achieved competencies on the contents covered. The tasks and questions were personally addressed to the students within the ePortfolio, and could be accessed and commented by colleagues if permitted by the student.

Based on the methodologies of creative writing by Elbow [6], we devised a “Writing-Surveying-Writing Cycle” inquiring the individual knowledge and competencies on the module topic before and after it took place.

The first cycle aimed at students’ personal experiences in the field covered by the module (storytelling writing), followed by explicating prior knowledge and personal expectations of the particular module (surveying writing). After surveying the topic during class, students had to reflect and compare the effective change of knowledge with the former expectations (reflective writing). Personal contextualisation and integration on a curricular level was focused by creating a specific individual scenario concerning the modules topics (integrative writing). Selection of tasks and questions was performed according

to the covered module content. Examples for each Question category are given in table III.

TABLE III.
FREE WRITING TECHNIQUES AND TYPICAL QUESTIONS USED

Question category	Example Module	Example Task
Story-telling writing	Educational technologies & Learning Design	Remember a lecture in which you have “learned especially well”. Why do you remember this specific lecture? What was special?
Surveying writing	Learning & Teaching in/with Groups	Why do you believe, you are a good eTutor? What are your potentials? What do you still have to work out?
Reflective writing	Handling of Media	What did you take home from this module? What was new and interesting? What was boring or too complicated?
Integrative writing	Educational technologies & Learning Design	Remember a very bad lecture and describe what you would change to make it an extraordinary good lecture!

ePortfolio software tool and methodology were introduced to the students in a three hour long face-to-face workshop at the beginning of the semester. Students’ expectations on the whole course were inquired at the beginning and reflected at the end of the course through several feedback questions. In order to gain a systematic view of the interconnections of all achieved competencies on a supra-modular level an ePortfolio check-out workshop was conducted face-to-face in order to get the students’ feedback and to introduce the two final ePortfolio-tasks: a competency profile and the design of an own eTutor project involving the competencies gained.

As ePortfolio software tool, the web-log-based community tool ELGG (<http://elgg.org/>) was used with some minor customizations.

C. Evaluation of the Media Competencies Seminar

A thorough evaluation of this ePortfolio pilot project was conducted, encompassing the following points:

- Competency gain by the students (and thus testing ePortfolio as a tool for quality development)
- Acceptance of the ePortfolio method employed
- Quantitative analysis of the student output
- Acceptance of the ePortfolio tool

The evaluation drew from the following elements:

- The ePortfolio postings of the students
- Verbal feedback in the face-to-face final workshop of the seminar
- Evaluation questionnaire
- The Students’ personal competence profiles

In order to evaluate the success of the seminar, the competencies acquired and reflected by the students were compared to the learning outcomes defined above.

First, generic competencies of the students were elicited through their intensive participation in the ePortfolio process, reflective discussions on the different module subjects and group processes. Second, students defined the

generic competencies achieved in their competence-profiles explicitly concerning their possible application in their work as eTutors.

In their own words, students distinguished clearly between so called “social” competencies and “specialised” competencies within their reflection and their competence profiles. See the most important competencies in listed students competence profiles and feedback in table IV.

The ability to transfer the competencies gained into action was reflected in the very detailed project designs presented at the end of the course. We found it remarkable that in half of the cases the final task of the students resulted in a real life project starting the following semester.

TABLE IV.
COMPETENCIES ACQUIRED IN STUDENTS’ OWN WORDS

Social Competencies	Specialised Competencies
*To handle interdisciplinary communication and work-processes.	*Didactical Methods (including ePortfolio).
*Cooperative Teamwork Culture.	*Media-technical Competencies (including handling of different Software).
Motivation of Communities,	*Competencies in Copyright.
*Conscious detection and handling of group dynamic processes.	Competence to design Blended Learning Scenarios.
*Gender sensibility.	Knowledge of eTutor Profile.

* The asterisk indicates which competencies have been described by all students. Only competencies named by at least a quarter of the students are included.

In spite of the novelty of the method and the perceived additional workload, acceptance of the ePortfolio work was very high throughout the whole course. Even more, in the students’ feedback ePortfolio and the creative writing technique *freewriting*, were reported to be new and useful reflective and didactical methods.

The acceptance indicated in the qualitative feedback is mirrored by the quantitative results. Most students outperformed the desired amount of writing, although the ePortfolio-work was only graded with respect to completion, not with respect to quantity or quality of content. Nearly all students (90%; n=10) completed each single ePortfolio task; only one student was missing the last task. The whole ePortfolio process included 10 different tasks, each consisting of several questions with a declared required textual amount of between 300 to 1000 characters, depending on the task-question. The total workload of ePortfolio expected was about 6.500 characters. This amount was highly exceeded by the students’ average text-production of 14.361 characters. The minimal amount was 7.522 characters, the maximal amount 20.391 characters. Furthermore a one-page competence-profile and the development of an eTutor-project design were demanded at the end of the course and have been submitted by all students but one (90%).

Additionally to this doubled textual workload, students made extensive use of the possibility to read and comment their colleagues’ ePortfolio texts, and all students generally permitted the other students and teachers of the seminar to read their texts. The offer by the teacher in charge of the ePortfolio to comment the ePortfolio texts

occasionally was highly adored by the students, claiming a feedback for each written ePortfolio text. This indicates that ePortfolio was actually seen as much more than compulsory text work, it was embraced as a communicative and reflective process. Because the ePortfolio tool ELGG enabled only the author of the text to read comments on his or her writing, students transferred further communication processes to other functionalities of the Learning Management System used in the overall blended learning scenario of the seminar.

The tool employed, elgg, was not greeted with enthusiasm, but overall it was readily accepted. Criticism and suggestions were connected with the wish for more technical possibilities for communication and exchange, as well as the wish to present their ePortfolio to a broader public audience (the implementation of ELGG used was not publicly available). Another student demand was the possibility of easy import and export of ePortfolio elements, and the wish for more possibilities to design the pages and edit texts. Although the low complexity of ELGG was already demanding some media competencies by the students, we feel a more complex ePortfolio tool, presenting the acquired functions could be considered for this Media Competencies Seminar without threatening the grade of student acceptance.

IV. CONCLUSIONS

In this paper we introduced the first draft of the University of Vienna ePortfolio framework, which considers different dimensions of the many notions of ePortfolio from the point of view of different stakeholders in order to provide orientation and a guideline. With a view to the paradigm change in pedagogy towards seeing learners as active producers of knowledge, we proposed to take the presentation dimension of ePortfolio into consideration as a potential focal point for a community and to invite students to participate in the university’s knowledge processes.

The feedback to the use of ePortfolio in the case study and results of the whole *Media Competencies Seminar* were overwhelmingly positive. The integration of ePortfolio into the structure of the Media Competencies Seminar has fulfilled the expectations: The initial personal contextualisation of the module content and the encouragement to take a personal stance motivated students to adopt an active learning attitude. By employing creative writing techniques, the students felt free to start up a communicative reflection process which was referred to as exceptional experience. Embedding personal reflection in the communicative processes of the group was perceived as positive and stimulating. An additional deep integration of new and existing competencies was fostered through the task to develop real life scenarios.

The case presented here has shown that ePortfolio can be deeply implemented into existing curricular structures, readily be accepted by students, and employed as an instrument for building as well as analysing new competencies, suggesting a strong link to quality development of study programmes.

In order to realize the full potential we see in ePortfolio, the software and its interfaces to other university systems will be a major issue. The software-tool currently used comes with the benefit of being rather simple, demanding

a low degree of media competencies. However, on the long run it is not satisfying as this simplicity comes with a lack of several functionalities demanded by the users.

Nevertheless, at the Faculty of Catholic Theology and the Faculty of Social Sciences pilot cases are currently being developed, other faculties have expressed their interest in ePortfolio. Qualification and support offered by the Centre for Teaching and Learning is being adapted to the rising demand: The first ePortfolio implementation workshop for tutors will take place in March 2008.

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REFERENCES

- [1] University of Vienna, Development plan "Universität Wien 2010", <http://www.univie.ac.at/rektorenteam/ug2002/entwicklungsplan.html>, 2006. Accessed September 15, 2007.
- [2] W. Meeus, P. van Petegem, L. van Looy, "Portfolio in higher education: time for a clarifactory framework," *International Journal of Teaching and Learning in Higher Education*, vol 17, pp 127-135, no.2, 2006.
- [3] H.C. Barrett, "Researching electronic lportfolios and learner engagement," <http://www.electronicportfolios.com/reflect/whitepaper.pdf>, 2005. Accessed March 20, 2007.
- [4] H. Beetham. "E-Portfolios in post-16 learning in the UK: developments, issues and opportunities," A report prepared for the JISC eLearning and pedagogy strand of the JISC eLearning programme, http://www.jisc.ac.uk/uploaded_documents/eportfolio_ped.doc, 2004. Accessed March 20, 2007.
- [5] J. Biggs, *Teaching for Quality Learning at University: What the Student Does*. Open University Press, 1999.
- [6] P. Elbow, *Writing with Power: Techniques for Mastering the Writing Process*. New York, Oxford University Press, 1981.

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