
BOLOGNA WITHIN THE CO-CURRICULAR STUDY PROGRAM „PROBLEM-SOLVING COMPETENCIES” - ABSTRACT

Thomas Sporer, Tobias Jenert, Gabi Reinmann (University of Augsburg)

Background

The term Web 2.0 describes a new understanding and utilization of the Web as a medium for social networks and communities. It represents a technology-induced movement which can produce change in the conception and practice of higher education. Its participatory nature promises a resourceful concretization of constructivist learning concepts and implements them through the use of ICT. Thus we consider Web 2.0 an important guiding idea indicating the challenge to learn and construct knowledge in a self-organized manner. This view of learning differs from other approaches as it highlights heterogeneity and favours an internal locus of control resulting in a high degree of autonomy for the learner.

Bologna refers to a process that aims at building a homogenous European Higher Education Area and strongly changes the landscape of our universities. This process requires accreditation and certification of various programs and institutions in order to offer comparability and transparency. In contrast to Web 2.0, it does not primarily refer to the level of the individual learner, but to the level of the university as an institution. Homogeneity in terms of comparability requires methods to evaluate the competencies that students acquire and results in a focus on the assessment of learning outcomes. Thus, striving for comparability via educational quality standards, Bologna is an important force in reforming the organization of higher education that adopts an external locus of control.

At conferences and meetings one can distinguish these two trends and might even argue that there is no connection between them. But the actual experience of students and teachers who want to meet the demands of both these trends differs from these opinions. Apparently certain requirements and expectations are inconsistent with each other. Resulting from this tension between the affordances of Web 2.0 and the constraints of Bologna, we face the challenge to resolve potential conflicts concerning the design of assessment, curriculae and incentives: Because if both trends influence our educational practices and are important for students and teachers alike, the important question is how to bridge the gap between them. At the University of Augsburg we try to couple the inherent structures behind Bologna and Web 2.0 with-out breaking the logic of both systems (see Reinmann, Sporer & Vohle, 2007).

Objectives

This proposal shows how we use E-Portfolios as an assessment instrument in the co-curricular study program “Problem Solving Competencies” (see Sporer, Reinmann, Jenert & Hofhues, 2007). Since assessment marks play an important role in attaining future job opportunities, students strive for certification and good grades. This is why they expect to learn and be taught in a manner that suits the prevalent forms of assessment. Educational practices like project learning and reflective thinking may thus be high educational goals, but problem-solving skills and social engagement are hardly assessed by typical forms of standardized performance tests.

The problem for the acceptance of new learning scenarios like project-based learning communities, in our view, is that how we assess strongly influences how students behave (Biggs, 2006). To overcome structural resistance due to inapt assessment methods, we try to foster the engagement of students in innovative educational approaches via E-Portfolios. Thus the aim of our current work is to develop an infrastructure for the integration of E-Portfolios as an assessment method into higher education that leverages the benefits of Bologna and Web 2.0: On the one hand assessment of competencies is a necessary element of external evaluation and quality management along with Bologna (assessment of

learning). Reflection and peer reviews as self-assessment can be integrated in the philosophy of Web 2.0 on the other hand (assessment *for* learning).

Results

So far we have set up a platform that functions as a portfolio tool and implemented it in the program “Problem Solving Competencies” (see Sporer, Jenert, Strehl & Noack, 2007). Currently we are working on the development of a theoretical framework of competencies underlying the program and refining the structure of the portfolio tool. Although E-Portfolios are a useful multifunctional assessment method which can mediate between assessment of learning and assessment for learning, both functions are difficult to be realized at once. To combine assessment of learning with the assessment for learning, we thus designed a three-staged portfolio process which is based on different portfolio types (see Barrett & Wilkerson, 2004):

1.) *Working-Portfolio*. With the Working-Portfolio students collect all materializations of knowledge (even very small artefacts) unfolding during the learning process. In this phase they document their working experiences within their learning projects which is a form of reflection-in-action (Schön, 1987). Weblogs and podcasts are used to reflect experiences in a simple manner that doesn't require systematic arrangement. In addition the learner can comment on learning “products” such as text documents, drawings and photographs. This “private space” has no intention of beginning a dialogue with others and therefore reduces the timidity to articulate oneself (perspective of 1st person).

2.) *Story-Portfolio*. With the Story-Portfolio students transform personal experiences into shared knowledge within a project group and arrange the collected materializations of knowledge. In this stage of the portfolio process a personal learning story is constructed presenting a form of reflection-on-action (Schön, 1987). This contextual embedding forces the learner to reflect more intensively and to structure the individual learning process along the meaningful dimensions of a coherent story. The social software system underlying the portfolio tool enables reciprocal commenting of the learning stories. This interconnection of the contents of the learners' stories builds a “shared space”. The stories thus make personal learning experiences understandable for others and initiate dialogue with a real or fictive counterpart (perspective of 2nd person).

3.) *Test-Portfolio*. The Test-Portfolio consists of the collected materializations of knowledge which the students choose to be used as indicators for achieving defined learning standards. Building on the previously described portfolio phases, this is not a form of reflection-on-action, but rather a form of reflection-on-reflection (Schön, 1987). Thus students make reflective decisions about what artefacts should be subject to the evaluation through a third person. In this context you leave the private as well as the shared space and finally enter a “public space” that gives a transparent account of your learning process and the resulting learning outcomes (perspective of 3rd person).

Conclusion

During the implementation of the portfolio platform in the program “Problem Solving Competencies” we learned that there are several barriers for the successful integration of new assessment methods in the every day life of students. Although students generally long for more practical engagements in higher education, problems concerning the use of E-Portfolios as an instrument for the reflection of learning experiences arise. On the one hand these barriers seem to stem from a lack in student's skills and motivation for reflective thinking. On the other hand there are still some organizational structures/conditions that highly impact students' acceptance of innovative learning and teaching approaches. Both barriers mutually influence each other:

a.) *Capabilities for reflection*. To reflect on their own experiences seems to be quite difficult for students. For many students, learning in educational institutions still is synonymous with memorizing pre-digested content in traditional classrooms. Hence they tend to focus on the instructed material rather than build the metacognitive capabilities necessary for reflecting one's own experience. Because the “cash value” of reflective thinking is not immediately understood by them, this difficulty

is reinforced unless reflective exercises are directly imparted into assessment strategies. Adding to these problems of inexplicit profitability and the added workload for students, motivation for reflective practices can be impaired by usability problems of the portfolio software. Summarizing our experiences with the deployment of E-Portfolios we notice that students use the portfolio system primarily as a tool for knowledge management within their project groups. If the benefit of using the portfolios is clear to them (for example to document the results of a group meeting), students find it much more easy to post articles in their weblogs.

b.) *Organizational structure*. Another barrier for the implementation of E-Portfolios is the curricular framework of the Bologna reform. Due to the modularization and its inherent logic of the ECTS-system it can become difficult to build coherent units of learning contents that enable students to engage in project groups that usually go beyond the standard unit of one course in one single semester. Busy time schedules for students further complicate the matter. Unless such basic conditions are adjusted the implementation of assessment methods like E-Portfolios remains problematic. As long as portfolio work is not institutionalized into the formal curriculum, the value of portfolios is not fully grasped by all students. Especially students with high levels of motivation for achievement may have to face the decision whether they should invest time and energy in portfolio work with a blurry outcome or if they should fulfil the calculable standards of traditional assessment measures.

To fully exploit the potentials of the trends outlined above for improving higher education, we argue for an increased use of E-Portfolios. The sole implementation of technology, however, does not automatically result in improved learning and teaching conditions. Didactical and institutional frameworks also have to be altered to meet the introduction of new technologies.

References

1. Barrett, H.C.; Wilkerson, J. (2004). *Conflicting Paradigms In Electronic Portfolio Ap-Proaches*. Available Online at <http://electronicportfolios.org/systems/paradigms.html>, [Access: 31.8.2007].
2. Reinmann, G.; Sporer, T.; Vohle, F. (2007). *Bologna und Web 2.0: Wie Zusammenbringen, Was Nicht Zusammenpasst?* In: R. Keil; M. Kerres; R. Schulmeister (hrsg.). *Euniversity - Update Bologna*. Education Quality Forum. Bd. 3., s. 263-278. Münster: Waxmann.
3. Schön, D. A. (1987). *Educating the Reflective Practitioner. Toward a New Design for Teaching and Learning*. San Francisco: Jossey-Bass.
4. Sporer T.; Jenert, T.; Strehl, B.; Noack P. (2007). *Einsatz von e-Portfolios zur Förderung von Studentischen Lerngemeinschaften*. In: C. Rensing; G. Rößling (hrsg.). *Proceedings der Pre-Conference Workshops der 5. e-Learning Fachtagung Informatik Delfi 2007*, s. 19-26. Berlin: Logos.
5. Sporer, T.; Reinmann, G.; Jenert, T.; Hofhues, S. (2007). *Begleitstudium Problemlösekompetenz (Version 2.0): Infrastruktur für Studentische Projekte an Hochschulen*. In: M. Merkt; K. Mayrberger; R. Schulmeister; A. Sommer; I.V.D. Berk (hrsg.). *Studieren neu Erfinden – Hochschule neu Denken*, s. 85-94. Münster: Waxmann.

Author(s)

M.A. Thomas Sporer,

B.A. Tobias Jenert Prof.

Dr. Gabi Reinmann

Institute for Media and Educational Technology (University of Augsburg)

Universitätsstraße 10, D-86135 Augsburg

Email: {surname.lastname}@phil.uni-augsburg.de