

Future Learning Strategy and ePortfolios in Education

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Abstract—The rapid change of the information and knowledge Society does not stop at education: communication, teaching and learning are changing due to digital media. Therefore at Austrian schools a “Future Learning”- strategy was started in October 2007, where new forms of learning are underlined by new media and social software. This strategy will be presented. An important part of the strategy is the introduction of electronic Portfolios for students. Portfolios could be powerful tools to realize individualisation in formal education. There are two main types, the process portfolio for learning, working and reflection and the application portfolio for assessment purposes and job application. It is now possible to collect formal and informal competences and skills-oriented knowledge for the later professional career.

Index Term—Collaborative learning, eLearning strategy, ePortfolio, education policies and strategies.

I. INTRODUCTION

In Austria there are several eLearning projects at primary and secondary schools, in higher and further education and in workplaces of the civil service and industry. However, though successful eLearning pilot projects have been implemented, our society is still far from efficiently exploiting the full potential of technology enhanced learning. Tools like eLearning and ePortfolio are not commonplace yet. Efficiency and sustainability of all these efforts have to be optimized yet. It is a general consensus that Europe is far from having achieved the targets of its “Lisbon Strategy” (Ref. [1]), which aims at realising the “knowledge society”. The European Commission underlines that the creation and dissemination of knowledge throughout the Union must be reinforced. Transforming the way we teach and learn requires a collective effort engaging all players fostering education and lifelong learning.

II. THE FUTUR(E)LEARNING STRATEGY

The internet loses its pure “publication” function because of newly developed portals and is getting interactive. The web is changing within a very short period of time not only in a technical way but also in all areas of application and especially in using the net. With the next steps of “social software” and “Web 2.0” the internet is changing to a distributed net. In contrast to other mass media it is very easy in a “web by users for users” not only to be recipient but also appear as sender and author of messages to an infinite amount of users.

In using the ideas mentioned above a number of targets could be set. It is very important that these quantified objectives get indicators to measure the success of this initiative. The discussion at Austrian Schools about quality has led to the evaluation culture of visualising activities taken. This will happen in “Futur(e)Learning” as well Ref. [2]. All of the following considerations assume that all schools will be supported in structure and networks to work together (this has been happening since 2002 in two projects: eLSA – “eLearning in daily school life” and eLC - “eLearning Cluster”). In an “ePartnership - Project” starting autumn 2007 today’s 120 secondary schools will become more than 220 locations which will work according to the objectives of the Futur(e)Learning strategy.

Futur(e)Learning deals with new forms of learning and learning arrangements which move into another direction, away from a classical frontal education situations. By using non directive learning arrangement it should be possible to gain results from group-, partner, or single works. Those results are then structured to build a new learning environment.

The MIT professor Seymour Papert (Ref. [3]) got acquainted with a concept called “mindstorms” approximately 15 years ago: children have to prepare their working environment themselves by using appropriate instruments so that they have a chance to develop a “creative thinking environment”. According to their natural talent the youth is in need of a “communication device” which supports them in finding own ideas, to realise their ideas and to learn important knowledge and behaviour patterns. Those tools have to be available for personal use – preferably in one’s ownership and be always with them (because they are very small in volume).

Today most people have a “communication machine”, the mobile telephone (or cellphone). Mobile phones are getting more and more application areas – a connection to the internet would be a great advantage. It makes no difference which tool you are using a notebook PC, a “classmate” - Subnotebook, a Communicator, a PDA or a webphone, the connection to the internet via an UMTS connection – makes it a “communication machine”! “Web 2.0 goes mobile” is the key word! This learning engine has to be very easy to use.

“FutureLearning” intends to open up a connection for all pupils, teachers, working students and students to a web driven communication and learning tool (this could be defined as Mobile Computing Interface) and to adjust

the learning possibilities to reasonable learning and school environment.

III. WHY E-PORTFOLIO PROJECTS?

ePortfolios can capture the idea of lifelong learning, support individuals moving along episodes of school, study, training and employment. ePortfolios support the transfer of competencies from school or campus to the world of work. The educational System has also to prepare the pupils and students for an active role on the modern labour market, which requires a dynamic evaluation of competencies in the sense of lifelong learning. Due to the inherent portability of portfolios the smooth transfer of verifiable information about learning, evaluation and competences between the levels of education is ensured.

Portfolios are products of self organisation to support individual and collaborative learning processes at schools and can deliver first experiences of student achievement maps on the way of lifelong learning. Portfolios can be seen to balance rather strict school quality management issues like education standards with prototypic tasks and test items. Both elements, strict and open approaches, must be implemented in a proper mixture to shape schools of tomorrow.

Portfolios are personal reflection instruments to enrich traditional school work and university lectures. For the students it is now possible to collect know-how and skills-oriented knowledge for their later professional careers. This approach also offers the chance for integrating informal und non-formal acquired knowledge and know-how in this personal competence tool. Portfolios can be used as personal learning instrument for students, as new assessment instrument at vocational schools and to prove competences and qualifications in the transition to the labour market as well (see figure 1).

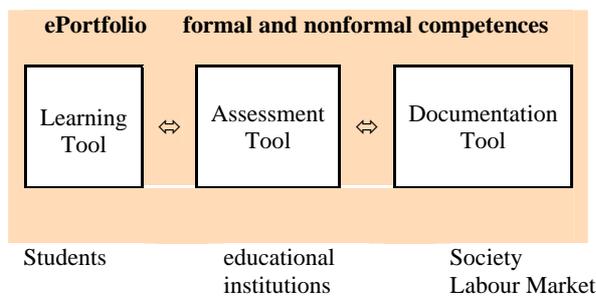


Figure 1. Functions of portfolios and corresponding stakeholders

Based on experiences of several years of practice ePortfolios seem to successfully demonstrate the potential of serving individuals as well as organisations in a comprehensive way. According to the Chief Executive of the European Institute for eLearning (EifEL), Serge Ravet, “ePortfolios are now a central element in some national learning policies” (Ref.[4]). So it is safe to conclude that schools, higher education as well as enterprises are well advised to engage in the potentials of ePortfolios.

IV. E-PORTFOLIOS IN AUSTRIAN SCHOOLS AND ADULT EDUCATION

Working portfolios have some tradition in teacher-training in Austria: For ten years “academy courses” in special psychological or pedagogical subjects have been held at the “Pädagogischen Hochschulen” in different provinces. Topics are supervision, professional upgrade in vocational education, informatics, e-learning and e-teaching and others. The successful completion of the one or two years long courses depend on a working portfolio (a examination would not be adequate for teachers work), including a teaching diary, a documentation of lesson modules and reports on personal reflection and an evaluation of teaching and learning processes with different instruments (questionnaires and others). The experience is positive, the models are well established in in-service teacher training in Austria.

Introduced by workshop conferences of “Salzburg Research” form 2005 to 2007 a transformation of concepts is being discussed in a twofold way:

- The portfolio concept should be applied to document the student learning and working progress. There are some open learning forms in secondary education and the students have to manage project work during the end of secondary education (like “Fachbereichsarbeit”, Engineering projects in teams, entrepreneurship experiences in business schools, tourism concepts and others). This progress at secondary level is also manifested in a change of the last exam regulations (“Reife- und Diplomprüfung” in the Austrian VET-sector).
- The portfolio shall become an electronically hosted portfolio. Students have the chance to collect different solutions, oral and visual presentations and seminar papers any time and also at home. The presentation of your own portfolio can be arranged, if desirable and possible (maybe on excursions to other countries, in laboratories and during external visits of neighbour schools or during internships). The working portfolios will transfered into a presentation portfolios of school graduates and can be extended during university studies and practical work in companies.

In practice, some secondary schools of the e-learning Cluster Austria (eLC-Austria) decided to adapt the five-to-five model of Helen Barrett (Ref. [5]) to introduce the ePortfolio idea for their students. The portfolio development starts with a structure analysis, afterwards a working portfolio is applied. The content is continuously reflected by students and teachers and a connection to other sources and digital working is made till at the end of secondary education a presentation portfolio has been established.

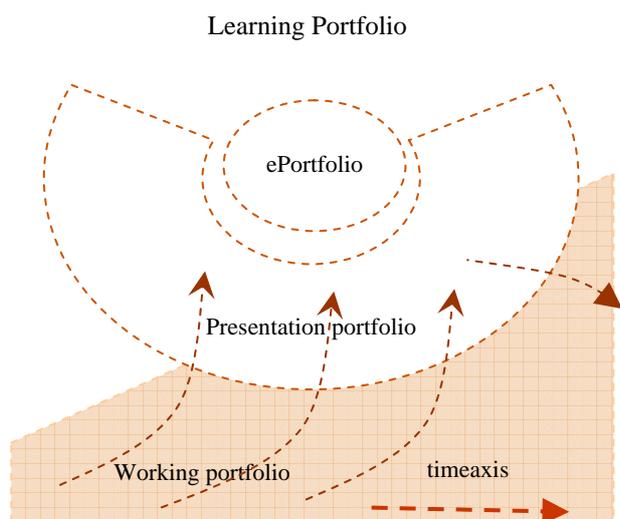


Figure 2. Development of learning portfolios

There is a discussion with school inspectors and principals, if parts of the portfolio should be reviewed, for instance with the help of digital signature procedures.

A software environment can help to develop portfolio structures easily. Now, within the eLC-project of the about 100 participating schools, software tests are made. Up to now, no portfolio software fulfils all conditions, continuing function analysis must be continued. After first practical experiences with fifteen upper secondary schools in 2007 it can be assumed, that without nationwide common service structures portfolio approaches are too different and cannot be compared. So work has to be done to create a technical platform, designed commonly, but hosted separately. Simple schemes like wiki-lists or learning platform courses are under discussion as well as more complex structures like learn management system (LMS) – portfolio environments with special export functions. Benefits of the web 2.0 transformation like social software or learning community tools are tested to establish a useful culture also for university demand. The portfolio module has been realized within the well known Moodle Platform with a special extension named “Exabis portfolio” (www.moodlekurse.org).

V. CHANGING ROLES AND AUTONOMY OF TEACHERS

Portfolios are instruments for reflective and self-organized learning. Learning should be organized in groups using the classroom setting. For these common processes learning management systems (LMS) are the best tools for co-operative and collaborative learning. The LMS offer structural support to work with learning projects and case studies, enabling instances for personal or partner reflection and peer feedback.

The expertise and the evaluation should not only be in the hands of teachers, but the students themselves can give support to each other, before involving the teachers. In LMS - groups it is common that students read contributions of others, especially if they are encouraged by teachers to do so. Methodically the students contribute actively to their role in knowledge-“acquisition” and the teachers are in such a setting not only in the role of

experts, but coaches in a constructivism manner. The coaching role means not to pretend all targets but to support learners to reach the self directed targets in different ways.

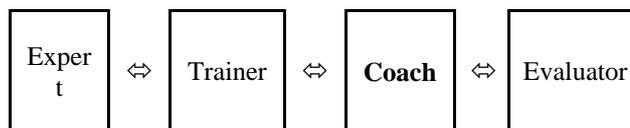


Figure 3. Role model of teachers

The change from teaching to coaching requires a lot of sensibility and evaluation of personal behaviour. It is important, that the coach role even more so the expert and trainer role is contrary to the evaluation role. So, coaching should be clearly separated in space and time from evaluation and assessment. In this way, the portfolio could to be the instrument for coordinating different learning task and learning projects in different roles.

VI. ASSESSMENT, TEAMWORK AND SOCIAL CONTROL

Good experiences are documented to handle over the organisation of learning process to the students, if self directed learning is intended (and appropriate). A classroom oriented “knowledge management” with support in every subject should be established (Ref. [6]). Occurring problems and mistakes will be treated during the lessons and learning experiences will be reflected and results will be presented. On the platforms themselves, fault tolerant places and spaces should exist, which will be administrated by a critical learning community. Evaluation corresponds to the following pattern:

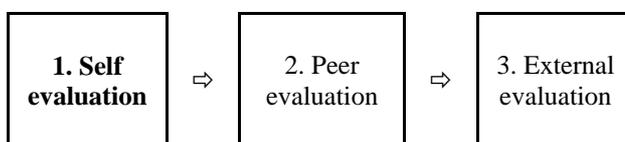


Figure 4. Evaluation of learners

To optimise this learning process social effects and the teamwork should be explicitly enforced. “Copying” others work is welcome. Teamwork and community learning is a higher motivation for learning as learning as a single person (Ref. [7]). With such community learning styles the possibilities at judging somebody is expanded. The LMS combined with the ePortfolio is a good backbone to support different kinds of peer evaluation and coaching processes.

VII. FURTHER PROCEEDINGS

The main challenge is now to find criteria and indicators for the implementation of eportfolios at schools, universities, in adult education and even for personnel managers for the labour market. Portfolios for pupils, students and any learners are only useful, if there is a common framework of content demands and technical environments from school to university and even to lifelong learning. Educational institutions, enterprises and labour market support facilities should be work together and have to find a common language.

From the point of view of school development must be a balance between highly standardized education at targets (like PISA-oriented tasks and subject oriented education

standards) and open “learning result collections” like portfolios. The individual portfolio will be a proper instrument for lifelong learning. The foundation must be clarified at school.

In future ePortfolios could manage personal learning as the learning of organisations as well. One of the opportunities (and challenges) would be to create a “living system” of personal, team and organisational portfolios which mesh to each other and could also be seen for their own (cascading portfolio). In case of an educational institution it could be a real-time collection of student-, project- and teachers portfolios, which are integrated in the portfolio of the institution. Also in this case, personal rights on the several portfolio would be considered, only dedicated published items would be shown (peak of the iceberg). This approach offers a powerful combination of the personal and institution knowledge management.

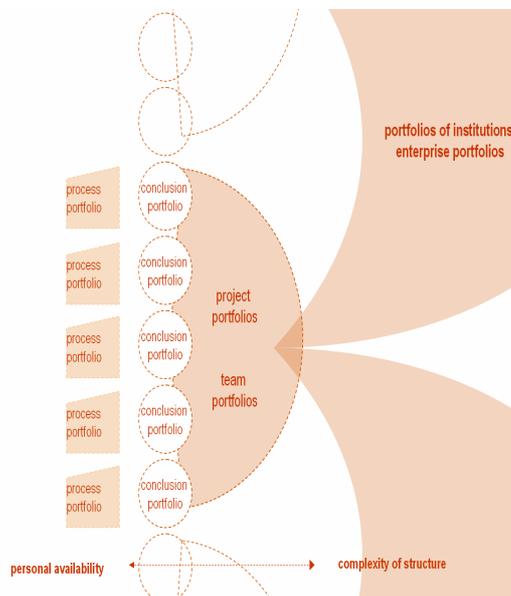


Figure 5. Cascading portfolios

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