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Putting the Patient at The Heart of Physiotherapy Student Education: Supporting Development and Life Long Learning Using E-Portfolios

Claire Hamshire, Deborah O'Connor, Manchester Metropolitan University.

Introduction

There are substantial changes taking place within healthcare delivery in the United Kingdom. These have a significant impact upon student education, both in academic delivery and within the practice environment. The recent White Paper (Department of Health, 2010) suggests that care is changing and the primary focus is on patient choice and improving the cost efficiency of services. Thus, healthcare practitioners are challenged with maintaining a high quality of patient care whilst making productivity savings. Innovative practice is essential to ensure that patients' needs are met whilst meeting the requirements of the life long learning agenda. Using digital technologies to support educational processes is one method of promoting timely, effective, patient centred care.

Underpinning workforce development and ultimately improving patient care, is the process of continuing professional development (CPD). Healthcare professionals therefore have a personal and professional responsibility to ensure that the patient is at the forefront of care and demonstrate their own skills in managing that care. To support this process, it is fundamental that a variety of methods of facilitating CPD are embedded within undergraduate programmes so that students can begin the career-long process of professional development.

The advent of Web 2.0 technologies has provided a number of new opportunities for restructuring of healthcare services as well as offering virtual support to students (Gleaves, 2007). This paper will focus on the concept of using web logs ('blogs'), within an eportfolio, as a method of providing students with a virtual community of practice to enhance their professional development. We also consider the underpinning evidence base for the reflective process as a fundamental element of CPD and the importance of fostering a reflective culture in order to ensure high quality patient centred care (Cross et al, 2006).

Background

Healthcare professionals are autonomous practitioners, taking responsibility for their own practice and post-qualification education and development. The implication of this autonomy is the expectation that practitioners constantly update themselves and engage in CPD activities. CPD post registration is the longest and arguably the most important phase of professional education. The underlying purpose of CPD is to enhance the quality of patient care (RCN, 2007) and there is a demonstrable link between the application of CPD to practice and high quality service delivery (HPC, 2005; NMC, 2006). It is therefore imperative that all students engage actively in a constant process of learning and development, both formal and informal, from the beginning of their undergraduate programme.

"Continuing professional development for healthcare professionals is an important strategic instrument for improving health. The Department of Health identifies CPD as a way of maintaining standards of care; improving the health of the nation; and recruiting, motivating and retaining high quality staff." (Brown et al, 2002)

CPD includes the identification of learning objectives, with the emphasis being firmly on reflection and evaluation. Reflection is a complex skill; one that cannot be taught and one that develops with experience over time. It is also a deeply personal process that requires the individual to scrutinise, consider and analyse on a journey of continual discovery, whilst ensuring that learning takes place and that action plans are formulated. It is for this reason that healthcare programmes have attempted to embed this fundamental skill within curricula; to expose students to this complex process with the ultimate goal of developing skilled, reflective practitioners who can undertake CPD. It is widely acknowledged that reflection is a tool that can help develop skills in insight and self-assessment; vital for improving patient outcomes (Cross et al, 2006). Students that engage in CPD and reflection should therefore be more prepared to enter the workforce and provide quality patient care.

The Reflective Process

Much of the evidence base that supports reflection and reflective writing sits within the pedagogical

theories of experiential learning. Fowler (2008) reports the origins of experiential learning and synthesises the literature to explain the concept as a process of learning from critically reflecting on an experience. This supports the experiential learning cycle as described by Kolb (1984). Schon (1987) describes reflection in a more simplistic manner and discusses the concept of 'reflection in action', meaning reflection during an activity, and 'reflection on action'; a retrospective consideration of the learning that has taken place as well as planning for future learning.

King (2002) discusses the need for students to spend time contemplating their actions and learn through the process of reflection. He advocates that from a pedagogical perspective, reflection is the highest level of deep learning and therefore is at the top of the hierarchy of Bloom's taxonomy, and his study draws on the earlier work (Dewey, 1933; Kolb, 1984; Schon, 1987); when examining the cycles of reflection and learning processes that take place. The conclusions of this higher education based study support the need for time, reinforcement and advocate the need for a culture of reflection to be embedded within a curriculum.

There have been many papers that highlight journal writing as a reflective tool. There are a wide range of benefits outlined within the literature; self discipline, improved higher order thinking, deeper levels of learning, increased knowledge base and increased understanding of self and others (Wilson et al, 1995; Beveridge 1997; Williams et al, 2002). Boud (2001:13) discusses journal writing as a forum for recording experiences and making sense of these through the use of different lenses. It is

suggested that through using a 'lens of learning,' an individual can consider their experiences, revisit and reflect on these in order to develop actions for the future.

Williams et al (2002) used journal writing as a tool to support student's reflective writing whilst on practice placement. The authors argued that using a journal can facilitate transitions between the academic institution and the practice placement setting and therefore allow students to make links between previously acquired knowledge and new placement learning experiences in order to synthesise their understanding and deepen their learning. The transition between learning in a supportive academic environment and a busy healthcare practice environment can often be a difficult one and students can find this process very challenging. Furthermore, the practice environment can often feel quite isolated and far removed from the student's natural peer group, and this needs to be managed in order to support the student in their journey to providing patient centred care.

E-portfolios and blogs

To promote the process of CPD, learners need a tool that allows them to collect and integrate evidence. Traditionally, in healthcare education, this has been undertaken via paper based portfolio systems (van Tartwijk, 2009) that acted as a repository of evidence of achievement (Cross et al, 2006). Over time, practitioners built up a body of evidence that developed into a collection of resources that could be used to facilitate learning and stimulate reflective practice. These portfolios were used, in some instances, for professional accreditation and therefore to demonstrate evidence of CPD. More recently, evidence of learning is developed in a variety of digital media (e.g. video, audio files and word documents) therefore an alternative solution was required. E-portfolios provide an electronic, structured environment that can be used as a digital repository, enabling learners to evidence CPD utilising structured tools. One of these tools is a blog.

Blogs have become an increasingly popular resource over the last ten years. Support for the use of blogs is well embedded within educational literature. Hernandez-Ramos (2004) clearly demonstrates that blogging increases student awareness of technology and supports learning. This study identified the increased reflective nature of blogging whilst engaging the pedagogical principles of constructivism in developing the student's ability to create knowledge.

The more recent studies using web based journals or 'blogs' are also very encouraging in that they highlight the benefits of peer support and how easily this can be done with a blog (Chretien et al,

2008; Ladyshevsky, 2008). Due to the diverse nature of practice education, a support structure is vital to ensure students feel able to engage in learning and gain additional learning opportunities through sharing experiences. It is suggested that blogs have the potential to support the development of specialised professional learning communities or communities of practice; a mechanism that aligns itself well to healthcare practice (Andersen and Matkins, 2011; Yang, 2009).

The challenge of providing a safe and secure repository for evidence and encouraging reflection within

curricula remains a difficult one and blogs are one method that can be used to facilitate reflection and CPD. This study was driven by concern about Physiotherapy students' engagement with reflective writing and CPD whilst undertaking practice placement. The specific aim of the study was to explore physiotherapy students' perspectives of using blogs to identify if they could be used to support CPD and reflection during practice placement.

Methods

The purpose of the study was to explore the use of blogs as a reflective tool, using data collection methods that focused on students' learning experiences. Given the purpose of the study, it was essential to obtain the students' own expressions of their learning experiences. To facilitate this, we conducted a sequential exploratory, mixed methods evaluation using both intra and inter-method mixing. This explored the students' opinions and beliefs, focusing on their experiences of using the blogs to facilitate their reflection and provide patient centred care.

A purposeful sample of five students from the third year of the BSc Physiotherapy programme took part in the study. The students kept reflective blogs of their own experiences and commented on each others' posts to encourage depth of reflection. Comments were also added by a member of the academic team (tutor). Participants were encouraged to blog at least once a week for the five week duration of the placement as well as after the placement had ended to evaluate their clinical learning experiences.

To explore the students' learning experiences, a thematic analysis of the student blog comments using a framework approach (Ritchie and Spencer, 1994) was undertaken. In addition, an online questionnaire that included both open and closed items was used to evaluate the students' perceptions and experiences of blogging as well as the accessibility of the tool.

Ethical considerations

Ethical approval was not required for this study as it formed part of routine programme evaluation procedures.

Results

1) *Thematic analysis of blog postings*

The students were not obliged to follow academic writing guidelines for their blog postings and therefore their comments were written in an informal style that recorded experiences without following a set structure or guidance. The data set consisted of three different types of postings; student's reflective comments on their learning experiences, student-to-student comments written as peer support and tutor comments. Each of the data sets was analysed individually using a thematic framework.

i) Student reflective comments

Five themes were identified within the student comments:

- Descriptions of practice
- Reflections on self-confidence levels throughout the placement
- The challenges of adapting to a new environment (transition to a new place and fitting into a team)
- Reflections on the academic assessment of the placement
- Posing questions to the group/requests for help

Overall, the blog postings detailed the students' learning journeys throughout their placements. The students gave detailed descriptions of their clinical practice and used the blogs on occasions to pose patient centred questions and dilemmas to the peer group. This strategy was particularly used when the students were deliberating about challenging situations and new experiences. The students also discussed at length their levels of confidence in relation to their knowledge, skills and abilities and

how this varied throughout the course of their placement. Towards the end of each placement, discussion arose around the forthcoming written reflective assignment and the blog was used as a discussion board to address questions relating to the assessment.

ii) Student-to-students peer support comments

Three themes merged from the analysis of the peer support comments:

- Support and reassurance
- Sharing issues
- Questioning

All of the students engaged in the process of reading each others' blogs and posting comments and feedback; although some were more active than others. These peer comments offered both support and reassurance for those questioning their abilities and reflecting on clinical dilemmas. The common themes were of shared experiences and a sense of relief of finding others facing similar problems. Overall, the peer comments offered advice and gave reassurance and feedback about particular clinical scenarios. All entries were positive in nature which was in keeping with the objectives of the study. The comments developed a more inquisitive style as time progressed, possibly modelled on the tutor comments that the peers had been observing whilst posting their own feedback. This led to more detailed discussions and as a consequence, greater depth and scope was evident within each reflective account. All the students felt that the blogging had contributed to the development of their clinical practice and wanted to continue to use the blogs after the study to aid their reflections on patient care.

iii) Tutor comments

There were three themes within the tutor comments:

- Questioning & prompting to enhance reflection
- Support and reassurance
- Information giving and signposting

The tutor's comments also offered support and reassurance; however the tone of these was very much inquisitorial and facilitative. There was a process of ongoing prompting in place; signposting the students to extend their thinking in order to enhance their reflection. The secondary role of the tutor was to model the types of comments and questions that could be posted by the students. The style and content of the student blog postings and comments evolved in response to the tutor feedback. The final element within the tutor comments was information giving and this was provided when the students needed an answer in order to move forwards with their discussions about particular topics.

2) Online questionnaire

The responses to the closed questions of the questionnaire demonstrated that the students had a generally positive perception of using the blog, with all students rating the blog either easy or very easy to use

The questionnaire comments were analysed using a thematic analysis based on the 'Framework' approach, as described by Ritchie and Spencer (1994). The initial familiarization stage and analysis identified both advantages and disadvantages of blogging. Four distinct advantages were revealed:

- Benefits of peer feedback
- Benefits of tutor feedback
- Benefits of peer support
- Enhanced reflection.

Sample comments are included in table 1 below:

Table 1: Sample student quotes – Advantages of blogging

Theme	Sample quotes
Benefits of peer feedback	<p>'You can ask advice from others and you can give your advice on patient care.'</p> <p>'Good to get people's feedback and input on questions.'</p> <p>'I have found it has aided me to keep in touch with peers and share experiences.'</p> <p>'I felt that they had very valuable things to input.'</p>
Benefits of tutor feedback	<p>'Very helpful. Lots of questions to ask that enriched the reflection on practice.'</p> <p>'It was good to get that feedback as it helped me think of my reflections on patient care from deeper angles and in more depth.'</p> <p>'This is exactly what I needed in order to develop my reflection. The support from the tutor has been great in order to point me in the right direction as far as my reflection and blog entries on patient care.'</p>
Benefits of being in a peer support group	<p>That we all go through similar clinical experiences.'</p> <p>'From looking at the other blogs everybody had the same trouble starting out with not reflecting deep enough, but as the study went on the quality of each blog improved.'</p> <p>' ... (realising that) many of us are having similar sorts of clinical experiences be it good or bad.'</p>
Enhanced reflection	<p>'Made me reflect more and think about what was actually happening with the patients on my placement.'</p> <p>'I feel that reflections happen naturally but by blogging I reflected deeper.'</p> <p>'It has also helped me to reflect deeper due to being able to update constantly and then receive feedback on my posts.'</p>

The participants were also asked to comment on any difficulties or limitations they had found with blogging. Three disadvantages were revealed:

- Blogging was initially time-consuming
- Participants felt self-conscious at first
- Beginning the process was difficult for some students. Sample quotes are included in table 2:

Table 2: Sample student quotes – Disadvantages of blogging

Theme	Sample quotes
Time	<p>'Time consuming.'</p> <p>'To begin with it felt a bit like a chore (like extra work), but only at the beginning.'</p>
Feeling self conscious	<p>'Talking about myself, my feelings and my experiences. At first I had feelings of being fairly self conscious but then I just learnt to do it anyway.'</p>
Getting started	<p>'Starting off each entry, once you start the information just flows, it is the initial sentence that's the difficulty.'</p>

Discussion

This study utilised a small sample size of five students over the course of one five-week placement and confidence to generalise from the study is therefore limited. However, despite this limitation, some important advantages of blog usage to support CPD have been identified. The results demonstrated that the students had positive experiences of using the blogs overall and enjoyed the interactive nature of sharing their blogs within the peer support group. Students also reported that blogging aided their transition process from being supported within the academic institution to working autonomously within the practice environment, as they developed confidence in their abilities.

A key finding from this study was that the blogs helped the students to recognise their learning needs and provided a stimulating forum to evaluate their practice learning. This is in accordance with previous studies (Beveridge, 1997; Williams et al, 2002; Levine et al, 2008). The participants also highlighted the increased depth and scope of their reflections as a benefit; leading to an increased confidence and stronger awareness of their clinical skills. Again, this is underpinned by a previous study that suggested that reflection on learning events within the clinical arena stimulates not only deeper reflective skills but a new level of clinical understanding (Williams et al, 2002).

The key factors that contributed to the students' positive experiences and perceptions were the informal nature of the tool, the easy accessibility of the online environment and the ongoing, timely support from peers. These findings are in accord with Ladyshevsky's study in 2008 that clearly demonstrated the success of peer support in developing students' learning. This study investigated the use of paper based journals to enhance peer support with physiotherapy students. The conclusions suggested that journal writing in any format had the advantage of enabling students to consider their clinical decision making more deeply, thus impacting on patient outcomes.

The thematic analysis of the blog posts also identified that as well as using the blogs to reflect, the students were using them as a forum to ask questions about clinical practice, and to seek reassurance and feedback about their actions and decision-making processes. The blogs provided valuable collaborative learning opportunities and professional socialization for the students involved whilst isolated on placement from their peers. Furthermore, using blogs embedded within the secure environment of an e-portfolio, avoided the issues raised in previous research relating to the potentially threatening environment of using public blogging sites (Hernandez-Ramos, 2004). The students also valued the academic support from the tutor via their blog posts. The tutor's comments aided the students' reflective processes and they felt well supported within the practice arena without the need for face-to face contact.

The students did highlight some disadvantages of blogging and these mainly related to the logistics of using a tool that was unfamiliar. It was also noted that some students felt overwhelmed by sharing their own personal reflections initially. However as the study progressed and the students became more familiar with both the tool and sharing personal comments this disadvantage diminished. Although the duration of the study was only five weeks, the participants quickly formed a trusting professional community, supporting the suggestions of previous authors that blogs have the potential to develop communities of practice (Andersen and Matkins, 2011; Yang, 2009).

Conclusions

This local study has offered some insight into Physiotherapy students' experiences and perceptions of blogging; although it is not possible to make conclusive claims about the use of blogs. All the students were positive about using blogging to enhance their reflection and valued the flexibility of access and convenience that it afforded them. The students stated that blogging provided a safe and informal environment to explore their reflections on current practice and specific incidences of patient care. They were positive about the feedback provided by both their peers and the tutor in aiding them to add depth and scope to their reflections. All participants indicated that they would advocate blogging as a medium for improving their reflections and felt they would continue to use blogging as a tool in their future career.

Whilst there is no simple formula for developing the reflective skills of a diverse student body, this study has identified that blogs within an e-portfolio can be used as one method to support students'

6 reflective practice. The results of the study suggest that students valued the opportunity to discuss and share experiences and can be facilitated to engage in the process of reflection when in a supportive peer group. Higher education curricula may benefit from utilising technology and peer support to further develop student's interest and engagement with this vital skill.

The findings suggest that the purpose of using the technology needs to be clearly defined and students need to be convinced of the advantages of making changes to their practice. A preparatory session should be conducted in order to familiarise the students with the technology and ground rules for engagement explained to set the expectations of the learners.

The blogs where a useful tool to enhance reflective skills and along with peer support, facilitated students to remain focused on enhancing their professional practice, ultimately impacting on the patient journey. This study indicated that technology can be used to facilitate the development of a reflective, problem

solving practitioner focussed on providing efficient and effective patient centred care.

Further research is necessary to gain an in-depth understanding of the different dimensions of health care students' experiences of blogging. Recommendations for further study include:

- Longitudinal studies to gain an in-depth understanding into students' perceptions and experiences of using blogs to enhance patient centred care.
- Studies to evaluate if these findings with undergraduate students can be transferred to the practice environment.

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Supporting Healthcare Workforce Development Using Simulation and E-Portfolios

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Introduction

This paper discusses how the authors have blended a selection of digital technologies to enhance clinical skills learning with undergraduate healthcare students. The project combined simulation scenarios, video podcasts and blog based reflection within an e-portfolio (PebblePad). The e-portfolio acted as a repository for the digital media, and provided a scaffold for students to reflect on their clinical skill acquisition and evidence their learning journey. The students perceived this blend of technologies positively and valued the opportunities for learning and development beyond the original simulation and debrief.

Reflection on clinical experiences to enhance skill development is an essential ability for all healthcare students. However, the challenge of embedding reflection within curricula remains a difficult one. Combining high-fidelity, clinical simulation activities, podcasts of these activities and peer-reviewed blogs provides an environment in which MSc (Pre-registration) Physiotherapy students at MMU are encouraged to reflect on their skills development. This supportive and informal environment allows students to review their clinical decision-making and practical skills, explore their reflections and receive feedback from their peers to add depth and scope.

This provision of blending digital learning material has enabled the students to become responsible for their own development, reflect on their level of skill acquisition, formulate student-led revision sessions and collate evidence of participation/achievement. The integration of all of these learning resources and activities within the PebblePad e-portfolio allows links to be easily made to previous activities and facilitates further learning and reflective practice. The storage of all resources within the

'PebblePad Asset Store' thus enables students to recall, re-play, and reflect at a convenience time for the individual learner. Resources can also be accessed online whilst the students are on clinical placement to further support learning.

Background

Engaging undergraduate students in reflective practice to enhance their clinical decision-making and personal development has previously been reported as an ongoing challenge (NMC, 2007; Sandars, 2009; Owen et al 2009). One of the educational tools that can facilitate this is a personal development portfolio (PDP) and nursing, medical and healthcare professions have a history of using portfolios within both undergraduate and postgraduate curricula to facilitate reflective practice and support learning and development (Owen et al 2009; Sandars, 2009; Tochel et al 2009; NMC, 2010).

Professional bodies encourage and support both undergraduates and qualified members in the use of portfolios (paper-based and electronic) internationally. Currently the use of portfolios within postgraduate healthcare education is being actively considered and in some cases used for both recertification/revalidation and evidencing continuing professional development (Owen et al 2009; Tochel et al 2009; van Tartwijk and Driessen, 2009). Therefore students that actively engage in keeping a PDP throughout their studies are more prepared to enter the workforce and have a readily available collection of evidence that they can use to stimulate their learning in the workplace.

The Association for Medical Education in Europe (AMEE) guide on portfolios for assessment and learning by van Tartwijk and Driessen (2009) discussed how educators can make full use of the possibilities and opportunities that portfolios can offer and highlights difficulties, which can occur. The migration of portfolios to the electronic medium continues to grow (Tochel et al, 2009), and the combination of digital multimedia (audio, photographs, video and podcasts) and emerging technologies including blogs, social networking sites, wikis and human patient simulators activities can be used to stimulate student self-analysis of skill development. One of the advantages of an e-portfolio is therefore the ease of making links between a range of electronic evidence to demonstrate how skills and learning can be transferred from one setting to another. However, careful consideration must be taken to align the most appropriate learning and teaching technologies to enable students to experience and/or consolidate clinical skill development. Careful consideration must be taken to align the most appropriate learning and teaching technologies to enable students to experience and/or

consolidate clinical skill development. The structure of the desired learning is acknowledged as being just as important for effective learning as the content (Owen, 2009; van Tartwijk and Driessen, 2009). Over reliance on and use of new technologies can disenfranchise learners who are unfamiliar with them and the purpose and advantages of using technologies need to be made clear to learners if they are to actively engage. Getting the blend of technologies right can be time consuming and problematic. The aim of this project was therefore to explore if a blend of digital technologies could be used to enhance clinical skills learning and reflective practice

Methods

A series of cardio-respiratory simulated scenarios were developed and integrated into the undergraduate curriculum. Twenty-three students completed the scenarios and debrief and were subsequently provided with a series of podcasts of the sessions on a DVD. The students were subsequently required to undertake self and peer reflection activities on the simulated scenarios using shared blogs within their PebblePad e-portfolios. They also explored the evidence-base related to planned and simulated patient management.

To evaluate the students' experiences of using this blend of technologies a questionnaire survey utilising both open and closed items was used. Additionally, the unit evaluation featuring mixed items was used to gather data on the students' perceptions of the cardio-respiratory teaching. The closed items were analysed using descriptive in SPSS. A thematic analysis of the open items was undertaken using a 'Framework' approach, as described by Ritchie and Spencer (1994).

Ethical considerations

Ethical approval was obtained from the Manchester Metropolitan University Research and Ethics Committee. Students were informed about the survey via email and the institutional managed learning environment and directed towards a students' information sheet. Involvement in the project was voluntary and students had a period of two weeks to consider if they wanted to complete the survey.

Results

A 70% response rate was achieved with the questionnaire survey (16/23 returned, 14/23 fully completed), and 100% response rate from unit evaluations (N=23/23). Descriptive statistics from the closed questions are presented in table 1.

Table 1: Student perceptions of clinical skills and personal development.

“Simulation activities were excellent.” “The podcasts will be useful on placement“,

They also reported that being able to link activities within an e-portfolio provided an environment in which they could consolidate their learning within and beyond the simulated environment: “PebblePad is good ... an obvious use (will be when) we are on placement”

Students also reported that using the webfolio function within the e-portfolio, allowed them to repurpose and represent digital evidence in a variety of different contexts: “We can re-look at the DVD and Basic Life Support Videos on our placements”.

Personal Development

The podcasts provide an opportunity for the students to review their performance repeatedly, facilitating reflection and personal development: “Reflection and video evidence will be useful for employers”. The e-portfolio provided a secure web-accessible environment in which all the resources could be linked and revisited. This enabled the students to see their learning journey and the process of becoming a professional: “Everyone should be provided with this opportunity for CPD purposes

Transferability

Students were able to identify transferable skills developed during the basic life support and simulated scenarios, that would be useful beyond the formative and summative unit assessments: “Its necessary to use this information when applying for jobs”. Blending these digital technologies also supported the students’ different learning styles: “Simulation sessions were very pertinent and supported my own learning style”, “These activities support all our learning styles”.

Discussion

Previous cohorts of students have used paper-based portfolios to demonstrate their PDP. Additional digital evidence was stored on data sticks, as video files and on DVDs. This process led to fragmentation of their portfolio across a variety of paper based and digital medium. Thus, opportunities for students to transfer learning from one context to another were potentially missed.

Students reported that the simulation and reflective learning activities assisted their personal and professional development. The e-portfolio was easy to use and had the advantage of allowing sharing of assets. The students were able to learn at their own pace, reflect with peers and gather supportive information to demonstrate their achievements. The analysis demonstrated that the students believed that the cardio-respiratory simulation activities supported their learning the most, closely followed by reflection and sharing assets electronically. This is likely to be due to the fact that at this stage in the course, reflection and sharing an asset within the e-portfolio was a relatively new skill. This may change as the students develop further reflective writing skills, during the programme and make links to experiences on practice placement.

The e-portfolio allowed students to select learning resources to demonstrate achievement of a range of core dimensions within the National Health Service Knowledge and Skills Framework (DoH, 2004). Students across all Physiotherapy programmes at MMU are now encouraged to use PebblePad to develop, collaborate, share and store learning and assessment activities including podcasts of clinical skills (expert/best practice examples and the students own). These collective learning experiences and reflections can be utilised and re-purposed by students to develop their e-portfolio/webfolios; organise their learning resources in preparation for examinations, practice placements, and demonstrate skill acquisition. Thus allowing learning and development to continue beyond the original simulation learning opportunity. However, one barrier to this intervention relates to the maximum upload of individual movie file sizes, currently at 10MB (Owen et al 2009).

The use of an e-portfolio as a repository for the digital media provided a secure, structured environment for students to reflect on their clinical skill acquisition. Students were also able to clearly see their learning journey and the transferability of skills to the practice placement setting. This would be applicable to a wide range of undergraduate and postgraduate professional programmes where skills are developed within the academic/simulated learning environment and translated into the practice placement setting. Current literature suggests that high-fidelity simulation may promote clinical and reflective skills and that debriefing is the most important aspect of simulation-based education (Grant et al, 2009). However, there is a paucity of evidence identifying the impact of blending simulation, digital learning technologies and e-portfolios to enhance healthcare clinical skills development. Although this study reports positive findings relating to an innovation and provides positive findings, further research is required to explore the applications for other professional groups

Limitation

The small number of pre-registration students enrolling and participating in this initiative, limit our ability to generalize the findings to other populations, however the educational principles and practices are adaptable to all healthcare professional programmes.

Conclusion

This study demonstrated that digital technologies could be blended to enhance the students' educational experiences and facilitate repetitive reflection, post-event within the framework of an e- portfolio. The integration of digital media within the e-portfolio enabled the students to individualise their PDP and encourage each other through peer support networks. Thus providing an opportunity for students to enhance their clinical skill development beyond the initial learning activity and easily transfer learning from the academic to the clinical environment.

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Benefits of eFolio Thinking Across Several University Elearning Psychology Courses

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Abstract

Introduction.

eLearning assignments in university web-based courses that deliberately integrate efolio thinking skills and values might do more than simply serve to promote valuable and essential training experiences relevant to creating ePortfolio identities. eFolio thinking strategies incorporating selection, collection, reflection, connection, and assessments with instructor and peer feedback may result in greater personal engagement. It might also significantly contribute to students' overall acquisition of specific course learning outcomes, hence higher grades. These metacognitive methods as well as traditional educational assignments were statistically examined across several psychology elearning classes to examine the respective "added value" resulting from requiring specific efolio thinking assignments.

Method.

Standard elearning assignments and efolio-structured assignments were analyzed across five upper and lower division psychology elearning classes. These University of Alaska Anchorage (Fall 2011) elearning courses included two large General Psychology, Abnormal Psychology, Psychology of Stress, and a Forensic Psychology course that were all independently examined. Each elearning course required students to post efolio designed weekly key concepts, provide peer feedback and produce a final semester reflection that deliberately exercised efolio thinking skills. All students participated in exams whereas upper division students were also required to provide a term paper and Power Point presentation. The efolio thinking assignments were designed to allow for: independent mastery, metacognitions, transfer of skills, social feedback and assessment. Table 1 below summarizes the pedagogical goals and corresponding efolio thinking with the 6 P's rubric criteria.

TABLE 1 - Pedagogic Goals and Corresponding eFolio Thinking Rubric

Pedagogic Goals	eFolio Thinking – 6 P's
Engagement, Ownership	SELECT – Present Your Key Concept
Critical Thinking, Discrimination	COLLECT- Professional Examples
Personal Meaning, Relevance	REFLECT - Personal Examples
Understanding Relationships	CONNECT – Prior Learning
Ethics, Respect, Acknowledgement	REFERENCES – Provide Sources
Social and Teaching Presence	RESPOND– Peer/Instructor Feedback

Table 2 identifies the inherent skills and fundamental differences found for traditional exam demand characteristics or properties versus the attributes and qualities specific to efolio thinking assignments. One can quickly appreciate the differences unique to each activity and the corresponding assessment attributes.

TABLE 2 - Assignment Demand Characteristics Unique to Exams versus eFolio Thinking

Assignments - EXAMS	Assignments – eFolio Thinking
Objective	Subjective
Timed Tests	At Your Own Pace
Speeded Tests/Placement	Power Test/Achievement
Normative/Group	Ipsative/Personal Best
Fluid Intelligence	Crystallized Intelligence
Professional	Personal Meaning/Reflection
Memory, Recall	Critical Thinking/Metacognition
Discrimination	Generalization
Specific	Summary
Interval Data	Ordinal Data

Concrete	Abstract
Instructor-Centered	Student-Centered
Accountability	Educational Development

Results

Several correlational analyses were conducted across all classes to evaluate exams versus reflection papers for their predict value in determining final grades. Only the beginning classes in General Psychology 111, where 90% are non-psychology majors, showed small but significant relationships for exams yet not for their reflection papers. Whereas for all upper division courses: Abnormal, Stress and Forensic, which are predominately upper class psychology majors, the reverse was found. As seen in Table 3, exams were not a significant predictor of total grade performance at all while reflection papers scores were all significantly related across the board towards predicting final grades.

TABLE 3 Correlational Results Across Psychology Courses Predicting Final Grades for Major Exams and Reflection Paper Assignments

COURSE	Final Grades	EXAM1	EXAM2	EXAM3	Reflection Paper
General Psychology-111	Total Score	r = .19*	r = .21*	r = .12	r = .15 n=122
Abnormal Psychology-345	Total Score	r = -.13	r = .02		r = .33* n=36
Stress Management-380	Total Score	r = -.02	r = .03		r = .44** n=45
Forensic Psychology-486	Total Score	r = .20	r = .22		r = .37** n=41

(Note: Two sections of General Psychology were Combined 801 n=61, 802 n=61, total n=122) ($p < .05^*$, $p < .01^{**}$)

Discussion

What is clear from this data is that objective multiple-choice exams versus subjectively written reflection papers differ in their predictive power. It appears memorization tasks that do not require much critical thinking or personal reflection were not particularly indicative of superior performance. Among several possible conclusions, perhaps since exams were open-book, open-notes, and somewhat superficial, students lacked the deeper learning, ownership and personal engagement found to exist with eFolio thinking. At the very least in this study, eFolio thinking was found to be a better predictor of final grades.

How do Trainee Teachers use e-portfolios?

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Introduction

In initial Teacher Training (ITT), the technology rapidly being adopted to support the development of trainees into fully qualified teachers who can demonstrate competencies against the required standards is the e-portfolio. This research investigated how trainee teachers use an e-portfolio on one year Initial Teacher Training Courses. For the first year of research (Pilot phase cohort one) a commercially produced e-portfolio was adopted for the course, incorporating a range of tools, marketed as a personal learning space for multiple uses accessible through the internet. For the second year of research (Main Study cohort two) the tutors designed an e-portfolio using tools available on the University Virtual Learning Environment allowing the trainee to complete and upload work to be assessed against course criteria. The decision to change the e-portfolio after the first year was a direct response to the reported negative experience of both students and tutors.

The preliminary findings from analysis closely reflect the findings of other researchers in relation to the implementation of an e-portfolio, student and tutor buy-in, motivation, understanding the purpose, training, technical support demands on staff and how to use student's time efficiently (Heath 2005, Pecheone, Pigg, Chung, Souviney 2005, Tosh, Light, Fleming and Haywood 2005, Strudler and Wetzel 2005). In addition the findings from the Pilot suggested a clash of paradigms: tutors adopting a social constructivist teaching approach with the expectation of students constructing their own knowledge through interaction with peers and more informed others, whilst the students, in their quest to complete assessed work and evidence against the required set of Standards, adopting a behaviourist approach suggesting the expectation of transmission of knowledge and a passive acceptance of this. This was the theme taken forward in the main study; the investigation into the use of the e-portfolio as a pedagogic tool from the perspective of students and tutors, whether findings continue to reflect the adoption of different paradigms and the effect of this clash on the student reflections recorded by the student on the e-portfolio and if so/not why this may be the case. Although many research studies have focused on the construction of the e-portfolio, there appears to be a dearth of research carried out on the analysis of the e-portfolios related to reflective practice other than the assessment process built into course design. Steffens states that it is 'difficult to find hard evidence for the impact of new technologies' (2008:230). As a consequence of this increasingly widespread and diverse use of e-portfolios, Strudler and Wetzel conclude:

'we need a range of studies that inform whether the large-scale implementation of electronic portfolios in teacher education is ultimately a good idea that should be pursued and sustained in the coming years'

(Strudler, Wetzel 2005:243)

Given this situation, the current research aimed to analyse interactions with e-portfolios to find out when this occurred, what they did, frequency of interactions and response to feedback. Data from the main study has been collected but is yet to be analysed in full. Additionally the work uploaded will be analysed to explore the reflective practice in the development of the e-portfolio.

E-portfolios Defined

The use of the e-portfolio in this study was defined by the course design and associated pedagogy. Content may include coursework, assessments, pieces of work relating to life-long learning, reflections on achievements, goals, outcomes, transcripts, records of achievement, evidence of competencies, planning and reflection as well as self and peer feedback (Kirkwood 2009, Stefani, Mason, Pegler 2007). This content may, or may not be assessed for, as emphasised by Barrett (2004), there is a distinction between the use of portfolios as an assessment system using a positivist paradigm, portfolio as test, and portfolio as a story using a constructivist paradigm. Cohen (2005) concludes there a clear distinction between an e-portfolio as a reflection of the learning journey and a reporting system of assessment management. It is the distinction and the interpretation by the user that needs to be clearly understood and may impact on its success in the long term (Roberts G, Aalderink, Cook, Feijen, Harvey, Less, and Wade 2005). The concept of the e-portfolio can be defined as follows:-

An e-portfolio is the product, created by the learner, a collection of digital artefacts articulating experiences, achievements and learning. Behind any product, or presentation, lie rich and complex processes of planning, synthesising, sharing, discussing, reflecting, giving, receiving and responding

to feedback. These processes – referred to here as ‘e-portfolio-based learning’ – are the focus of increasing attention, since the process of learning can be as important as the end product.’

(JISC, 2008)

Methodology

This study is, primarily a qualitative but also in part, quantitative research project with data collected from interviews, questionnaires, and, for the Main Study, analysis of reflective writing carried out on the e-portfolio (see Table 1).

Table 1. Data Collection methodological tools for Pilot and Main Study

Methodological Tool	Pilot	Main Study
First questionnaire – distributed September	98 distributed - 98 returned (100%)	100 distributed – 74 returned (74%)
Second Questionnaire – distributed February	34 distributed - 13 returned (38%)	59 distributed – 14 returned (24%)
Student Interviews	9 students – 6 attended one interview per semester	Sample group of 17 – attended one interview per semester
Staff Interviews	6 tutors – one interview per semester	6 tutors – one interview per semester
Analysis of e-portfolio	No analysis	17 e-portfolios

Content Analysis

Content analysis was carried out on interview data. Transcripts were interrogated and coded from the themes that arose from the content, these codes were then sorted into five categories as follows:-

Academic conditions (context) – issues concerned with the structure and content of the course.

Technical conditions (context) – issues referring to the technical conditions that may have been prevalent at university level.

System – issues relating directly to the design and operability of the system used.

Scaffolding – comments directly related to the way in which learning was scaffolded

Experience – issues that became apparent from the users experience of using the system.

Analysis of Coding – Pilot and Main Study Interviews

In the Pilot the most frequent comments from students referred to the academic context, not understanding the expectations of the course. During interviews it became evident that students did not know what to do. In addition they felt that their tutors did not have skills or understanding to troubleshoot problems and as a consequence they felt unsupported. Interestingly in the main study where the tutors were confident in using the e-portfolio the most frequent comments concerned the experience and scaffolding. Coded student interview data shown as percentages of total coded for each interview is shown in Appendix 1, Appendices 2 and 3 display the results as negative and positive comments.

Academic Conditions – The Pilot sample of students commented most on the academic conditions. They frequently commented on not knowing what to do, they referred to the lack of understanding of what was expected and often difficulty finding particular areas along with being surprised by chance discovery of elements that needed to be completed. By comparison the main study students reported a more positive understanding of academic conditions however negative comments for use in placement increased by the 2nd interview and negative comments regarding working increased by 3rd interview. Both groups of students commented on the the amount of time taken to complete the work using the e-portfolio which was often a duplication with work being completed using a word processor on their computers then copied and pasted on the e-portfolio.

Technical and System Conditions - Most comments from students in the Pilot were negative with regards to training to use the e-portfolio together with support provided. For the main study, students initial commented positively on the e-portfolio. They felt they had the skills to use it as it sat within the VLE and only required them to learn one set of skills and had received adequate training and support. The negative comments referred to the design and how navigation required multiple mouse clicks. Interestingly the students from the pilot commented seven times on the system which they did not perceive as an issue, whereas the students in the main study when referring to ease of use commented positively however by the

second interview negative comments were made (see Appendix 4). In the Main Study students focused more on the e-portfolio as a tool.

Scaffolding - In the main study most comments from the students referred to the scaffolding. For the students these comments focused on the amount and timing of feedback and how this was given. The negative comments from the students referred to not receiving feedback. Interestingly whilst probing during interview on the positive comments with regards to satisfaction with feedback it was revealed that tutors provided this in various forms and not necessarily through the e-portfolio. One student commented that as the tutor did not give feedback through the e-portfolio the student had uploaded this to the e-portfolio.

Experience – Both groups of students stated that they did not use the e-portfolios whilst on placement. Both groups felt this was a Campus activity, and this was confirmed through analysis of the interactions with the e-portfolio in the main study. Both groups also identified the e-portfolio as a positive use of technology for the purpose of tutor access to assess work. Students did not refer to the e-portfolio as a tool to aid reflection.

Interactions by Students with the e-portfolio – Main Study

Students completed two assessed elements of the course work using the e-portfolio. One element entitled ‘tasks’ comprised 27 individual tasks set by tutors which students were expected to complete at various points in the course whilst on placement by deadline dates. The second element the Reflective Practitioner Module entitled ‘Themes and Issues’ comprised 9 sections of which 5 were submitted at Masters level, the student was expected to work on these throughout the course with a hand-in date just before the end of the course. A behaviourist theory of learning appears to underpin the work carried out on tasks with tutors setting clear expectations of what they expected students to achieve. A social constructivist theory of learning underpinned the Themes and Issues where students were expected to construct their own learning through interaction with school practice, research, lectures and tutors feedback

Table 3 shows the context where the interactions took place. This reveals that for work on the tasks most interactions took place during placement weeks, 494 (43% of total interactions on tasks) and whilst on campus 387 (33% of total interactions on tasks), for the Themes and Issues module the majority of interactions took place when they were on holiday, 165 (37% of total interactions on themes) and on campus 159 (36% of total interactions on themes). This would appear to reflect the nature of the work with tasks designed to be completed on placement and confirms the perception of the students that Themes and Issues was not work to be produced during placement weeks. Tasks are set predominantly as fact finding exercises and activities to be completed during school placement with hand-in dates throughout the course, whereas work on the Themes and Issues were expected to draw on experiences throughout the training period from school placements, information gained whilst in University and from research with hand-in dates for formative assessment and a final date for summative assessment in May/June before the course ended in on the 8th July.

Table 3. Interactions by main study students with the E-portfolio for each context showing % of total interactions for all contexts

	On placement	%	On campus	%	On holiday	%	Study leave	%	Total	%
Tasks	494	31	387	24	216	13	60	4	1157	72
Themes/ Issues	61	4	159	10	165	10	59	3	444	28
Total	555	35	546	34	381	24	119	7	1601	

During the training year the students spent 13 weeks in University attending lecturers and seminars, 20 weeks on school placement, 8 weeks on holiday and 4 weeks on study leave. Table 4 shows the average number of interactions for the Main Study sample and average number of interactions per student in the different contexts showing that the work on the tasks was relatively constant in different contexts apart from study leave, whereas the majority of work on Themes and Issues taking place during holiday weeks. This may be due to pressures of time whilst on placement and on campus, or the perception of the student and subsequent prioritising of work.

Table 4. Averages of weekly number of interactions for sample and the individual Main Study students in the different contexts

		Context

Section	Students	Placement (20 weeks)	On campus (13 weeks)	Holiday (8 weeks)	On study leave (4 weeks)
Professional Tasks	Group	24.7	27.8	27	15
	Individual	1.4	1.6	1.6	0.9
Reflective Practitioner Modules (Themes)	Group	3.0	12.2	20.6	14.7
	Individual	0.2	0.7	1.2	0.9

Frequency and Context of Interactions

The pattern of interaction by the students confirms interview data that the work on the Themes and Issues takes place mainly when they were not on placement, whereas Tasks which are related to their teaching practice are completed during placement weeks. Analysis of the e-portfolios suggests that the students are not interacting on a regular basis for Themes and Issues, the expectation from the course document, but the feedback points in the year are the motivating factor. As illustrated in figure 2, student activity peaks before feedback points of:-

- Feedback Point 1 w/c 11/10, 18/10, 25/10/10
- Feedback Point 2 w/c 29/11, 1/12, 13/12/10
- Feedback Point 3 w/c 28/2, 7/3, 14/3/
- Feedback Point 4 w/c 13/6, 20/6, 27/6/11

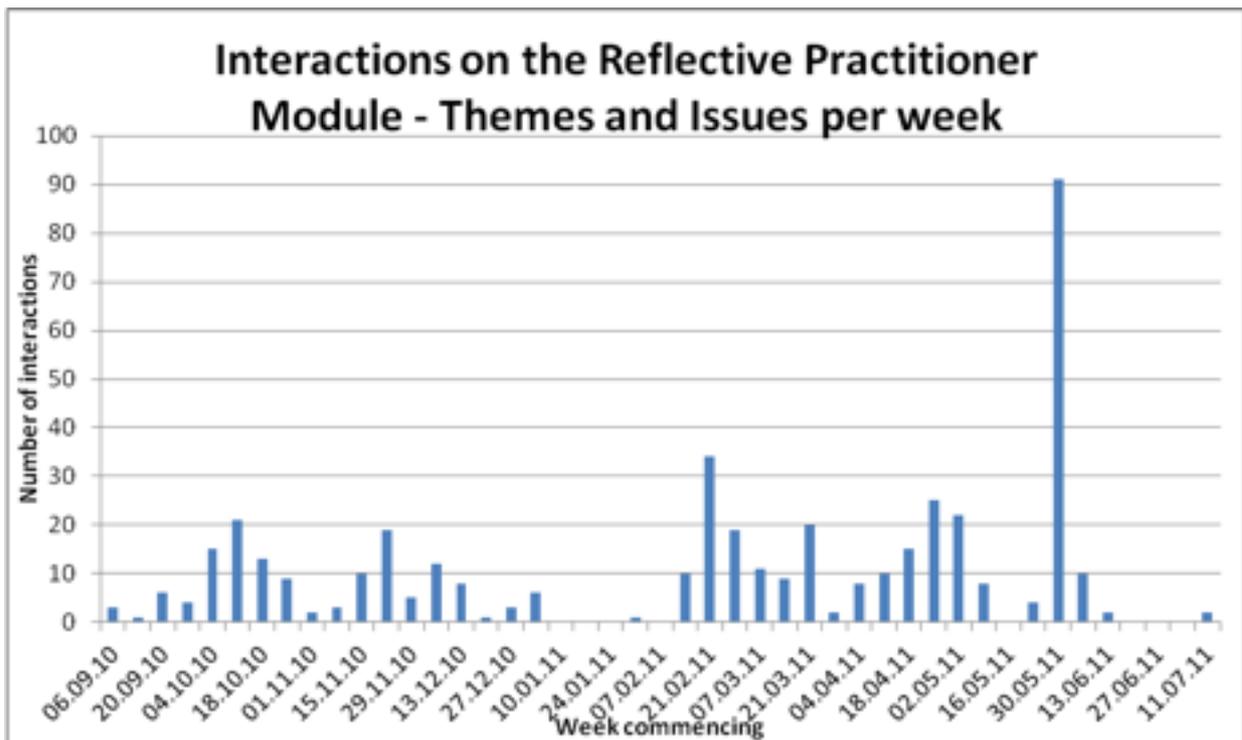


Figure 2. Total number of interactions per week

The pattern of interactions would suggest that the e-portfolio is being used as a storage space for assessment. From interviews with students this was considered to be the main purpose of the e-portfolio, a place where their work was easily accessible to both themselves and the tutors. This was substantiated from analysis of the questionnaire revealing it is the perception of the students that the purpose for the e-portfolio is a means of easy access for tutors for the purpose of assessment of course work. This would indicate that the purpose is to provide a means for the storage of learning experiences some of which will be assessed. The need for a clear purpose is essential to the successful implementation (Strudler, Wetzell 2005).

Response to Feedback

Analysis of the 17 e-portfolios show that for the tasks section there were 1157 student interactions and 122 feedback occurrences (11% receiving feedback), with students responding to 36 (30%) feedback comment. Analysis of the feedback reveals that comments were summative, acknowledging receipt of the work or requesting missing work. Themes and Issues received 444 student interactions and 57 feedback occurrences (13% receiving feedback) with students responding to 36 (63%). This feedback was either the return of edited work where the student responded by uploading a revised submission or a comment on the attainment level with the student adding further content and then uploading the revised submission indicating reflection by the student. Reflection on written feedback is seen as an essential part of the learning process (Boud 2000, Gardner 2006, Quinton, Smallbone 2010, Sadler 1989). Students take control of their own learning through the process of reflection by engaging with the assessment process (Whitelock 2007). However students need to be motivated to firstly engage with the e-portfolio and secondly the feedback as their interaction ultimately determines the success or otherwise of using this technology (MacDonald, Twining 2002). Therefore, a clear and shared understanding of the purpose is essential to the successful implementation (Kirkwood 2009, Strudler, Wetzel 2005).

How did trainee teachers use the e-portfolios?

For the Pilot Study interview data and analysis of one e-portfolio suggests they were used to construct a web-folio of evidence against the Standards and course work using the Word Processor within the e-portfolio to produce text and images or by cutting and pasting from another Word Processor such as Word as well as hyper linking to other areas within the e-portfolio. Lack of understanding of how to share work with tutors caused delays in work being assessed and, if this was achieved, retrieval of feedback was a major issue due to a lack of knowledge and understanding on how to do this. They did not use the e-portfolio to record reflections. Preliminary analysis of main study data suggests students followed a similar pattern of completing work to be assessed. They did not use it for providing evidence against the Standards; this was achieved by constructing paper-based portfolios.

Discussion

The pilot study students reported negative experiences of using the e-portfolio and all stated they would not use it in the future; this attitude remained constant throughout the course. By contrast students in the main study were initially satisfied with the e-portfolio platform as a tool expressing concerns on their experience as the year progressed, commenting on the limitations and design, felt it was for assessment purposes, commented on the time taken to complete work and felt quality of feedback and mode was dependant on individual tutors. As the e-portfolio was designed within the currently VLE the main study students were able to learn one set of skills, which were practised frequently as all the course documentation and paperwork were available through the VLE together with access to their University email accounts and access all areas through one log-on. In contrast in the Pilot year the emphasis was on content, lack of support as the tutors were not proficient in using the tool, time and duplication of work. The Main Study also revealed that tasks which are set with specific instructions for completion and deadlines triggered the expected course response, whereas the open-ended more reflective work on the 'Themes and Issues' appeared to be in response to forthcoming deadlines for feedback points suggesting, for some students, this is the motivation for using the e-portfolio. During interview students in the main study reported different pedagogical approaches being adopted by tutors which may have been an influencing factor on the number of times a particular student interacted with the e-portfolio. Students also discovered that emailing work received an immediate response whereas work on the e-portfolio did not. The experience of the student using the e-portfolio was dependant on the pedagogical approach adopted by the tutor.

Future Work

17 students have given permission for the work on their e-portfolios to be analysed. A total of 269 pieces of work will be analysed and coded with reference to reflective activity. Analysis will determine how students reflect on the e-portfolios, if there is a relationship between the use of e-portfolios and the development of reflective learners and if the clash of paradigms revealed during the Pilot study is still evident in the Main study. In addition reflections will be analysed to see if there is a relationship between the type of reflection and date of interaction and the assessed mark of reflective activity. Preliminary coding can be seen in Appendix 5.

Analysis of the interactions that took place on the e-portfolio relating to frequency of use, dates of interaction, response to feedback and the difference between responses to tasks and reflective writing will continue.

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Appendix 1. Student responses per category for the Pilot and Main Study

Category	Interview	Students	
		Pilot No. of Responses and % of category	Main Study No. of Response and % of category
Academic	1 st	72 (37%)	29 (33%)
	2 nd	99 (51%)	41 (47%)
	3 rd	24 (12%)	18 (20%)
Category Total		195 (37.64%)	89 (10.9%)

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Technical	1 st	53 (55%)	49 (24%)
	2 nd	30 (31%)	6 (9%)
	3 rd	13 (14%)	11 (17%)
Category Total		96 (18.53%)	66 (8.1%)
System	1 st	7 (100%)	102 (48%)
	2 nd	0	61 (29%)
	3 rd	0	46 (22%)
Category Total		7 (1.35%)	209 (25.61%)
Scaffolding	1 st	39 (48%)	50 (22%)
	2 nd	29 (36%)	38 (17%)
	3 rd	13 (16%)	139 (61%)
Category Total		91 (34.15%)	227 (27.82%)
Experience	1 st	47 (36%)	69 (31%)
	2 nd	67 (52%)	35 (16%)
	3 rd	15 (12%)	121 (54%)
Category Total		129 (24.9%)	225 (27.57%)
Total		518 (100%)	816 (100%)

Appendix 2 – A comparison of the coded interview data for the Pilot. A breakdown of positive and negative comments as a percentage for each category, and also, a percentage of total coding for interviews.

	Academic		Experience		Scaffolding		System		Technical	
Pilot	Total for Category 195		Total for Category 129		Total for Category 81		Total for Category 7		Total for Category 96	
	3	192	11	118	20	61	0	7	9	87
	Pos %	Neg %	Pos %	Neg %	Pos %	Neg %	Pos %	Neg %	Pos %	Neg %
1 st Interview % per category	1.55	35.38	4.65	24.81	8.64	39.51	0	100	9.38	45.83
1 st interview % total coding	0.59	13.58	1.18	8.07	1.38	6.30	0	1.38	1.77	8.66
2 nd Interview % per category	0	50.76	0	34.36	13.58	22.22	0	0	0	31.58
2 nd interview % total coding	0	19.49	0	13.19	2.17	3.54	0	0	0	5.91
3 rd Interview % per category	0	12.31	3.88	7.75	2.50	13.58	0	0	0	13.54
3 rd Interview % total coding	0	4.72	1.01	1.97	0.39	2.17	0	0	0	2.55

Appendix 3 – A comparison of the coded interview data for the Main Study. A breakdown of positive and negative comments as a percentage for each category, and also, a percentage of total coding for interviews.

	Academic		Experience		Scaffolding		System		Technical	
Main Study	Total for Category 89		Total for Category 225		Total for Category 227		Total for Category 209		Total for Category 66	
	49	40	202	23	218	9	136	73	59	7
	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg
1 st Interview % per category	25.84	6.74	28.88	1.78	22.03	0	46.41	2.39	68.18	3.03

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1 st interview % total coding	2.82	0.73	7.96	0.49	6.13	0	11.89	0.98	5.51	0.24
2 nd Interview % per category	22.47	24.72	7.11	8.44	12.78	3.96	14.83	14.35	4.55	4.55
2 nd interview % total coding	2.45	2.69	1.96	2.32	3.55	1.10	3.79	3.67	0.37	0.37
3 rd Interview % per category	6.74	13.48	53.78	0	61.23	0	7.65	18.18	16.67	3.03
3 rd Interview % total coding	0.73	1.47	14.83	0	17.03	0	1.96	4.65	1.35	0.24

Appendix 4. Analysis content coding of student interviews Main Study

TOTALs	Interview 1		Interview 2		Interview 3		TOTALs
		%		%		%	
1 : Academic Conditions	29	33%	42	47%	18	20%	89
2 : CPD positive	0	0%	2	29%	5	71%	7
3 : CPD Negative	0	0%	1	100%	0	0%	1
4 : Deadlines Positive	1	2%	1	50%	0	0%	2
5 : Deadlines Negative	0	0%	0	0%	0	0%	0
6 : Expectations of Course positive	17	74%	6	26%	0	0%	23
7 : Expectations Negative	3	6%	12	80%	0	0%	15
8 : Pedagogy	0	0%	2	100%	0	0%	2
9 : Reflections Positive	0	0%	9	100%	0	0%	9
10 : Reflections Negative	0	0%	6	100%	0	0%	6
11 : Workload Positive	5	83%	0	0%	1	17%	6
12 : Workload Negative	3	17%	3	17%	12	67%	18
13 : Experience	69	31%	35	16%	121	54%	225
14 : Confidence positive	0	0%	0	0%	10	100%	10
15 : Confidence Negative	0	0%	0	0%	0	0%	0
16 : Motivation Positive	1	3%	0	0%	28	97%	29
17 : Motivation Negative	0	0%	1	100%	0	0%	1
18 : Preference Positive	12	34%	4	11%	19	54%	35
19 : Preference Negative	0	0%	2	100%	0	0%	2
20 : Previous Experience Positive	14	88%	0	0%	2	13%	16
21 : Previous Experience Negative	0	0%	0	0%	0	0%	0
22 : Purpose Positive	18	82%	2	9%	2	9%	22
23 : Purpose Negative	0	0%	0	0%	0	0%	0
24 : Relationships Positive	0	0%	2	6%	33	94%	35
25 : Relationships Negative	0	0%	4	100%	0	0%	4
26 : Skills Positive	0	0%	3	11%	24	89%	27
27 : Skills Negative	3	75%	1	25%	0	0%	4
28 : Use in placement Positive	20	71%	5	18%	3	11%	28
29 : Use in Placement Negative	1	8%	11	92%	0	0%	12
30 : Scaffolding	50	22%	38	17%	139	61%	227
31 : Feedback Positive	29	28%	17	16%	58	56%	104
32 : Feedback Negative	0	0%	7	100%	0	0%	7
33 : From Peers Positive	13	25%	6	12%	33	63%	52
34 : Peer negative support	0	0%	0	0%	0	0%	0
35 : Support from tutor Positive	8	13%	6	10%	48	77%	62

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36 : Tutor support negative	0	0%	2	100%	0	0%	2
37 : Tutor Experience Positive	0	0%	0	0%	0	0%	0
38 : Tutor Experience Negative	0	0%	0	0%	0	0%	0
39 : System	102	49%	61	29%	46	22%	209
40 : Accessibility Positive	0	0%	2	100%	0	0%	2
41 : Accessibility Negative	0	0%	0	0%	1	100%	1
42 : Ease of Use Positive	37	54%	26	38%	5	7%	68
43 : Ease of Use Negative	3	10%	21	70%	6	20%	30
44 : Issues with system positive	43	90%	3	6%	2	4%	48
45 : Issues Negative	0	0%	5	14%	31	86%	36
46 : Ownership Positive	17	94%	0	0%	1	6%	18
47 : Ownership Negative	0	0%	1	100%	0	0%	1
48 : Reliability Positive	0	0%	0	0%	0	0%	0
49 : Reliability negative	2	40%	3	60%	0	0%	5
50 : Technical Conditions	49	74%	6	9%	11	17%	66
51 : In University	4	80%	1	20%	0	0%	5
52 : Skills Positive	6	67%	0	0%	3	33%	9
53 : Skills Negative	0		0		0		0
54 : Support Positive	11	85%	2	15%	0	0%	13
55 : Support Negative	0		0		0		0
56 : Training Positive	26	76%	0	0%	8	24%	34
57 : Training Negative	2	40%	3	60%	0	0%	5
TOTAL	299	36%	182	22%	343	42%	824

Appendix 5. Preliminary results of content analysis of work uploaded to e-portfolio Main Study

		% of Category	% of total coding
Personal Philosophy			
Realisation of what it means/reference to lack of understanding	46	6.64	1.44
Importance of meeting needs of all	100	14.45	3.13
What excellent teachers do	15	2.17	0.47
What good teachers do	26	3.76	0.81
How to ensure it happens, strive to do	179	25.87	5.6
Own misconception of issue	7	1.01	0.22
How to implement in school	89	12.86	2.78
Own opinion on how to ensure good practice is adopted	214	30.92	6.7
Own learning style	16	2.31	0.5
sub total	692		21.65
Literature			
Defining terms	79	15.83	0.63
Literature what you should do	400	80.16	12.53
Questioning what literature says	20	4.01	0.63
sub total	499		15.61
Development of thinking			
adds quotes	249	41.78	7.79
adds questions to answer	54	9.06	1.69
adds hyperlink	64	10.74	2.00
adds list of sub-headings	20	3.36	0.63
notes from lectures	25	4.19	0.78
viewed only	67	11.24	2.1
Introduction what I am writing about	117	19.63	3.66
sub total	596		18.65
Reflection			
Literature no link to theory/experience and/or policy	331	34.62	10.36
Literature links to experience	381	39.85	11.92
Literature and theory discussed	91	9.52	2.85
Literature, theory, policy, experience discussed what will do as a result	139	14.54	4.35

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Reflects on literature	14	1.46	0.44
sub total	956		29.91
School Practice			
Asking other professionals/seeking help from others	15	3.56	0.05
Questioning of practice in current placement	31	7.36	0.97
Reference to own teaching experience	181	42.99	5.66
Comment re impact on school of doing this	35	8.31	1.1
What school policy says	159	37.77	4.97
sub total	421		13.17
Reference to Teachers' Standards	32		1.00
TOTAL	3196		

Design and implementation of an ePortafolio learning strategy aimed at Teachers Training: making sense of the process of learning

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Abstract: A learning strategy with electronic portfolios was designed and implemented in order to be used in a Master level of Teacher Training Erasmus Mundus. The Research Group FORTE at Rovira I Virgili University has given support to the implementation of experiences with learning ePortfolios to foster professional identity building and the learning process. What are the implications of student's identity skill development and their learning approaches with ePortfolios? In this sense, we consider a concept of professional identity formation with ePortfolios needs to be established in the higher University context.

Keywords: professional identity, assessment, learning, eportfolio

Introduction

A general tendency of ePortfolio practice in Spain is the generation of numerous pilot experiences. The experience presented shows how ePortfolios can be integrated into the classroom settings at a Master level of Teachers Training. Although, this experience went in accordance of the tendency, there are some variations of the application of the ePortfolio. These variations include the mechanisms used to encourage the developing of a digital identity and a professional identity.

This paper shows how ePortfolio in Higher Education can be focused on preparing teachers for their future professional roles and its significance when evaluating with ePortfolios as guiding the process of learning. The importance for the use of ePortfolios rely on giving the base for it, and promote the use of an ePortfolio system integrated with a learning environment, setting forms and guidelines that can be used in classroom.

Background

ePortfolios are still a less frequent practice in Spanish Teacher Education than in other countries (Barberà, 2006). However, there are many ePortfolio initiatives in the field of Teacher Training that show an emerging practice. The most common application of ePortfolios is helping the teaching and learning process, and the integration of new evaluation strategies. Also, ePortfolios had been applied more in subjects than in programmes, it is not a holistic approach, because the ePortfolio is not applied during the whole the student learning process, in terms of all the courses or the studies in the University (Spanish Network on ePortfolio, Barbera 2006). Although, is not a holistic approach, the practice with ePortfolios had been carried out with experiences involving mostly scenarios of assessment, guiding of the process of learning, evidence of practicums, in short terms an ePortfolio for Teaching and Learning. Also, it is important to remark that most of the practices had resulted in benefits for the students in more awareness of their learning and their professional situation through the meta-cognitive mechanisms and presentation of digital evidences.

According to the research on ePortfolio in Spain, offered by the ePortfolio Network. Additionally, it has brought to light the necessity for more institutional support, a lack of knowledge of good practices and mechanisms of design and techno-pedagogical implementation with ePortfolios. Barberà, E., Guardia, L., Guash, T. (2009).

The implementation of ePortfolios in student teacher programme had focused on a continuous evaluation of the student in the framework of a comprehensive teaching (one that considers principles of equity and diversity) and evaluation of a dialogic approach. However, it's getting more evident that implications go beyond the evaluation system, and they make explicit the necessity for a more methodological and didactic design. It turns very interactive where the spotlight falls mainly in the student.

ePortfolio helps to "remediate" the self, allowing the student to use multimodal literacies to construct a relationship between technology and identity. Yancey (2004). Then, ePortfolio is an expansive space for students to develop into professionals "they can create develop a professional identity by multiplicity, elaboration by working in visual and verbal modalities". ePortfolios provide visibility for graduates, due to the many roles played in the academic setting and professional audience.

The ePortfolio is a system of a versatile authentic assessment, but with clear criteria for application, attributing the responsibility to the student in their own assessment and their own learning.

In order for e-portfolios to connect professional growth to the process of learning to teach, chosen learning

activities that enhance a metacognitive kind of reflection need to be included in this experience. There are some examples of some of the activities that show reflection (Johnson, 2006): explanation of the purposes, it refers to the educational or professional goals clearly articulated; reflective statements, can be personal or collaborative and are the result of communication with tutors and professors, these are the reactions and responses to the products of learning and context to clarify the purpose of the ePortfolio, also show the interaction with learning products and process; heading of statements, include identifications and explanations that provide the logic of the selection and inclusion of learning products as evidence. They refer to levels of learning ePortfolios in higher education: an opportunity to rethink, teaching with reflection, the definitions presented, explanations of learning products and their source; continuous assessment and learning assessments, it refers to both formative and summative evaluation, indicate the growth or fulfillment of the criteria or goals, allow comparisons with the beginning and give life and meaning to learning products.

From the literature review there is evidence of development of a professional identity for both academic and professional audiences through the process of portfolio design and development and their thematic choices and expansion of their technology literacies. For example, an ePortfolio carried out in Master Program of Scientific and Technical Communication, PhD in Rethoric and Writing. Blair & Monske (2009). Other academic spaces for portfolio development include the undergraduate writing curriculum, including first-year composition and technical communication, the latter stressing the application of various project management and document design competencies to specific business and industrial settings. Results from previous experiences had shown a significant development in technology-based literacy and communication because of the communicative context that allow graduate students to view technological documentation as careful choice that impact their character and professional identity. In this sense, bringing to light the concept of remediated self and identity offers new opportunities for self-definition through “New Media”. A remediated self is increasingly evident through various digital tools that allow users to not only construct a personal identity but also establish connections with other members of the discourse communities.

Also, one part of the ePortfolio implementation that more concerns educator is assessment, a chance of educational paradigm from one “center on the teacher” to “one center in the student” and the necessity to have control of learning while shifting from one paradigm to another. In this sense, recent research shows that the way the learning and assessment environment is perceived by students affects to a large extent, how they cope with the learning environment and their learning approaches (Lawness and Richardson 2002; Segers, Nijhuis, and Gijsselaers 2006).

Case of integration of ePortfolio at higher education

In 2011, the research group FORTE at the Rovira I Virgili University launched a project to support learning and development of professional identity through digital portfolios. Mahara was used as a technological platform. It is relevant to emphasize the importance of ePortfolio use either inside or outside of the University while learning to become teachers. At the Rovira I Virgili University is not mandatory the ePortfolio use, but there is a project of ePortfolios with Mahara that is currently at it starting stage at the Institutional level.

We remarked that the research taken has as context at a Master Erasmus Mundus for Teacher Training. It works in collaboration with 5 European Universities from Reims, Portugal, Spain and Norway. We applied the student ePortfolio in a group of student during one academic year of the first year of Master and then as a continuo for a second academic year. This group was formed in turn by an intercultural team of students from South America, Catalonia and Lithuania.

To successfully complete the course, students were required to complete classroom work, an individual project and a group project. In this sense, all the activities got done across the ePortfolio an assessed according to a rubric concerted between students and teachers from the beginning of the course. The ePortfolio implementation was designed to be introduced in a regular class that in a “normal way” as the one where the professor presents the content and the students receive information. While integrating the ePortfolio tool in this course, part of the didactical part was changed. In this sense, we designed an action plan to introduce the ePortfolio to be able to combine it with the lectures. At the same time, the ePortfolio implementation was continuously monitored with the completion of weekly activities on assignments related with the subject; institutional educational assessment. Each activity comprise the use of specific digital artifacts selection and the creative eLearning activities designed to be instrumental in crafting a meaningful ePortfolio and facilitating reflection and critical thinking that take them to develop a professional identity.

From all the classes pertaining to the subject; we used three initial sessions for the tool integration, one for each of the first three classes. The first session consisted of an explanation of the concepts of ePortfolio,

the purpose that it has for the course and the accompanying work Mahara. This would set up the base on the dynamics of the activities used and the thought process that goes hand in hand with the course content. In addition, to continue the work with ePortfolio, two final sessions were used to complete and conclude on the work done during the academic year.

The students had clear that the purpose of the ePortfolio was to determine the Identity skill development throughout the use of ePortafolios and its incidence in learning approaches, to examine student's perceptions of the assessment practices and the relationships to their learning approaches, and to create an eLearning Portfolio environment to evidence formal and informal learning.

In order to give relevance to the research, we highlight that both the design of the Eportfolio strategy and the study applied to value the implications of the ePortfolio were of the same importance. For the latter, we have the application of two questionnaires, the first one applied at the beginning on the initial approaches to learning and identity skill development. The second one at the end, on perceptions of the assessment practice and its influence on learning approaches.

The initial questionnaire applied IPQ (Initial Perceptions of ePortfolio Questionaire) guide us to know the level of technology skill development and the attitudes of participants about the ePortfolio use for projecting them as professionals. It was necessary to know the level of technology skill development in order to relate it with a successful ePortfolio implementation and the level of training needed for the use of the platform. Both & Heath (2005) agree that an ePortfolio takes time to build and need some good technology skills and proper training to gain these skills.

Consequently, a revised AEQ (Assessment Experience Questionaire) was applied to measure the perceptions of the assessment practice and its influence on learning approaches after the practical use of the ePortfolio. The dimension of identity and professional development is enhanced by reflecting, creating and designing their eportfolios (Mac Donald, Liu, Lowell, Tsai, & Lohr, 2004).

The dimensions used to design the questionnaires were; Initial questionnaire: genre, age, discipline, perceptions regarding assessment, perceptions regarding professional identity, perceptions regarding the tool. Final questionnaire: level of digital skill development, initial perceptions of the tool.

The table below show how the Integration of the ePortfolio was designed to be integrated in regular classes, accompanied with the application of the questionnaires.

	Initial Questionnaire
Session 1	Introduction Explanation and agreement on rubric Pedagogical and technical guidelines
Session 2	Pedagogical and technical guidelines Integration with Web 2.0 tools Reflective process Professional identiy construction
Session 3	Conceptual Reflection Process Presentation of the working ePortfolio to an audience
Across the course	Reflection and recording evidence of individual work and team work
At the end of the course	
Session 4	Self-Assessment using the rubric Complete eportfolio activities required for the course
Session 5	Assessment ePortfolio Final feedback from teachers and suggestions for the ePortfolio by students.
	Final Questionnaire

Table. ePortfolio integration design

At the end of the course students self-evaluated their own performance using the Mahara ePortfolio tool adapted for the experience. The use of Rubrics was used as self-evaluation guide for students to assess the level of the reflection over concepts and practical work.

Results

For educational practice, the study firstly indicates four crucial elements on the ePortfolio process:

feedback, professional identity, ePortfolio appropriateness, guided formative assessment.

Firstly, the students acting on the feedback, this means teachers encouraging students to make explicit how they used feedback to reorient their reflections or adding value to the process of knowledge construction. Secondly developing an ePortfolio identity, it was proved the importance of including activities mainly at the beginning of the experience, where pupils could show their previous experience, their personal identity and the goals or objectives they want to reach. This phase of the ePortfolio process was successfully managed reflecting and sharing among the course, about personal perceptions of attainments, conceptual meanings, and ideas and characters that inspired everyone. Following we present in a more qualitative way some of the evidences and reflections from the students.

Some of the reflections taken from the tool are presented; we chose the ones that clearly show the evolution seen from the student respected their own learning as their professional identity.

One of the students remark in their ePortfolio “The Mahara e-portfolio is an important finding, along my academic, professional and work. I have been recording, organizing all the material used in paper folders and subfolders out of there. This old paradigm is broken today with this portfolio. A new way to organize, record and share information, knowledge, learning, experiences, and socialize this process to be more transparent, more and more delight, is a boom that need a few days to process, admire, to contemplate and make it your own”.

One of the comments that show the phase to go to more autonomy on the student but at the same time some attitude stick to and old way of doing “Maybe I'm used to a training system that creates more dependence on facilitators and teachers, which it has cost me to adapt to this model. But in a nutshell, I was lost and confused about where to go”

All the students expressed what they thought about their professional area and how they identify with it. They explained in front of the group the goals that they have achieved both personally and in their careers, some examples included presentations of projects above including photos, videos, presentations, famous phrases of characters they admire.

ePortfolio promotes self-regulatory learning processes, as well as a more personalized tutoring of students. We found a relation with the level of expertise using the tool, the performance obtained measured by the frequency of writing, feedback, interaction and the level of development reflecting on their professional field.

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Gender Differences in ePortfolio Practice in Higher Education

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Abstract

Until recently, research on ePortfolio has paid little attention to the role of gender in perceptions and uses of ePortfolio in context of higher education. In view of a growing body of research indicating gender differences in perceptions and uses of ICT it appears important to consider gender-specific perceptions and uses of ePortfolios in higher education order to understand how these differences can be taken into consideration when designing and guiding ePortfolio practice. This paper explores possible gender differences in perspectives and styles of ePortfolio practice taking into account research and literature related to gender differences in ICT adoption and Internet use. The study is an inquiry into subjective re-/construction ePortfolio experience, which is methodologically embedded in post-modernist feminist research on gender and technology. The paper addresses the following questions: What are possible gender differences in perceptions and uses of ePortfolios and how do female students choose to work with ePortfolios? Insights from this qualitative, exploratory research point towards relations between personal experiences in technology use, subjective perceptions of own technical aptitudes and styles of ePortfolio practice. In examining gender-specific ePortfolio practice, the paper argues for a more in-depth research into gender, identity and ePortfolio use.

Keywords: ePortfolio, gender, higher education, digital media practice, reflection, artifacts, case study

Introduction

Gender based differences in digital media use and learning have long been recognised as an important focus for research (McSporran & Young, 2001; Taylor, 2004; Nsibirano, 2009). With numerous studies pointing to gender differences in access and use of ICT, including the use of ICT for learning, it becomes crucial to explore gender differences in relation to ePortfolio practice. Reported gender differences encompass a broad range of aspects, starting from the access to ICT, frequency and intensity of use, different types of ICT-supported activities, including learning, access to ICT training, through gender differences in synchronous and asynchronous communication, different perceptions of information security and online privacy, to different presentations of the self on digital media and different ways of constructing online identities (Hafkin & Taggart, 2001; Stockdale & Stoney, 2007).

Understanding gender and ICT use in context of ePortfolios has not been sufficiently reflected and researched. Only a few studies consider the role of gender, e.g. research on ePortfolios for women returning to employment, emphasising gender as a significant aspect in ePortfolio design (Herman & Kirkup, 2008). There are a number of approaches for examining the relations between gender and technology. This paper is based on the post-structuralist, post-modern perspective to feminist research emphasizing gendered construction of meaning in context and incorporating interpretation and subjectivity into research (Brooks & Hesse-Biber, 2007). Feminist research examines the relation between gender and technology based on the subjective construction of personal experiences and situated perspectives, often by means of in-depth interviews, favouring collaborative interviewing techniques, thus shifting away from the claims objectivity (Brooks & Hesse-Biber, 2007).

The purpose of this paper is to contribute towards a better understanding and awareness of gender differences in ePortfolio practice, linking ePortfolio use to individual perceptions of own skills and aptitudes and personal experiences, especially in relation to biographical uses of technology. This paper is guided by the following research question: *What are gender differences in perceptions and uses of ePortfolio and how do female students choose to work with ePortfolios?*

The next section gives an overview of current research about gender differences in the use of ICT, especially in relation to the Internet and web-based media. Next, gender-specific media practice and six digital practice styles introduced. Following this three risks of ePortfolio use

are discussed in relation to gender. Finally, three case studies of female ePortfolio practice in higher education are presented. The paper ends with a conclusion on gender-specific ePortfolio perspectives and practice.

Gender and Internet

A growing body of research provides an insight into how women and men differ in their uses of ICT. Research on technology adoption, for example, suggests that females lag behind males in adopting new technologies and are also more likely to perceive difficulties in using technologies (Venkatesh, et al., 2000). Research related to gender differences in Internet access and use indicates that men more often than women tend to be interested in technology and also more technology savvy (Fallows, 2005). These gender disparities are often linked to different media biographies, cultures resistant to female participation in ICT, and gendered ICT practice emerging already in schools. These and other gender differences in the use of ICT constitute a form of a digital divide (Nsibirano, 2009). Gender inequalities in Internet access and use have been termed as “digital gender divide”, often linking to gender differences in socioeconomic status, including education, income, and employment status (Bimber, 2000; Shaw & Gran, 2002; Simerska & Fialova, 2004; Nsibirano, 2009; Broos, 2011). Digital gender divide is especially wide in developing countries, where the use of the Internet is still limited to a small, mostly male, urban population (Hafkin & Taggart, 2001; Nsibirano, 2009).

With male students outnumbering female students in mathematics, technology, engineering and science, there have been a number of national initiatives worldwide attempting to close the ICT-related gender gap, e.g. Science, Technology, Engineering and Mathematics (STEM) in UK or Mathematics, Informatics, Natural Sciences and Technology (MINT) programs in Germany. The report by GWK (2011) documents the slow uptake of female students in technology and science in Germany and argues for the need of “*fixing the organization*” rather than “*fixing the woman*”. As frequently demonstrated by a number of researchers, not only computer classrooms tend to be dominated by male students but also web-based media, such as Wikipedia, may be to a large extent governed by men (Spender, 1995; Cohen, 2011). A number of recent studies examine gender differences related to the use of web-based media, such as Wikipedia, Facebook or Twitter. Cohen (2011) reported the dominance of male editors in Wikipedia with 87% male compared to 13% female editors, based on the 2009 Wikimedia Foundation survey of the English Wikipedia. Lam et al. (2011) explored this gender gap further and found out that that male and female editors focus on different content areas: Females editors concentrate in the people and arts areas, while males focus more on geography and science. Also the coverage of “female” topics in Wikipedia is inferior to coverage of “male” topics, with articles with high female editor concentrations being more contentious and females being more likely to be blocked by Wikipedia administrators (Lam et al., 2011).

However, the digital gender divide seems to be diminishing in recent years, which can be mainly attributed to the female uptake of social media. Tufekci (2008) explored the rapid adoption of online networking sites and showed that female users are more likely to participate in some social networks such as Facebook or Twitter. Other studies also confirm this worldwide trend. The study of Facebook users in the USA in 2010 showed that that 61% of Facebook users were women and 39% male (Watkins & Lee, 2010). More recently, the Nielsen report (2011) found that women are significantly more likely to engage with social media including Facebook and Twitter. Women are also more likely to be online, they are more active in online purchasing and they are more likely to represent themselves as digital personas (Nielsen, 2011). Similarly, research conducted by Sensis (2011) in Australia showed that females are more likely than males to use social networking sites and are much more likely to be frequent users, with females taking over on Facebook in terms of frequency of use and the number of friends. A similar situation can be observed in Europe. The national statistics in UK shows that access to the Internet has become well balanced between genders with 86% of men compared with 82% of women Internet users (ONS, 2012). Also in Germany women are catching up with 70.5% female compared to 81% male Internet users in 2012. The ComScore 2011 report took a global look at the Internet use and showed that women have become a digital global mainstream shaping the Internet today, with social networking sites reaching more women (75.8% in 2010) than men (69.7% in 2010) (Abraham, et al., 2011). In this context,

social media, similar to e-mail in previous decades, has been considered as an agent of social change, enhancing women's adoption of the Internet (Abraham, et al., 2011).

Gender and Digital Media Practice

Beyond the issue of Internet access and uptake, studies have looked also into *how* women and men use the Internet, addressing gender-specific practice. Based on some key research results in this area, six *digital practice styles* are proposed in this paper, expressing perceived gender-specific digital media preferences and uses. The six styles are poles on the continuums of three dichotomies, i.e. intensive-extensive, apprehensive-expository, and expressive-instrumental, each representing a spectrum of styles along which gendered digital practice can be situated.

Intensive and extensive media practice

The intensive-extensive spectrum of media practice relates to the *scope of media practice*, with the male style being more *extensive* (valuing broader, horizontal experience), and female style being more *intensive* (valuing deeper, vertical experience). While preferences for an intensive, deeper communication with a close circle of family and friends are viewed as "female", communicating with a broader range of person and looking for information on a wider variety of topics tend to be viewed as "male" digital practice. This distinction can be found in a number of research studies. For example, the PEW Internet Study in Northern America pointed to the following gender-specific patterns of the Internet use: While men tend to embrace more new technologies and use the Internet more widely (e.g. use search engines more often to explore a wider range of topics, participate in a greater number of activities such as checking news, performing online transactions, participating in auctions, trading stock, buying digital content, gathering material for hobbies, downloading music and videos, remixing files), women frame their online experience with a greater emphasis on nurturing relationships and pursuing personal interests (e.g. using email to share news, plan events or forward stories, inquire into key interest areas such as health and religion, use the web to get support and directions) (Fallows, 2005). Similar gender differences related to the use of ICT have been found in other studies, showing that female users tend to use the Internet to communicate with family and friends in order to socialise and foster relations (Taylor, 2004).

Apprehensive and expository media practice

The apprehensive-expository spectrum of media practice relates to the *access to media practice*, with female style being more *apprehensive* (valuing restricted access and privacy) and male style being more *expository* (valuing exposure and publicity). While preferences for communication in a protected environment and concerns about security tend to be associated with "female" digital practice, communicating in public and self-exposure tend to be viewed as "male" digital practice. Research seems to provide some evidence supporting this distinction. A number of studies showed that women appear generally more concerned about online risks and privacy than men (Fallows, 2005; Broos, 2011). Female users tend to display information privacy protection behaviour and reflect more about ethical issues like software piracy and copyright issues (Broos, 2011). Female users are more likely to express concerns about personal privacy and criminal uses of the Internet, including child pornography, computer viruses and computer hacking (Fallows, 2005). Women tend to fear more about employers monitoring their Internet activities and other people misusing their personal data (Fallows, 2005; Peslak, 2008). On the other hand, studies indicate male dominance in more expository uses of the Internet, such as public blogging or sharing videos on YouTube. Studies conducted by Yang et al. (2010) and Vedantham (2011) found significant gender differences in creation of online videos in YouTube: Male users are more likely to create and edit videos, while female users are less willing to spend their time on video creation (Yang et al, 2010). Research conducted in UK showed the unbalance between male and female political bloggers. The study comes to a conclusion that online political participation, such as writing blog posts or commenting on blogs, is usually male dominated due to potential public exposure and conflicts (Fallon et al, 2011). Female users are more likely to participate in covert political processes on the Internet, such as signing an online petition. Overt political participation like blogging is largely skewed towards men (Fallon et al., 2011).

Expressive and instrumental media practice

The expressive-instrumental spectrum of media practice relates to the *aim of media practice*, with female style being more *expressive* (valuing self-expression and self-reflection) and male style being more *instrumental* (valuing problem-solving and decision-making). While preferences for self-expression and self-reflection are associated with “female” styles of digital practice, using digital media instrumentally to solve problems or take decisions tends to be viewed as “male” practice. A number of studies, for example the ComScore 2011 study, showed that there are gender-specific motivations driving the Internet use. For example, even if the adoption rate of Twitter is similar for males and females, with females recently outpacing male users, men and women use Twitter for different activities. Women use Twitter more often to engage in conversations with others and follow celebrities, while men tend to post their own Tweets and read Tweets posted by others to get informed (Abraham, et al., 2011). In research conducted by Tufekci (2008) some Internet activities such as social interaction, self-expression, communication and content-creation were categorized as expressive practice, while activities such as online purchasing, looking for information or searching for news were categorized as instrumental practice. The current uptake of females users on the social media site Pinterest (68.2% female users in 2012) may indicate strong female participation on Internet media enabling expressive practice (Erickson, 2012).

Gender and ePortfolio

In analogy to gender-specific Internet practice, it seems plausible to inquire about gendered perceptions and uses of ePortfolios. Numerous researchers and educational practitioners have explored the value and potential of ePortfolios for planning, documenting and reflecting learning. Some authors also pointed towards the risks of ePortfolio. For example Reinmann & Sippel (2009) discussed ePortfolio risks in higher education, embedding “problematic” ePortfolio practices in context of research-based learning. Research-based learning as a concept referring to a variety of educational strategies linking research, teaching and learning, focuses on engaging students in learning by participating in the research process, such as conducting own research starting with the definition of research questions, through the design of research instruments, to the collection, analysis and interpretation of data (Euler, 2003; Reinmann & Sippel, 2009).

Reinmann & Sippel (2009) named three main of risks of ePortfolio practice related to research-based learning in higher education, arguing that the assessment of ePortfolios by lecturers and peers may lead to exaggerated compliance with rules, self-reflection and actionism. This paper empirically explores these three problematic patterns of ePortfolio use in relation to gendered ePortfolio practice. The three patterns of ePortfolio use investigated in this paper are:

- ***Over-conforming*** as pattern of ePortfolio use is related to strong compliance with specifications and assessment criteria, which have been established externally, e.g. by the lecturer. Over-conforming means taking on a “strategic approach”, i.e. adhering to pre-defined guidelines and requirements, at the same time neglecting personal criteria and judgments.
- ***Over-reflecting*** as pattern of ePortfolio use is related to the exaggerated reflective endeavour directed towards self-analysis and self-reflection. Over-reflecting means examining oneself or own situation in-depth, and at the same time neglecting the reflection of the subject-matter.
- ***Over-acting*** as pattern of ePortfolio use is related the excessive hoarding of ePortfolio artifacts. Over-acting means collecting larger numbers of artifacts as evidence of own expertise, at the same time failing to meaningfully select artifacts and relate them to learning goals. This use pattern may hinder reflection and in-depth learning, by avoiding mistakes.

Based on the gender-related styles of digital media practice, this study views the three patterns of ePortfolio use described above as manifestations of these broader digital practice styles, such that over-conforming can be considered a manifestation of apprehensive practice and over-reflecting of the expressive practice, both associated with “female” styles, while over-acting can be considered as a manifestation of the extensive practice, which appears to be a “male” style of digital practice. The study described in the next section explores whether over-

conforming, over-reflecting and over-acting can be observed in female ePortfolio practice and how they relate to broader styles of media practice.

Context and Method of Study

The exploration of gender-specific perceptions and uses of ePortfolio was conducted by means of qualitative research methodology integrating in-depth interviews based on the post-structuralist, post-modern feminist research emphasizing the creation of meaning in context (Brooks & Hesse-Biber, 2007). The study was conducted at Beuth University of Applied Sciences in Berlin, which is considered as a gender-balanced technical university with the 20.6% share of female professors and 29% share of female students. For the purpose of the study three female students were chosen randomly to participate in in-depth interviews towards the end of summer semester 2012. All three students attended a course related to media research, in which ePortfolios created with Mahara were used as a method and tool for supporting research-based learning. Students conducted own research projects in small groups of students and documented the process and the outcomes of their research projects in Mahara as part of the course work. The study encompassed semi-structured interviews aiming at the reconstruction of ePortfolio perceptions and practice.

The questions used in the interviews related to the broader styles of digital practice and to the three risks of ePortfolio use and were structured into eight thematic groups. The cooperative interview style allowed adjusting the flow of the interview to individual student perceptions and uses of ePortfolio. The questions listed below were used as springboards for the inquiry of individual ePortfolio practice.

ePortfolio experience:

- How much experience did you have in working with ePortfolios prior to the course?
- How much experience did you have in using digital media prior to the course?
- ePortfolio media use:
 - How did you use digital media in the course to create your ePortfolio?
 - How difficult was it for you to use digital media? How did you solve problems?
- ePortfolio specifications:
 - How did you use the specifications related to working with ePortfolios? What was helpful?
 - How closely did you follow the specifications related to ePortfolio use in the course?
- ePortfolio artifacts:
 - How did you choose, collect, select and present the artifacts in your ePortfolio?
 - What type of artifacts did you collect and present in your ePortfolio?
- ePortfolio reflections:
 - How did you approach the reflection part in your ePortfolio? What did you reflected upon?
 - How did you feel about reflecting in your ePortfolio? Was reflection helpful and why?
- ePortfolio communication:
 - How did you communicate with peers in Mahara? Was communication with peers helpful?
 - How did communication (sharing, feedbacks) in Mahara influence your work on ePortfolio?
- ePortfolio privacy:
 - How did you feel about making some parts of the ePortfolio visible to peers and to the public?
 - How do you prefer working with ePortfolios in terms of privacy and publicity?
- ePortfolio value:
 - How do you view the value of ePortfolio for learning, especially research-based learning?
 - How do view the value of ePortfolio as learning assessment method?

Female case studies

This section describes three case studies based on the students' insight into the eight thematic fields addressed during the in-depth interviews. The case studies explore gender practice related to over-conforming, over-reflecting and over-acting as manifestations of the broader styles of digital practice. The texts have been paraphrased as self-narratives to reflect subjective perspectives and experiences of the three female students. All names used in case studies are pseudonyms.

Case study "Ella"

I am a 29 year old bachelor student of Media and Computing in my 6th semester.

ePortfolio experience: I did not have any experience with ePortfolio or web 2.0 before the course. Before I only used Facebook and Google Plus. In the course, I started exploring what ePortfolio, Mahara and web 2.0 were about. My first association was that ePortfolio was something I could use for my career, something like a CV. I was surprised to find out that ePortfolios can be used for documenting learning, projects and group work. I have been always fascinated by new technologies. I grew up with the Internet. My *interest for technology* started with my A-levels. I took information technology as a major and discovered that it was my thing! I soon realised that I was talented but I also wanted to do something creative, something like digital art. So I decided for art as my second major.

ePortfolio media use: Already at school I was the only female student in my computer class but I soon noticed that my performance was much better than that of male students. I was better especially on the design level, but I was also better in inquiry, structuring and producing content. While male students focused more on programming and on the functional level, I investigated topics in-depth and was more into content and design. I have noticed the same difference at the university. I tend to focus more on what users need and on the design, while male students focus on functions, programming features. They first want to solve a problem on the functional level and if they have some spare time they do the design. Female programmes work the other way round. They *integrate design, content and functional aspects*. I also used these skills in my ePortfolio. I could quickly learn how to work with Mahara and other new tools like blogs. I enjoyed doing this, especially creating content on my own. From my experience, I can say that male students don't produce much content, they don't collect many artifacts. They first wait what the others do. They react instead of acting. So, I took over the ePortfolio content and design.

ePortfolio specifications: What I enjoyed in ePortfolio work was to have complete freedom. I like to take *full responsibility for my learning*. I like it best when I can decide what I want to learn and what not. I enjoyed *freedom to do my own research* and decide about the focus of the study. I always want to fight for my own grade and I do not like to be limited by specifications. If I have too many specs, where I cannot decide about anything and I do not learn anything. So I really liked the freedom to decide about the design, topics, content and organisation of my learning. Some guidelines were helpful though. For example it was good to know about possible topics for the research project and to have a general time frame with milestones. I also appreciated that we had to work with Mahara in the course. I think today we all have to learn how to use such tools for our learning and work. It was *very, very important for me to comply with these specifications*. I want to get good grades, and I think it is not only me. I think all students function like this. If the lecturer says something has to be done in this way, I follow and comply with this. I think this way of thinking starts already at school. The specifications about Mahara and topics for research were good and they gave me a chance to do my own research. I have a feeling I researched a lot and found things about which I have never heard before. I really learned a lot.

ePortfolio artifacts: This is what I find great about ePortfolio - *I can first collect everything in my ePortfolio* and don't have to worry about selecting. I can first collect and aggregate all I can find on a given topic and then select and filter what I find most useful. In my work with ePortfolio I first collected everything I found related to the topic and then selected most valuable artifacts. The decision about which artifacts should be presented in the Mahara view, were taken in the group. We met face-to-face, discussed and took decisions collectively about which artifacts best fit to our project idea. In my work with ePortfolio I first collected as much as I could to understand the topic but then with time it was more important for me to focus on

a selected aspect and explore it in more depth. *I like to inquire in-depth* rather than include a little bit of everything. If you cover too many aspects you don't learn much!

ePortfolio reflections: I don't think that reflecting is important for learning. I would not like to have to reflect in the process of research-based learning, I think it is good to reflect at the end of the course, but during the semester I would not have time to reflect. I think it is better to have discussions rather than ask students to write their individual reflections in ePortfolios. When it comes to reflection I find it important to reflect on my own learning goals. I would not like to reflect on the group process. I am always a bit afraid how the others react if I criticise something. I have already experienced an unpleasant situation in my studies, because I criticised someone. Students know they should not criticize one another in front of the lecturer. That is why reflection about team work is difficult. Nobody wants to say negative things.

ePortfolio communication: I liked to work with others, but the whole environment was new to me so I did not use many communication and sharing functionalities at the beginning. Later I only used them directly in my team. It was good to communicate in Mahara forum about the progress of group work. I also communicated with some other students from the course but it was not much. We could probably do more, for example help each other, share links and resources. I think the cooperation functionalities in Mahara have been used too little and I wished there was more conversation going on. I think students should support each other and I also think it is good, when the lecturer is part of the Mahara forum. In this way the level of conversation is better, but also maybe that is why not so many students use it.

ePortfolio privacy: I did not like creating the imprint for (my name, address, e-mail) my public Mahara view and I am surprised about this legal regulation in Germany. My insight from working with ePortfolios this semester is that I can present myself better online and I can show what I can. I prefer open work with ePortfolio and *I like making things visible to public.* I think that making things public adds value to my work. Things that I do at the university normally remain unseen and when I work with ePortfolio I can show what I have done and what I have learnt. I can control it and I can influence it. I like using the Mahara view as a starting point from which people can explore my other profiles and websites. *Publishing on the Internet influenced my work.* I think this made me work more and better. I wanted to present our group work in the best way as I knew other students and people on the Internet can view it. It motivated me to work better. I felt if it is public, I have to present myself better, because others, even potential employers can read it. In this way I could design my online identity much better. Now when I google myself I can see the Mahara view on the top of search results. This definitely improved my digital identity. The best part of it was that I got an internship at a company which was looking for people with social media skills. They saw my Mahara view!

ePortfolio value: With ePortfolio I could learn faster and more effectively. I could see my own learning process because I documented all steps. I could always start where I stopped last time. I could read my own thoughts and modify things. I have a feeling I've learned faster and better. My ePortfolio also helped me organise my learning and work in the group. I could set my own agenda and organise materials. I could also communicate with others without having to meet everyone in the group all the time. I could present myself, what I learnt and my competencies and I got an internship. I can always come back to my view and I can use the content I produced even after the course is finished.

Case study "Alexia"

I am a bachelor student of Event Technology in my 7th semester.

ePortfolio experience: I have never heard about ePortfolio before. I got very interested in ePortfolio work and I discovered this could be something I could use for my bachelor thesis. I first found it difficult to use Mahara but it got easy with time. Mahara was all new to me, but I liked to work with Mahara, also in the group, where everyone could see and edit the same view. This made our group work much easier. I had very little experience with social media. I actually do not use social media at all. I even do not have a Facebook account. I have never written a blog myself but I have friends who do internships abroad and write blogs. I find it very useful, because it helps me to stay in touch with them. In general, I am not afraid of technology. As a child I always did some technical work at home, such as repairing a clock or a bike. I am also active on the Internet, but I mostly search for information or read forums. I rarely write on the web or produce my own content. What I use mostly is Dropbox.

ePortfolio media use: I learning Mahara was learning by doing. I did not ask anyone for help. It was trial and error and I enjoyed trying it out! I have good technical skills and my studies are also about technology. I have a good understanding of different systems and I can learn fast how a new system works. *I have developed a strong interest in ePortfolio because I am looking for a possibility to work on my bachelor thesis.*

ePortfolio specifications: I found it helpful to get some specifications at the beginning of the course, because I could not work with the Mahara so well. Later on I did not need many specifications, because I could work with the system myself. So specifications were very important at the beginning of the course. I first *strictly complied with the specifications* which we received and I first made what was required. But what I enjoyed later was the *freedom to choose my own design and topics*. I prefer working like this - getting specifications at the beginning and then getting more freedom later. Free, open working at the beginning would not be good for me, because my skills and my understanding were not sufficient. I would prefer a middle way just as I experienced it in the course - I could choose the design but some things like elements of the ePortfolio were pre-defined and it helped me to get into it. I enjoyed having alternatives and to choose between the alternatives.

ePortfolio artifacts: I mostly used texts and pictures, only a few videos as artifacts. Some widgets in Mahara did not work and I could not find out why. I did not collect many artifacts in Mahara and I had most things on my PC. I uploaded only these artifacts that fitted best to my projects. I started to collect and search for some other artifacts, but I did not include them in my ePortfolio because I wanted to do what was expected from me. So my general strategy was to do what was required from me. That is why I don't have many artifacts in my ePortfolio.

ePortfolio reflection: *I liked reflecting my own learning goals.* I think the reflection is important for you to learn about what students think and what they learned. I would say I needed more reflection phases in between as sometimes there was so much input that it would be good to reflect more in the process of group work. I also reflected for myself at home. I looked at the slides from the course and took time for my own reflection, which I did in my head.

ePortfolio communication: I found group work really hard at the beginning as I did not know other students. I found that the communication in the group was not sufficient. I could not ask other students for help until I realised we could use forums in Mahara. I think the communication in the Mahara group was extremely important for the group work and it made group work much easier in the later phase. In my group we also used Skype. Also feedback from other students was very motivating and I think this is important for ePortfolio work. In general, I enjoyed group work a lot and I learned a lot through working with others. I was lucky that the group work went well and everyone was contributing. I really enjoyed it!

ePortfolio privacy: I did not like the idea personal branding and I do not like to present myself on the web. I do not use Facebook because of privacy. Making Mahara views visible to others did not influence my work because I was working for myself and I was not concerned with others seeing my views. But I spent more time on the design to make it nicer so that the others could get a good impression about me. I don't have any problems with publishing on the Internet as long as I do not have to reveal anything personal. So all in all I liked to put my Mahara views online, but if there were personal things, I would not like to share them. I would never post my hobbies, address or my telephone number. *I protect my privacy.* What I like about Mahara is that I can share my views with selected people or groups and I don't have to put everything on the Internet.

ePortfolio value: I liked working with ePortfolio. It was something different to what we do every day at the university. I think it is also a good alternative to tests at the end of semester. I could work throughout the semester and did not have to do everything at the end of semester. This took much test stress away from me. But I am afraid some students copy and paste or copy ideas from others and this is not fair. The ones that did work at the beginning did something that others can copy.

Case study "Leila"

I study mathematics in my first semester at Beuth University.

ePortfolio experience: I did not have any experience with digital media before. I only used Power Point to present my ideas, or I linked to YouTube videos. I have never worked with

blogs, wikis or ePortfolios. In general I like digital tools and media. I think they make work more interesting and I can present things better. I can show what I have done. I want to improve my computer skills in my study.

ePortfolio media use: At the beginning it was hard for me to start working with Mahara. I got much support from my group and now I can work with Mahara pretty well. On the first day I spent the whole evening trying to understand Mahara. I think if I spent three evenings more then I would know how Mahara works without the help from others. In our group, we first met at the university and talked about the topics for our research and who will take responsibility for what. One person created a Mahara view. We also used Facebook to communicate. I think Mahara is good to present the process of group work, we could show how we worked in the group and what the steps were. But at the moment I cannot imagine how I could use it in the future.

ePortfolio specifications: I wish there were *more specifications* on how to use Mahara and create views. I wish there were more specifications on designing ePortfolios. Specifications are very useful to plan own work. My intention was to *comply with the requirements and guidelines*. Also the aim in our group was to comply with the specifications. I think we had enough freedom to decide about the design. We could take our own decisions. But I think too much freedom is not good. I need guidelines to know if I go in the right direction.

ePortfolio artifacts: I collected many artifacts and searched for many resources on the Internet together with other group members. I collected artifacts to present what I learned.

ePortfolio reflection: I like the idea of reflection in ePortfolio because in this way I know how it was before and how it is now, what I knew at the beginning of the course and what I know now. I liked to reflect on my own learning goals. Group work could also be the part of my reflection.

ePortfolio communication: We worked really well in the group. We divided tasks and helped each other. Everyone was asking permanently what the next steps were and we were communicating on Facebook every day. Making Mahara views visible to the public was not so important to us, because it was important to us to focus on our work. If I worked alone I would have many concerns about the quality of my work, but because we worked together and everyone was reading and editing I could trust the quality of what we created. Also, I would like to get more feedback from instructors and peers because they have different perspectives and this would help with my work.

ePortfolio privacy: I did not have any concerns about privacy. We put our names to it and we have nothing to be ashamed of. We did good work in the team and we can show to the public. I think ePortfolios can be sometimes private and sometimes public. Private will be good to get feedback from the group. Public is good to present what we have done.

ePortfolio value: I think ePortfolio was better than a test. I could work in my own pace and in this way in better quality. I had no remorse like I have when I take an exam and I think I could have done more. With ePortfolio I know that I had time and peace of mind to show what I have done and what I have learned.

Discussion and conclusion

The analysis of the three case studies presented above allows identifying some preferences and needs for ePortfolio practice of the female students interviewed for the purpose of this explorative study:

- **ePortfolio experience:** All three interviewed female students had no prior experience with ePortfolio and also little experience in productive use of digital media, including writing blogs or creating other digital content. However all three students perceive themselves as skilled in using and understanding technology. All students overcame the initial hurdle of working with the new system, sometimes by trial and error, sometimes with the help of other students.
- **ePortfolio media use:** The insights into media use reveal that female students focus strongly on the design aspect of ePortfolio practice. It may be that comparing to male students, who were reported to focus more on the functional aspects. Female students

tend to pay more attention to the content and the visual side of ePortfolios than male students.

- **ePortfolio specifications:** All three female students reported complying with the external specifications for ePortfolios practice and all them considered such specifications useful. However, all three students appreciated certain degrees of freedom, especially in relation to ePortfolio design. Two students expressed a strong need for specifications to help them with ePortfolio practice. This could indicate a tendency for *over-compliance*. It remains unclear, however, whether the need for and compliance with specifications can be considered as gendered practice or whether this presents a general effect of socialization in the education system. This aspect has to be explored in more depth in further studies.
- **ePortfolio artifacts:** Only one from three students reported collecting a greater number of artifacts. *Over-acting* could not be manifested by the other two students. This could support the hypothesis that over-acting tends to be rather a “male” practice. This aspect, however, has to be explored further in comparison to male perceptions and uses of ePortfolio.
- **ePortfolio reflection:** All three female students reported on the perceived value of reflecting about own learning goals. However, a tendency towards *over-reflection* could not be identified. This aspect has to be explored further in relation to different course designs but by means of additional research methods.
- **ePortfolio communication:** All three female students reported on the perceived high value of communication as part of group work on ePortfolio but also in relation to communication with other students in the course, including getting support and feedback. This is in line with research demonstrating female preference for communication and cooperation, which may indicate a tendency towards *intensive media practice valuing personal relationships*.
- **ePortfolio privacy:** None of the interviewed students reported difficulties in publishing their ePortfolio views online, under the condition that no private information is revealed. In this sense all three students indicated a strong need for protection of private sphere, which may indicate a tendency towards the *apprehensive media practice style valuing privacy*.
- **ePortfolio value:** All three students reported on having explored value in ePortfolio work, especially in relation to such aspects as supporting own learning and learning organization, reduced exam stress at the end of semester, presenting oneself online, but also in relation to more instrumental aspects such as finding an internship or finding a method for organizing the process of writing a bachelor thesis.

To sum up, it seems that female students may be inclined towards paying more attention to the design of ePortfolio, communication in the group, reflecting about own learning goals and complying with ePortfolio specifications. All female students had difficulties working with the new system, but found ways to overcome this barrier. It appears important to consider these gender-related preferences for ePortfolio use when designing work for ePortfolio in higher education, especially when it comes to initial media literacy, specific preferences for design and communication, but also the need for reflection and privacy as part of ePortfolio practice. Based on the three case studies presented in this paper, it remains yet unclear whether these preferences reflect some general gender-specific tendencies in ePortfolio practice. This question should be explored in more depth in further research, taking into account additional research methods, such as ethnographic or biographical methods, allowing for a more comprehensive understanding of the gendered practice. Further recommendation includes conducting longitudinal studies with a larger sample to explore reoccurring patterns of gendered ePortfolio practice and to obtain more representative results. In this sense, this study presents the first, explorative step towards understanding gender differences in ePortfolio practice in higher education.

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Reflecting on a Predicament of Professional Identity

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Background

Professional and effective early childhood teacher/educators have the opportunity to advocate, through their own teaching practices, for the development of high-quality learning communities that clearly articulate a professional teacher identity (Rodd, 2006). The Australian Catholic University (ACU), with campuses spread across four separate legislative state and territory boundaries, mandates the development of an ePortfolio within its teacher education courses. Whilst mandated, the development of the ePortfolio within the Bachelor of Education (Primary) course features predominately in the first and final year, in preparation for the pre-service teacher's transition into the teaching profession. The introduction of a Bachelor of Education (Early Childhood and Primary) course, in 2008, afforded the opportunity to develop a coordinated approach to the development of the ePortfolio, spanning across the four years of the course and culminating in the final year. This coordination has yielded a critical focus for both the academic staff and the pre-service teachers to make creative use of a variety of Information and Communication Technologies (ICT) to demonstrate their pedagogic strengths, to identify the pre-service teacher as meeting a variety of legislated requirements for teacher registration, and to meet the University's mandated course requirements. It has also provided a platform from which to promote the professional identity of the Early Childhood teacher in a more traditional socio-political climate where teachers are still classified as those who educate children in formal school settings.

Objectives

As each year unfolded, from 2008, the academic staff took the opportunity to fine-tune the ePortfolio, clearly establishing the following aims were to:

- Establish the professional identity of those who educate children in prior-formal-school-settings as teachers.
- Encourage academic staff and pre-service teachers to consider a variety of ePortfolio platforms, ranging from internal ICT to external Web 2.0 in order to substantiate their developing professional identity to a wider, potentially global, audience.
- Investigate ways in which such digital approaches both connect key information to the pre-service teacher's own local experiences and enables clear university-wide outcomes for academic staff and students to be met (Ramsden, 1991; Augar, Raitman & Zhou, 2004; Chapman, 2008; Murphy, Casey, & Fraser, 2007).

Approach

Action Research is like breathing to an effective Early Childhood teacher, whose every moment is filled with a critical reflective practice. This is described simply as the cyclic collection, analysis and interpretation of data that is interwoven with outcomes from previous reflective cycles. The emergence of the Early Childhood course began with, and has maintained, a continuous sifting and sorting process to evaluate and sustain effective practices in a number of strategic teacher education domains:

- Evolving – encouraging a culture where the gradual and natural collaborative process continues to evolve an understanding of the professional identity of an Early Childhood teacher.
- Efficient – the deliberate integration of digital technologies to deliver an engaging teaching and learning program.
- Effective – where standard course review processes are harnessed to identify a coordinated approach to the development of a Professional ePortfolio that creatively charts each pre-service teacher's learning, demonstrates their achievement of professional standards for teaching, in a manner that meets the requirements of four different state and territory requirements for teacher registration and teacher course accreditation.

Reflective narrative

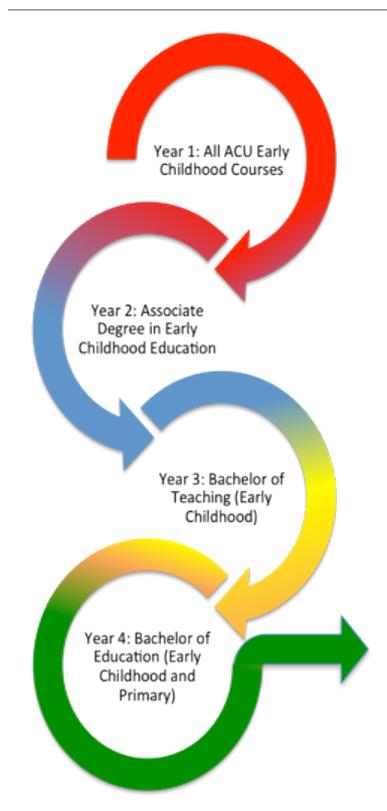


Figure 0

Since 2008, the Australian Catholic University (Canberra Campus) has offered a series of three nested early childhood education courses. The main course is a four-year teacher education course accredited to provide graduates with both primary and early childhood teacher qualifications. This is no small matter. When the courses were developed, there were no accredited four-year training programs for early childhood teachers. In Australia, to qualify for four-year trained teacher registration, a graduate must have successfully completed either: an accredited primary teacher education program, or to have first completed a three-year Bachelor Degree and then undertaken an accredited two-year of post-graduate program in secondary teacher education.

The structure of the Bachelor of Education (Early Childhood and Primary) was the only way to meet the legislated requirements for both an early childhood qualification AND a four-year trained teacher registration. The nested course was quite intense, with the early childhood qualification being completed by the end of the first two years and the final two years meeting the remaining requirements for graduates to be registrable as a four-year trained primary teacher. From the onset, it was the University's expectation that the students were to progress through two quite separate cycles of teacher education: first the early childhood educator and then the primary teacher. The 80-day early childhood Professional Experience Program contained its own beginning phase (red), a graduate phase (blue) for the Associate Degree that was also an intermediate phase (blue) for the Bachelor of Teaching with its own graduate stage (yellow) as illustrated in Figure 1. The end of the first two years marked a significant transition for the students as they complete the early childhood qualification and moved 'seamlessly'

on into the last two years that would conclude with their four-year primary teaching qualification.

Initially, the first two years of the ACU early childhood courses divided the Professional Experience Program into eight clusters (domains) for the Early Childhood qualification: The Workplace, Leadership and Management, Caregiving, Play and Development, Children's Health and Safety, Communications, Planning Programs, and Supporting Diversity. These clusters were developed from the legislative authority for Community Services, not Education. Each of the clusters held a number of competencies as articulated by the Australia's National Training Authority as leading to the achievement of a CH50302 Diploma of Children's Services, now CHC50908 Diploma of Children's Services (Early Childhood Education and Care). The Diploma was viewed not as an academic program but as a vocational program. The final two years of the course utilised the same professional domains as the Bachelor of Education (Primary): Professional Knowledge, Professional Practice, Professional Values and Professional Relationships. However, by the end of 2009, the Canberra campus had remapped those vocational competencies into those same professional domains of the Bachelor of Education (Primary). This marked the beginning of a significant shift in the professional identity for the early childhood student; acknowledging that the competencies being achieved for the Diploma of Children's Services also contributed to the graduate professional standards for a Bachelor of Education.

As each year unfolded, a number of significant political and legislative events encouraged further examination of the way that the academic staff represented the professional identity of the early childhood teacher within the ACU Early Childhood courses, see figure 2. With each year's new cohort of students came a new stage in the unfolding national political reform agenda; forcing each cohort and the academic staff to conceive a new vision for the professional identity of an individual within the Early Childhood sector. We actively encouraged the deliberate professional dialoguing between all the participants within the Professional Experience Program: the early childhood academic staff, the students and the industry hosts within the childcare industry. With this level of participation, over the years, came an evolution of professional understandings, with the student's exposure to political initiatives came their own emerging professional identity as a 'teacher' rather than 'educator', which was how the original ACU's course documentation referred to them.

With our collaborative reflective practice now well embedded into the Professional Experience Program, each year became the opportunity to re-map the how we represented the professional identity of the first two years of the four-year course. This process was managed through a number of formal and informal mechanisms, to ensure a critical responsiveness of the Professional Experience Program to the rapidly changing academic, political, legislative and industrial landscape. The reflexivity of the course meant that across the ACU four campus locations the Early Childhood courses were each evolving a different structure that positively responded to the individual state and territory legislative processes and in response to the University strategic and financial directives.



With the introduction, in 2011, of the ACT Teacher Quality Institute (TQI) came a new era in teacher education for the territory, marked by a collaboration between ACU and the University of Canberra (UC) in creating a common framework to guide and support all stakeholders who would be participating in the Bachelor of Education (Primary) Professional Experience Program. For ACU, the Bachelor of Education (Early Childhood and Primary) was not included in the initial thinking.

Finally, towards the end of 2011 came the decision to remap the competency-based Associate Degree in Early Childhood Education into the newly released National Professional Standards for Teachers. Which, when combined with the decision to include the new framework and reporting mechanism devised for all Bachelor of Education (Primary) students, built a credible professional identity for the pre-service teachers as teachers of very young children. The adoption of the new framework brought about a new vision that illustrated the Bachelor of Education (Early Childhood and Primary) students as going through two complete cycles of professional teacher education: each containing a beginning phase (blue), an intermediate phase (orange) and a graduate stage (green) as illustrated in Figure 3. The end of the first two years still marks a significant transition, for the students, as they complete their early childhood qualification and commence an enriched degree of teaching practice that would conclude their four-year primary teaching qualification.

Throughout all of these years, the development of an ePortfolio has been a stable element within the early childhood Professional Experience Program. With the exit-point for the Associate Degree in Early Childhood Education came the University's mandated requirement for a presented professional learning ePortfolio. In terms of efficiency, we required the ePortfolio of all early childhood students regardless of the course in which they were enrolled. This was easy to achieve, as the first two years contained a 90-day Professional Experience Program that was focussed upon the development of a strong, reflective teaching practice. The students were observing, creating teaching resources, planning, implementing and evaluating play-based learning experiences for children aged five years and under. Initially, the platform was based upon

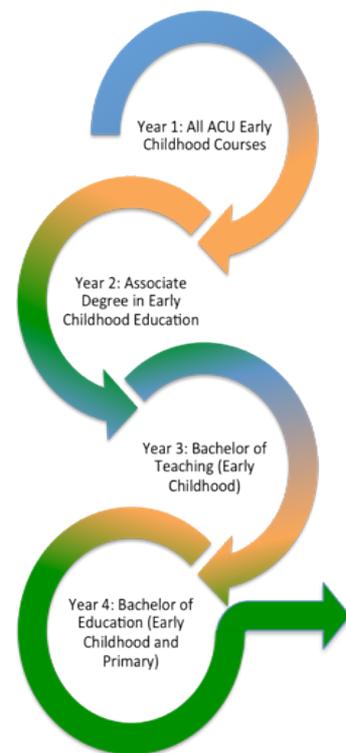


Figure 0

wordpress.com ® in the first year, and opened up to other web-based platforms in the second year. With the academic shift into the focus on primary teaching, there was no opportunity for the early childhood staff to continue their embedded ePortfolio program. The ePortfolio, for ACU's Bachelor of Education (Primary) course, was developed and graded as a component of a fourth-year primary education academic unit, called Transition into the Profession.

The constructivist approach is implemented through a number of different mechanisms. Firstly, there are a number of Professional Experience Program workshops that are specifically aimed at introducing the concept of an ePortfolio, the benefits of using digital technology, what it can be used for and how one could be crafted through using existing resources, for example: assignments, teaching resources, and various Professional Experience Program reports and documents. Secondly, the development of the ePortfolio is also embedded into four academic units, one per semester for the first two years of the ACU early childhood course, each with the following foci:

- The exploration of caregiving as teaching (Professional Knowledge) with infants in childcare.
- The development of holistic intentional play (Professional Practice) with toddlers in childcare.
- The building a continuity of learning (Professional Practice) with preschool-aged children in childcare.
- The commitment to building community (Professional Engagement) with preschool-aged children in primary school.

We insist that the ePortfolio is to be a crafted through a natural flow between the student's learning and their participation in the Professional Experience Program. We encouraged the use of original artefacts and for the student to annotate their meaning for their individual professional development. This created the opportunity for the student to reflect in a critical manner upon his or her own developing professional identity. Believing that we were contributing to an emerging global professional community, the students were introduced to the benefit of placing their ePortfolio onto the Internet, we achieved this by using Wordpress.com ®. This was introduced from the beginning, paying strict attention to privacy, ethics and the protection of their artefacts.

In 2012, due to timetable challenges, an early childhood academic staff member undertook the delivery of the fourth-year unit, Transition into the Profession, for those students enrolled into the Bachelor of Education (Early Childhood and Primary). This afforded the opportunity to conclude the constructivist approach to the development and final assessment of an early childhood professional ePortfolio. Using a blended teaching approach, the unit utilised 3 assessments that supported and scaffolded the learning from the first through to the last. The specific aim was to encourage the student to work in a constructivist manner that would support the beginning of their emerging professional selves (Ramsden, 1991). Visiting speakers were lead teachers, specialists in inclusive education, early childhood directors, and primary school principals all from a variety of educational sectors. The first assessment required students to set the pace and take the lead in developing a series of professional dialogues based upon the National Professional Standards for (Teaching Murphy, Casey, & Fraser, 2007). The second was the formulation of a Professional Development Plan, without the provision of a strict ACU Proforma, but developing their own through reviewing education department websites that simply stated the current expected structure and required standards for a graduate teacher (Augar, Raitman & Zhou, 2004). The final assessment was the development of an ePortfolio, which used a maximum of four artefacts to demonstrate the student's achievement of the 7 standards of the National Professional Standards for Teachers. The ePortfolio was not restricted to any particular platform, stating only that what was to be submitted needed to be accessible by the lecturer's own available technology. The students were given freedom to use their own judgements, regarding technology, content and approach, with the objective that they would utilise their current funds of knowledge to support the outcomes of the assessment task (Chapman, 2008). This approach sought to engender within the students a feeling of high degree of wellbeing and involvement through their autonomy and a reflexive style of teaching (Laevers, 2008).

Of the ePortfolios submitted for assessment, the following observations were made. 12% were built within Microsoft word, where the students struggled with the development of bookmarks and hyperlinks between the document and PDF's of the artefacts. 25% remained with the initial blogging website. 63% opted to utilise a newer form of website authoring software. Most students discarded their second-year ePortfolio preferring to start from 'scratch' and utilised artefacts derived from their Primary Professional Experience Program. Very few students chose artefacts from their Early Childhood Professional Experience Program. Interestingly, where a student did utilise an artefact from the years prior to formal schooling they consolidated their achievement of the National Professional Standards for Teachers by using some form of

planning document from the lower Primary grades only. Most students used slideshows or movie footage to support their planning documents. Most students used pristine condition text documents in preference to scanned images of original planning documents (complete with scribbled anecdotes, jottings, observations, reflective practice and mentoring teacher feedback). This preference for pristine word-processed artefacts was in spite of the authenticity of the original planning documents. Very few used an artefact more than once, preferring to have something different to speak to each of the demonstrate each Professional Domain with separate artefacts.

To use the submitted ePortfolios to determine the perceived professional identity of these fourth-year preservice teachers, it would appear that all of them have pitched that identity firmly within the first years of Primary School. It appears that despite the raised legislative, political, educational and academic profile of the Early Childhood sector, the pre-service teachers did not chose to use artefacts that were derived from the years prior to formal schooling. Interestingly, for all of the artefacts the annotation or discussion in presenting those artefacts drew heavily from the observation and the reflective practice of the years prior to formal schooling. All discussed the pedagogic principles of holistic caregiving as teaching and the critical role that relationships play within the classroom.

The author's own reflective practice would ask if it were possible to use the ePortfolio on such a small sample to determine a shift in professional identity? Obviously further cohorts would be required to determine the degree of confidence that student's have to utilise artefacts that are derived from outside formal school settings, such as: childcare, preschool or even outside of school-hours-care to demonstrate their professional competence. Or whether the students prefer to pitch an ePortfolio towards an employment prospect that lies mainly within primary education, with its far more attractive employment conditions and remuneration. The progressive instruction on how to structure the ePortfolio, what artefacts to choose in order to 'speak' to the target audience, how to use those artefacts in a complex manner would have had some degree of influence on what artefacts to choose. Watching future cohorts and noting the evolution of the ePortfolio within the course, may become a barometer of confidence in a professional identity that is still being shaped.

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Implications of Identity Negotiation Research for the Design of the TRAILER e-Portfolio

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Introduction

E-portfolios come in many forms and serve a range of functions and purposes (Chi-ChengChang, Kuo-HungTseng, Hsiu-PingYueh, & Wei-ChienLin, 2011; van Tartwijk & Driessen, 2009). For the argumentation followed in this paper it suffices to distinguish three general functions, related to the learning process, to assessment, and to presentation (Abrami & Barrett, 2005). Clearly, the three functions are interrelated and even suggest a chronological order: assessment follows learning and precedes presentation of evidence (assessed achievements). However, presentations might also precede assessment, as becomes evident when we consider the role of e-portfolios in documenting and demonstrating informal learning. Presenting evidence for informally acquired competences through a showcase portfolio (presentation) is likely to prompt some level of assessment on the part of the audience: how convincing a 'piece of evidence' is this?

From the above it is clear that one way of looking at e-portfolios is to view them as a means to document personal development in view of communicating one's competences, interests, ambitions, networks, etc., that is as a means for identity negotiation. Identity negotiation refers to "*the processes whereby relationship partners reach agreement regarding "who is who."*" (Swann, Johnson, & Bosson, 2009). The notion of identity negotiation in combination with an e-portfolio's function of showcasing competences gained through both formal and informal learning reveals an interesting paradox: whereas it is relatively easy to demonstrate competence attained through formal learning, they are at the same time less 'telling' of a person, exactly because they are formal, i.e. 'standard'. However, face validity of showcased competences attained through informal learning is much lower, as it relies on two processes, which both suffer from serious flaws: self-assessment (Dunning, Heath, & Suls, 2004) and selection of appropriate evidence to showcase a particular competence (Miao, Sloep, Hummel, & Koper, 2009). Thus showcasing competences attained through informal learning to some extent relies on establishing a sense of trust/trustworthiness which in turn requires a certain level of identity negotiation (Rusman, Van Bruggen, Sloep, Valcke, & Koper, 2012).

The TRAILER project (Tagging, Recognition and Acknowledgment of Informal Learning Experiences) aims to facilitate the identification of episodes and evidences of informal learning by the learner in any of the different spaces in which she learns, with the further aim to facilitate the recognition of this learning, e.g. by a tutor, employer, educational institution, in dialogue with the learner. It aims to do so by means of an *Informal Learning Collector*, which interoperates with an existing open source portfolio.

This paper focuses on the question how to design an e-portfolio so that it optimally enables learners to gain credit (either literally or figuratively speaking) for competences attained through informal learning starting from the premise that this process can be considered an identity negotiation process. It provides a review of research findings in the area of identity negotiation and online identities in light of the implications they hold for the design of an e-portfolio that is meant to facilitate identity negotiation.

Online identity and identity negotiation

We all have an image of who we are and what we are capable of and we want others to perceive us in line with the image we have of ourselves. Our identity, our image of ourselves is closely linked up with our competences:

“The process of maturation is marked by the acquisition of new competencies and the loss of established ones. Whether one gains or loses an ability, the associated identity needs to be updated. This may explain why people’s identities are especially turbulent early and late in life.” (Swann & Bosson, 2010)

Theories on identity negotiation distinguish between a ‘target’ (the person whose identity is ‘at stake’) and ‘perceivers’ (the people who have or develop behavioural expectancies towards the target) (Swann, Johnson, & Bosson, 2009). Perceivers are not necessarily individuals, but can also be a larger organisation (e.g. an educational institution, employer organisation). Whereas perceivers strive to validate their expectancies, targets seek to verify their self-views. Target and perceiver interact in symmetric or asymmetric relationships. These theoretical notions seamlessly apply to processes like accreditation of prior learning (APL) and job interviews or performance evaluations: situations in which we engage in a dialogue about what we have achieved, how this relates to what is expected from us and what it tells us about ourselves and our place in society.

Initial studies regarding identity negotiations focused on behavioural confirmation, i.e. the way perceivers influence the behaviour of targets to comply with perceivers’ expectancies. However, the focus has gradually shifted to the way targets play an active role in the identity negotiation process. In this process the desire for self-verification (i.e. stabilising one’s self view) tends to ‘prevail’ over the desire for self-enhancement (i.e. seeing oneself in the best possible light) (Kwang & Swann, 2010). This might explain why most people’s online and off-line identities appear highly consistent (Farquhar, 2009; Hardey, 2002; Moinian, 2006), although there is also evidence of the contrary: people struggling to integrate multiple identities (Turkle, 1995). To illustrate the notion of identity as ‘multiple yet coherent’, Turkle refers to homepages on the web, which she likens to a home consisting of separate rooms, yet forming an integrated whole. Considering identity as multiple yet coherent fosters self-knowledge: *“A more fluid sense of self “makes it easier to accept the array of our (and others’) inconsistent personae – perhaps with humor, perhaps with irony. We do not feel compelled to rank or judge the elements of our multiplicity. We do not feel compelled to exclude what does not fit.”* (p.261 -262).

Whereas Turkle’s study involves explorations of online, virtual personae and how they can be used to enhance self-knowledge and thus enrich the real, the issue addressed in this paper involves a movement in the opposite direction, i.e. from the real to the virtual: how to start from self-knowledge and real life experience, and present them online in ways that support processes of self-negotiation and self-verification. In this context too, the notion of multiple identities is relevant, which becomes clear for instance, in considering audiences for a showcase portfolio and the fact that this determines which particular competences and identities we want to highlight.

Ting-Toomey (1999) distinguishes primary and situational identities, the former being more stable and including for instance ethnic identity, gender identity and personal identity. Situational identities include for instance role identity and relational identity. Clearly, these identities are interrelated. In fact, processes of identity negotiation may involve negotiating identity conflicts stemming from the necessity to balance opposing needs. According to optimal distinctiveness theory (Brewer, 1991) a person’s self-concept is influenced both by a need to be an individual (i.e. differentiation) and the need to belong to social groups (i.e. assimilation). The role these opposing needs play in identity negotiation processes is nicely illustrated by an interesting exploratory study investigating the role of identity negotiation in decisions regarding attainment and removal of tattoos (Shelton & Peters, 2008). Motivations for attaining and removing tattoos may be driven by either a desire to express a sense of belonging with a particular group or person or a desire to ‘stand out and be different’. The findings of this study are consistent with the notion underlying optimal distinctiveness theory, that a person’s self-concept consists of three components: the individual-self (“the self as it contrasted with / considered to stand out from others”), the relational-self (“the self as it performs specific roles / relates to and assimilates with significant others), and the collective-self (“the self as defined through memberships of larger social groups) (Brewer & Gardner, 1996). For example: “I wrote a paper” (individual self). “I wrote the paper together with my colleagues Adriana Berlanga and Peter Sloep” (relational self). “I am working at the Open Universiteit Nederland” (collective self). *“Optimal distinctiveness theory suggests that an individual is constantly negotiating the need to individuate the self from others and integrate the self within relational and collective social groups as she searches for and defines her identity over time.”* (Shelton & Peters, 2008).

Though these opposing needs for assimilation and differentiation strongly affect the identity negotiation

process, it is most strongly motivated by the aforementioned desire for self-verification (Kwang & Swann, 2010). The need for self-verification is satisfied by seeking out self-confirmatory environments. Independent of the question whether one's self-view is positive or negative, self-verification fosters feelings of connection and positively affects creative task performance in groups (Swann, Milton, & Polzer, 2000). Before addressing the question how identity negotiation is going to be facilitated within the TRAILER project, we want to point out some differences between off-line and online identity negotiation.

Offline and online identity negotiation

The process of negotiating one's identity is different online than offline; one of the more obvious differences being that multiple identities, though equally present in both situations, become more apparent in online situation where they tend to be more 'compartmentalised' (cf. Turkle's metaphor of the home with separate rooms). In other words, negotiation constraints vary for online and offline situations (Berlanga & Sloep, 2011), and in the case of online identity negotiation they can be expected to further vary depending on the type of online environment at hand, e.g. a homepage, social network sites, a forum, an e-portfolio, etcetera. These environments vary for instance regarding interaction style and the level of awareness of a specific audience (i.e. perceivers addressed). In a homepage, for instance, one generally addresses a single, general (hence broad) audience which could work either way, i.e. make the owner feel more or less restricted than would be the case in addressing specific audiences through various e-portfolio showcases, e.g. peers, parents, team members, tutors, an educational institution, potential employer, line-manager, general public, etc.

Though undeniably the boundaries between social networking and e-portfolio tend to get increasingly blurred, still a major difference seems to be the underlying motivation, i.e. intrinsic versus extrinsic motivation (Barrett, 2011). This distinction brings along differences in communication as is illustrated by the following quote: *"The world of check-ins, instant-messaging, texting, emoticons, and rapid response does not make self-reflection impossible, but does little to cultivate it."* (Turkle, 2008). In contrast to this e-portfolios require reflection on many levels: which evidence to store, where to store it, as evidence of what, for which purpose and which audience, etc.

Another important distinction is that in using an e-portfolio target and perceiver roles are more clearly separated than in social networking sites, where everyone is both target and perceiver. This situation is clearly illustrated by a rather peculiar finding in an investigation of identity negotiation on Facebook: *"(..) Facebookers were quick to point out that their own profiles were not complete or entirely accurate representations of themselves and yet most felt they could get a pretty good understanding of other persons based solely on viewing their profiles."* (Farquhar, 2009, p. 211). Of course this raises questions regarding the completeness and accuracy of profiles in various online environments and how this affects identity negotiation. It also brings us back to the issue of trust in online identity negotiation. A recent study on the impact of personal profiles on initial trust formation in online teams (Rusman et al., 2012) provides detailed information on the relative importance of specific information elements. The study investigated profile information elements that are typically included in a variety of online environments. These elements were rated on their importance for impression formation by a group of 226 bachelor students, most of whom were experienced in collaborating in virtual teams. Of all the elements generally considered important, those considered most important were not so much the information elements providing 'factual' information like prior work experience, educational background, personality traits, etc. but rather the elements related to motivation and preferences: personal motivation for the project, ideas for the project, expectations of the project, and preference regarding specific types of situations to work in. This suggests that the motivation for learning might be an important aspect to address when documenting informal learning, next to providing evidence for learning achievement..

Identity negotiation in the TRAILER portfolio

The TRAILER project aims to facilitate documentation of informal learning with the further aim to support acknowledgement of informal learning. One of the tools to be developed in this project is an Informal Learning Collector (ILC) that will allow a learner to identify and collect instances of informal *online* learning, and permits the identification of instances or groups of instances that indicate the acquisition or development of skills and competences. The collection of instances of learning is performed in the users personal learning network, that is to say, the set of informal and formal tools, resources, and contacts that learners use to learn. The instances of learning collected via the ILC are tagged and/or linked to competences provided in a competence catalogue, possibly annotated and subsequently stored in the learner's e-portfolio. If she so wishes, the learner may then further edit the instance and the information added.

Instances of informal learning may be tangible outcomes (e.g. a result from a test or game, one or more forum posts, a design, a picture gallery, a review etc.) or less tangible 'activities' (e.g. an article that was read, a video watched, a search process, a comparison made etc.). For each instance, the learner will have to point out why it should be seen as an instance of informal learning. The less tangible instances will likely require a more elaborate argumentation or motivation of how these activities demonstrate a particular competence as will the tangible ones. We see a parallel here with the relative importance of the profile information elements involving motivation and preferences: the fact that one has read particular articles and the merely linking them to a particular competence, i.e. stating "These articles have made me knowledgeable in field X" would not sufficiently demonstrate competence; however "Reading these articles has made me aware of the fact that, within the field of X, ... etc." would. This example serves to illustrate that the ILC is no more and no less than a tool to facilitate identification and archiving of (online) informal learning. In that capacity it is a welcome addition to standard e-portfolios, which are mostly ignorant of informal learning instances. However making the inclusion of informal learning instances easier may well bring along a drawback: the risk of users being little selective as to what goes into their e-portfolio, leaving further selection to a later stage. Doing so would actually render selections for the purpose of showcasing more cumbersome.

The TRAILER e-portfolio will ensure that the user can create multiple showcases and thus negotiate various identities depending on the audience she is addressing. To create a showcase the user can include various elements from her profile (which provides very basic information like an introduction, demographic details, and contact details), from her résumé, from her social networks and all kinds of content constituting evidence of formal and informal learning.

This means effectively, that the user in her capacity of target in an identity negotiation creates a single overall profile, and a single résumé, from which she can subsequently select and combine elements.

Perceivers may provide feedback on the entire showcase as well as on each of its components.

Conclusion and discussion

To try and gain recognition of competences acquired through informal learning means to engage in a process of identity negotiation, i.e. a process of seeking verification of our self-view.

Social networking pervades our society, learning included (Sloep & Berlanga, 2011). Although e-portfolios meanwhile have an uncontested use in formal learning, we argue that they also are very useful in networked, informal learning, even though one may think for a moment that their role can be taken over by the social networks themselves. There are obvious advantages for informal learning, more so even than for formal learning. E-portfolios support informal learning and acknowledgement of informal learning because they: a.) are likely to foster reflection as they are connected to intrinsic motivation; b.) compel users to strike a balance between the need for independence and the need for assimilation as they enhance awareness of the audiences/perceivers addressed through the showcases, which c.) are so flexible that they facilitate both elaboration and integration of multiple identities.

In our view, the fact that the creation of a showcase heightens awareness of an audience/ audiences, combined with the need to generate trust by elaborating on motivations, make e-portfolios particularly suitable for identity negotiation.

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Integrative Knowledge E-Portfolio - Building Teachers' Professional Identity

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The presentation describes preliminary findings stemming from the Integrative Knowledge Eportfolios (IKEs) project in a Teacher Education program. The reflective stance that IKE requires is at the root of a *New Genre* which provides learners with a new way to document their intellectual journey, resulting in a new sense of themselves as learners and teachers, a new professional identity.

Background

Eportfolios have become commonplace in teacher education. Often, teacher candidates' eportfolios are used as a competency assessment tool (i.e., collection of assignments). However, there has been an urgent call to move beyond how-to thinking and form educators that are not as much *knowledge holders* as they are *knowledge makers*, reflective on their development and the ways in which they teach, and thus, more effective. Many teacher education programs have adopted eportfolios as a tool for reflection.

Teachers' reflective practices are frequently framed within a cognitive, critical and/or personalist/narrative approach that encourage educators to 1) consider different educational/ developmental theories so as to look at practice from different angles, 2) think critically about the social and political aspects of education in general, or 3) reflect on their own practice to become more aware of their own identity, beliefs and professional growth, respectively. Additionally, different cognitive activities are involved in critical reflective process from simpler Recollection and Analysis to more sophisticated Critical Processing.

Novice teachers' reflective narratives are primarily focused on Recollection and Analysis; more in-depth Critical Processing is less common. It is difficult for new professionals to engage in Critical Processing due to lack of sustained experience with content and process knowledge. In other words, it is difficult to reflect critically on what does not know well. Yet, it is important to find tools to better model for novice educators how to take a thorough reflective stance that goes beyond mere recollection and results in critical thinking and, potentially, effective transformation.

Objectives

IKEs are not depositories of previously completed work. Rather, the IKE framework is intended to support learners in taking a critical stance on key learning experiences as they discover their 1) values/beliefs 2) core capacities/areas of challenge, 3) guiding concepts that inform their work, and 4) connection to valued networks and communities. As such, IKE thinking becomes a genre: a set of practices to present oneself and one's skills, qualities, achievements (Hughes, 2011).

This study was conducted in a graduate Teacher Education program at a US university. IKEs were introduced during student teaching seminars. Students were supported in the crafting of the different components of their individual IKEs: Welcome Page, Goals, Philosophical Statement, and Work Showcase. This study focuses on the processes that supported the crafting of IKEs. More specifically, we look at the scaffolds provided for students to compose Critical Reflective Narratives, the central component of IKEs.

Data come from 1) students' IKE samples, and 2) thirty exit-interview video excerpts from the Fall, Winter, Spring seminar.

The emergent results from ongoing data analysis indicate that:

-Students experienced IKE thinking and building as a different and new kind of learning and thinking tool to reflect on their work and knowledge, different from their previous reflective learning engagements, a new genre they needed to *apprehend*.

-Students experienced the IKE model--different from their preconceived notions of eportfolios as depositories of assignments) as "very revealing", a tool that gave them "a new way of looking at and portraying" themselves as teachers and people in connection to their profession and other social networks, a mechanism to chart and thus better understand their intellectual journeys and professional persona.

-The affordances of the medium (multimedia) empowered students to present their work and ideas in ways that they felt were much more representative of their knowledge than any other kind of assessments they had experienced during their previous coursework.

- The particular genre structure of the reflective narratives, with specific set of components and style, proved to be a very strong scaffold to move students beyond recollection and analysis of their experiences – typical of novice teachers – and engage them in critical processing.

Conclusions

IKEs have tremendous potential as a tool of learning and identity building for educators. IKE processes and genre seem to be effective in supporting students' use of eportfolios as true tools of critical reflection, metacognition and, thus, professional identity development.

Electronic European Language Portfolio – Adult Learner’s Mean of Technologically Assisted Self-Directed English Acquisition: Transformation of Learner’s Identity

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Introduction

Digital language ePortfolio connects self-directed learning- SDL, English acquisition and using technologies what have an impact not only on adult learner personal development, but also transforms his or her identity. Technological assistance changes the attitude towards self-directed – SD and technologically assisted English acquisition. Nevertheless to these assumptions, adults often continue to be directed learners and more rely on educators than on themselves in the practice of foreign language acquisition. That is, why designing of a scale for measurement of adults’ readiness to self-directed English acquisition – SDEARS in blended e-studies has been in the process. During the process, theoretically selected criteria has been compared with criteria of the ELP and empirically checked by the qualitative research.

At the same time, data obtained by the method of narratives give additional findings. This article aims to present them for identifying experienced and interested foreign language learner in the form of position paper. Obtaining quantitative data for showing the variable of learners is the next step of the research. Hypothetically, it is assumed that using technological learning resources transforms learner’s attitude towards them. The following tasks are planned to complete: to show unique foreign language learning experiences, make a generalized characteristic of foreign language learner or what ones’ have done and others might do and predetermine directions for facilitation of personal transformation in the process of foreign language acquisition.

Theoretical background

The relationship between learning and personal development from humanistic point of view is considered to be learning is a personal development. The practical self-development historically arises from self-studies and self-education. It is developed by self-directed learning- SDL concept proposed by M.S.Knowles (1975), where learning goals are connected with individual’s social role. Similarly, the learning goal of small learning groups in e-environment has influenced creating the term of self-managed learning –SML, but learning of professional groups – the term of self-organized learning – SOL.

The social perspective as facilitation of learning has also included in SDL concept and according to Shpona, Chamane (2009) differs from teaching by consulting learners in solving their learning problems. Collaborative learning (Merriam and Caffarella, 1999) as the social perspective of the group is expressed in self-determined learning what is appropriate for achieving personal goals within the group. Learning contracts reflect increasing of learner’s responsibility for his or her learning process and results in formal education. Lifelong learning ensures continuity in learning where personal development is not more a linear process inside of some social or professional role. It becomes integrative by necessity not only to develop professional native language, but also by the need of acquisition foreign languages, informative and communicative technologies and learning skills.

Technologies has become an important part of learning. Changing the way of learning impacts personal development and transformation. Revision of previous assumptions (Mezirow, 1983) nowadays may be connected with the way and habits of learning and increases possibilities to transform the professional role. It influences self-concept, where Tennant (2006) notes its development from self-realization and resolving problems connected with a social role to self-motivation to personal development, transformation and creating who one might become (Tennant, 2006, 133).

Blended e-studies give additional possibilities for learners’ facilitation by joining face-to-face and virtual activities in nonformal education. Mark Nichols (2003) establishes e-learning as a means, but development of the learner in the context of the curriculum is still the end. Digital ePortfolio connects

SDL, professional development and using technologies what has an impact not only on adult learner personal development, but also transforms his or her identity and attitude towards self-directed – SD and technologically assisted learning.

In this situation, ePortfolio is a mean of managing one's lifelong learning in a learning society, but the European Language Portfolio- ELP specifies the context of learning and purposes collection of evidence supporting, demonstrating reflective practice and learning of foreign languages. It can be used not only in the paper, but also in the electronic way. The advantage of the ELP for its using in nonformal education is containing of methodological help. At the same time, it does not exclude facilitator's instruction and collaborative activities.

The ELP can be considered as a mean of SDL learning where self-development during the language acquisition process is implied and reflects motivation, desired language skills as learning goals, self-evaluation of language skills, SRL, collaborative learning and learner's attitude. It is possible to make conclusions about the process of developing self-experience of learning, career and personal development by comparing the diaries of different language acquisition reflected in the Language Biography, data from the Language Passport and the Dossier of the ELP.

SDL concept supplements the ELP because the planning of the process of doing tasks is more covered there. Postindustrial integrative models include individual, social and contextual dimensions like the three perspectives in researches of adult education (Rosemary S.Cafarella and Sharan B.Merriam, 2004). Tennant (2006) considers SDL as one of foundation concepts of practice and inquiry of adult and lifelong learning, which strengthens the identity and supposes learner's involvement in planning and guiding their learning.

Results of the research

This research presents the stories of five participants of the qualitative research. The self-directedness has been studied in this research through the experiences with foreign language learning. The method utilized is the contextual analysis of personal narratives, what aims to examine foreign language learners' actual experience for identifying nowadays' adult foreign language learner.

Hypothetically, it is assumed that using technological learning resources transforms learner's attitude towards them. The tasks of the study is to describe the unicity of experiences, make a generalized foreign language learner's characteristic and determine the directions of transformation of the identity.

An object of the study is foreign language acquisition, the subject – learner's identity. It consists of five written narratives given by volunteers, women aged 19 - 62, with different foreign language learning experiences. Two of them are English teachers, one is a teacher of another subject and two of them are participants of the EU project who had come from different European countries and had been working at school in Latvia during one year. Two men were asked to reflect their learning experiences with foreign languages, but they did not respond to the request. The only question, asked to the participants was to describe their personal experience of foreign language learning, resulted in unique set of stories showing person's developmental adjustment to nowadays multilingual world.

The method of narratives reflecting personal foreign language learning experiences is used for obtaining data. The contextual analysis and generalization is used for their interpretation. The process of content analysis included four steps: dividing the text into sentences, selection of content units, clarifying their meaning and coding of the content units.

Data are coded according integrative model of self-directed English acquisition - IMSDEA in blended e-studies for adults, proposed by the author of the article (Bojare, 2012). It consists of individual perspective that includes dimensions of SDL and self-regulated learning – SRL; social perspective including a facilitator and group dimensions; contextual perspective including dimensions of technologies assistance for delivering of subject-matter and methodological content and technological assistance of interactivity. In general, it promotes sustainable development at individual level.

The model differs from models of distance education by holistic facilitation of SDL by means of learner's individual contribution, sharing of SDL experiences in group, facilitator's supported discussions, including the appropriate module and methodological help for SDL in the content added to technological assistance in delivering the content and supporting collaborative activities. It differs from traditional models of SDL by broadening the social perspective with dimension of group; introduction of the information and communication technologies – ICT and including the methodological help. It differs from technologically assisted foreign language learning models by implementing the concept of SDL. The results of coding are presented in table 1. They show learners'

individual characteristic with dominating of the SDL concept.

Table 1. Foreign language learners' individual characteristic

Participant	Dimension	Perspective	Frequenty	Dominating concept	
1	SDL	Individual	6	SDL	
	SRL	Individual	4		
	SDL	Social (a facilitator)	1		
2	SDL	Individual	22	SDL	
	SRL	Individual	20		
	Self-determined learning	Social (a group)	10		
	SDL	Social (a facilitator)	1		
	Technologies	Contextual	1		
	Directed learning	Social	1		
	Directed learning	Social	12		Directed learning
	SDL	Individual	2		
SRL	Individual	2			
4	Self-determined learning	Social (a group)	1	SDL	
	SDL	Individual	37		
	SRL	Individual	7		
	Self-determined learning	Social (a group)	7		
	SDL (transformation of social role)	Facilitation of others	7		
	Self-determined learning (transformation of social role)	Facilitation of others	6		
	Technologies (transformation)	Contextual	3		
	Technologies	Contextual	2		
	Distance learning	Contextual	2		
	5	SDL	Individual		73
SRL		Individual	16		
Self-determined learning		Social (a group)	10		
Technologies		Contextual	6		
SRL (transformation)		Individual	4		
SDL		Facilitation of others' transformation	3		
SDL		Facilitation of others' transformation	3		
SDL(transformation)		Individual	2		
Self-determined learning		Facilitation of others	2		
SRL		Facilitation of others' transformation	1		
Directed learning		Teaching others			
Distance learning		Contextual	1		
e-studies		Technologies	1		
Directed learning		Social	1		

At the same time, the obtained data give the opportunity to make a generalized nowadays woman as an adult foreign language learner characteristic. First of all, she has learned more than one language at school, depending on age. Teacher's style has an impact on improving language skills and foreign language acquisition after leaving school. She admits her teacher's authority and remembers his or her advices. She recognizes the role and value of languages, cultures, people and herself. At the same time, she recognizes the difference between language learning in the classroom and in the real

situation.

Her motivation for foreign language acquisition is connected with her social role. She learns them for using at job, participating in the projects and conferences, travelling. It can transform her social role because of decreasing the demand in previous profession. Her teaching and facilitation style in a great deal depends on her style of foreign language acquisition. Her SD and distance learning experience is used for promoting her students' personal, methodological and technological facilitation, gives the opportunity of comparing languages and using bilingual methods of teaching according to students' native language. Her inner motivation of language learning is connected with realization her dreams. She is open with sharing her foreign language learning experience.

She reflects it as a process of developing skills towards the success or obtaining real evidences of language skills. Learning needs range from greeting and introduction to teaching and facilitation of others in foreign language acquisition. She knows full spectrum of cognitive (memorization, comprehension, organizational) and metacognitive learning strategies and uses suitable ones for herself. Memorization and comprehension of knowledge, developing of skills and using of language is important. Writing, tables, mind maps are recognized as good means of learning.

She is able to monitor the quality of doing tasks and involves human resources for facilitation and monitoring her learning, getting expert's and native speaker's help for interactive language acquisition. She can use her willpower for regular learning, overcoming the difficulties and reaching the learning goal and maintain the interest about target language during the learning process. Positive emotions prove self-realization and express the satisfaction with learning after getting success in its using.

She tries to use new knowledge and skills in interactive learning situations, for making sociocultural contacts, correspondence, seeking the information in the Internet, reading books about different topics, listening songs, watching films, getting intercultural experiences creating good relationship with foreign people. She is interested in acquisition of languages and does that not only formally and informally, but also learn them at home, uses opportunities of distance and nonformal learning. She involves emotions and intuition for remembering the vocabulary, comprehensive reading and writing.

Notable her the social growth to facilitated teaching, personal development from managed, individual learning to collaborative learning, turning to the music and culture, transformation of learning style. It transforms from using printed learning resources to audio and video CDs, using the Internet for correspondence and as a way of interactive communication, planning time, choosing target language and place, using opportunities of learning, developing skills instead of knowledge.

Critical evaluating of effectivity of learning strategies and process allow her to create her own methods of language acquisition. She is aware of her potential resources of foreign language acquisition, e.g. short time planning of time, visiting a country where the target language is used. She is ready to new language acquisition, students' and foreigners' facilitation.

She can use printed dictionaries and transcripts for translation and learning vocabulary. She is able to use technical devices and choose information and learning materials in the Internet. Nevertheless, a self-studies book with audio-CD is recognized as a good resource of learning. She is not able longer to work only with printed learning materials, because audio materials promotes skills, especially pronunciation and listening skills, accelerates language acquisition in a whole and the progress is notable very soon. She does not fill the ELP or ePortfolio.

The results of the research exposes directions of foreign language learners' personal transformation: transformation of social role, forming positive attitude towards technologically assisted learning materials, transformation of learning strategies, transformation towards SDL and facilitation of SDL, transformation towards environment of e-studies and social interactivity. In this way, the generalized characteristic of foreign language learner show what ones' have done and others might do and predetermine directions for facilitation of personal transformation.

Conclusions

The purpose of the paper to provide an overview of the research completed and identify experienced and interested foreign language learner is fulfilled.

The hypothesis that using technological learning resources transforms learner's attitude towards them is approved.

The ELP is a suitable mean of self-directed English acquisition and for interested adult learners its digital form is recommended.

There are similarities and differences between facilitation of personal development by the ELP and the concept of SDL.

SDL concept supplements the ELP because the planning of the process of doing tasks is more covered there. In turn, SDL deals with the organization of the whole learning process, facilitates personal transformation.

Findings of the qualitative research show that directed learning not always promotes other foreign language acquisition.

Empirical results of the qualitative research show the transformation of learners' social role, learning strategies, self-direction, social interactivity and attitude towards using of technologically assisted learning materials and environment as main directions of transformation of foreign language learners identity what predetermine directions for facilitation in the process of SD English acquisition in blended e-studies.

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“It’s your spell-checked version of yourself”: Student perceptions around (re)presenting self through eportfolio.

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Abstract:

With the expansion of Web 2.0 technologies in a virtual world, digital identity issues, particularly the relationship between the personal and professional (re)presentation of ‘self’ have emerged. The use of eportfolios is common in teacher education programmes, where the showcase portfolio presents the achievements of its owner as well as representing the owner themselves to an external audience. This has inevitably given rise to the question of (re)presenting the ‘authentic self’ in a digital form. This paper reports on findings from a research project conducted in 2010/2011 with a group of Bachelor of Education (primary) students at a New Zealand university. Three findings related to the ‘self’ in eportfolio are reported. Firstly, the participants identified the eportfolio as an ideal medium for teacher education as authentic, practice-related tasks engaged their personal ‘self’ which they began to reveal through the eportfolio. Secondly, a tension was recognised between the nature of the visual and written digital components of their eportfolio which drew on the personal self and their perceived expectation to only represent their professional ‘self’ in the eportfolio. Thirdly, participants grappled with the notion that the presentation of their authentic personal ‘self’ may be different from their digital ‘self’, thus ethical issues of honesty and personal (re)presentation become more significant. The dilemma of balancing or integrating the personal and professional ‘selves’ was identified. These findings led us to conclude that the presentation of the ‘self’ through eportfolio can lead to vulnerability. However, the value of engaging the ‘self’ and considering the (re)presentation of ‘self’ in a format to be viewed by others is particularly well-aligned with future professional practice in teacher education.

Introduction:

Following the expansion of Web 2.0 technologies and the associated personal and professional connections in a virtual world, representation of the digital ‘self’ raises questions of (re)presentation, authenticity and ethics. The nature of an eportfolio to present and increasingly to represent the achievements of its owner to different external audiences likewise raises the profile of the ‘authentic self’ as expressed in multiple identities. Put simply, the question becomes an ethical one for users: who am I as my digital self and how closely does that resemble the essence of who I am as a human being in a professional context? The purpose of this paper is to explore the perceptions of a group of undergraduate students who describe an emerging awareness of their digital self, expressed through their eportfolio use.

Review of Literature:

The showcase or presentation portfolio in which the user creates ‘views’ in the eportfolio to demonstrate achievements, attributes or competencies for a particular audience (Abrami & Barrett, 2005) is the focus of this paper. Such showcasing opportunities associated with eportfolios are widely recognised in the literature (Emmett, Harper & Hauville, 2006; Ring & Foti, 2006; Strudler & Wetzel, 2005). Within a university programme these opportunities may range from the traditional academic essay written for a lecturer, to more creative activities often related to applied professional practice and shared with peers, or even an external audience such as a prospective employer. The showcase view may include a wide range of digital artefacts and text presented in a multimodal format. Unlike Facebook or webpages, eportfolio offers the owner the unique function of control and creation of multiple views for varied audiences and purposes, raising the issue of (re)presenting the ‘self’ in what can be perceived as a constructed identity or multiple identities.

Increasingly the sum of these digital views is being read by audiences as representing the complex human (Cambridge, 2008a, Ramirez, 2011) to a far greater degree than traditionally awarded the written text. Ravet (2008, n.d.) names the ‘presence’ of those operating in a digital world as a ‘digital identity’ or an ‘e-self’ which he describes as a “digital extension of a physical self”. Lynch (2000) examines the idea of the ‘pervasive deceit’ surrounding information on the internet compared with the traditional acceptance of authenticity of written material. This leads one to feel suspicious of what can be perceived to be constructed identities (re)presenting digital selves. Levy (2000) cautions that the expectation of authors to create a range of digital artefacts to represent and ‘speak’ on their behalf is unreasonable, for while these may be tailored in form and content, they remain material objects and should be recognised as such by the

viewer of the presentation. Despite such cautions, Ravet's 'digital identity' (the total extent of a digital presence including all data) or Barrett's 'digital self' (a more personalized presentation) are increasingly accepted concepts (Tolley, 2009; Bauer, 2009) (re)presentating the self in a digital context. The 'symphonic self' (Cambridge, 2009) with the focus on deep consideration of values, development over time of synthesised, reflection-in-presentation activities and genre characteristics such as relationships and story (p. 43) resonates most clearly with the humanness of (re)presentation of a digital self through the presentation portfolio.

To present the digital self requires an understanding of both the nature of that media and the expectation of the audience. Thus in the social media of Facebook or Twitter there is an expectation of a strong personal 'self'. For an academic, the presentation of a professional self in an ejournal meets particular conventions. ePortfolio however, presents a challenge to both the personal and professional selves, when for example, its blogging tool encourages a loosening of the professional and an incorporation of the personal. The question of how this is balanced within the eportfolio view of 'self' for external audiences becomes a dilemma for those grappling with the authentic and ethical representation of 'self' when caught up in a preconceived belief of what constitutes a professional self. Cambridge (2008b) introduces the concept of an 'integrated' portfolio which has integrity in that it represents both the personal and professional: "it represents a well-integrated and complete representation of the creator's sense of themselves as they wish to make that sense visible to their audience ... the portfolio is the genre at the intersection of two spheres of life, more personal than resume, but more professional than a personal website" (p.1239) This challenge of presenting both a personal and professional self to create a perceived authentic portfolio in the face of traditional beliefs of a 'professional self' is the subject of our research findings.

The combination of control and customization thus brings to light the issue around ethics involved in showcasing the self as owners make informed decisions about material that best represents them (Ring & Foti, 2006). Stefani, Mason and Pegler (2007, p.13) sound a warning note when they observe that such selection can be "used to evidence learning in a persuasive way". Consequently the need for 'digital education' (Ravet, 2008) and 'ethical eportfolios' which reflect personal identity and values (Grant, 2003) are paramount.

These challenges around digital identity or digital self and professionalism are currently confronting teacher educators as their students use showcase eportfolios (Gerbic & Lewis, 2011) particularly in the case of graduates with intentions to seek employment. Unfortunately, the area of authenticity and integrity in the digital environment is under-researched (Levy, 2000; Lynch, 2000) with a particular paucity in the area of eportfolios (Grant, 2003).

In the field of teacher education (Sandford & Hopper, 2010; Zeichner & Wray, 2001) eportfolios are commonly used to support evidential learning through goal-setting (Blackburn & Hakel, 2006), reflection (Lin, 2008; Lyons, 1998), synthesis of theory and practice (Wetzel & Strudler, 2006) and demonstration of growth and development over time (Barrett, 2005). The presentation dimension of eportfolio is commonly used for assessment purposes, but increasingly as a tool for employment purposes. As the use of eportfolios expand through professional and academic programmes, and as they become more student-driven, inevitably the question of ethics of personal representation through this digital medium arises. This is a concern at the student-user level, as well as for quality assurance at the university level.

The lack of a strong literature base around digital identity particularly as related to academic use of eportfolios in universities is of concern as students increasingly develop presentation views for multiple audiences both within and outside their academic context. This paper makes a small contribution to the discussion on (re)presentation of 'self' through eportfolio by examining the student perspective.

The Research Project

Eportfolios were introduced into the School of Education, AUT University in 2009. From 2010, three cohorts of students within a Bachelor of Education (Primary) programme were the subject of a qualitative research project, which focussed on student perceptions of their learning through eportfolio. Emerging from this research is a theme on the (re)presentation of self in the digital medium.

During their second semester at the university, students were introduced to the open source eportfolio software, Mahara. The main focus of the eportfolio use was goal-setting related to the externally-imposed Graduating Teacher Standards (New Zealand Teachers Council, 2007). Students were required to collect evidence (in the form of artefacts) with reflection on the achievement of these to meet the Standards, across the three years of study. Furthermore, the eportfolio was embedded within two curriculum papers, where it was used to link theory with professional practice, and included a strong reflective component. While the

research questions ranged across the different dimensions of eportfolio use, it is the showcase dimension that forms the subject of this paper.

A qualitative approach was used, based on notions of naturalistic inquiry (Lincoln & Guba, 1985) situated activity (Denzin & Lincoln, 2000) and a constructivist philosophy. The assumption that the participants' reality was a complex, multi-faceted world and that each participant shaped their understanding and developed their professional knowledge both individually and within a broader social learning context aligned well with the concept of digital representation of self.

The goal of the research was to explore student perspectives of learning through eportfolio. Our research question: 'how does the eportfolio contribute to growth and development of students as emergent professionals' aimed to explore student perspectives of their learning. The participants were drawn from three consecutive cohorts. The first set of participants from cohort 1 consisted of 6 initial users of eportfolios with only 6 months experience; the second set of participants from cohort 2 consisted of 8 members with 12 months experience; and the third set of participants from cohort 3 consisted of 6 more mature users with 18 months exposure to eportfolio. We were interested to see whether the student experience with eportfolio changed with length of exposure to the technology.

In total 20 students participated in the research project. Rich discussions were recorded from 7 focus groups of two or three members and 4 one-on-one interviews. Transcribed data was analysed through themes and comparisons sought across cohorts. A strong theme related to (re)presentation of 'self' was identified and is elaborated in the next section.

Findings

1. Engaging the personal 'self'

Authentic tasks in eportfolio can engage the deeper self of the student in a meaningful and relevant way. Reflecting on the value of their eportfolio tasks, participants described their eportfolio as a bridge between their academic work at the university and their professional work in the classroom. Some participants considered the traditional theory/practice tension of the university/classroom as disconnected and drew attention to the nature of straight academic essays compared with eportfolio-type tasks. Beliefs about engaging and projecting a professional self at university were expressed as being in tension with engaging and projecting a personal 'self' exposed through experience. The eportfolio tasks were named as achieving the latter and were claimed to be more relevant and authentic for those engaged in teacher education.

While traditionally universities look for an expression of the professional 'self', those working with a digital self, increasingly want to express their individual personality and views through their work. According to Jean (cohort 3) eportfolio tasks that engaged the personal 'self' resulted in sharing a more complete view of their character with the lecturer, whether this be through the careful selection of an image or the reflection on an experience. This led to a softening of professional relationships in the view of the participants.

The eportfolio offers an avenue for an integrated view. Our participants expressed their frustration at the perceived either/or of the theory/practice tension, rather than the integration of both and thus the integrity of the personal and professional 'self'. Knowing the 'self' through deep engagement at both a personal and professional level, should be the pre-requisite to presenting the self, particularly as a digital expression of identity.

2. Presenting the 'self'

The findings indicated an emerging awareness that eportfolio can be used to present and/or represent the 'self'; notions of a digital 'self' remain a misty concept for these participants. We noted a general increase in awareness with increased use of eportfolio, alongside a growing intention for employment purposes. In terms of contrasting personal presentation in Facebook and eportfolio there was no confusion, the former was clearly identified as a means for presentation of 'self' for social networking, while the eportfolio was identified as a more formal academic and professional tool. Very quickly the eportfolio became known to students as 'Facebook for professionals'. The personal and professional selves remained separate.

While all participants in cohort 3 could articulate their professional self through eportfolio, only one in cohort 1 was able to identify her control and customization of her professional self through her showcase portfolio: *"its almost like showcasing your professional opinions and thoughts ... if someone could read it, they could get a good glimpse of your professionalism"* (Xena).

A similar pattern was noted in the intentional use of eportfolio to showcase achievement for prospective employers. Cohort 1 had not made the link with eportfolio as an electronic CV, while cohort 3 was well able to articulate their intention to present their professional self in a digital form. All participants saw value in

using eportfolio to demonstrate ICT skills or specific curriculum skills targeted in an employment position. They noted that the knowledge and skill evidenced through eportfolio views would set them apart from written CVs and would persuade employers to consider their application more carefully. However strong concerns were expressed regarding their digital representation through artefacts which were considered sterile and one-dimensional in contrast to the opportunity to sit with a viewer and talk them through the eportfolio. Here was the confusion for participants – they wanted to express the integrated self on interview yet they knew their CV speaks only of the professional self.

The lack of confidence in re(presentation) through a digital self was revealed by the following exchange between two participants in cohort 3. Anne noted that it was unlikely that anyone would put out a real version of themselves but rather one that had been airbrushed: *“it’s your spell-checked version of yourself”* she declared, and Jane added *“if I was hiring someone, I wouldn’t hire them on the basis of what I could see on a page... I’d want to see who they are”*. Both participants felt that the written word while it might be authentic, lacks personality and the X factor that you can only get in a face-to-face engagement. Debate over presentation of self through eportfolio and the implications of balancing or integrating the personal and professional selves was becoming a real issue for our cohort 3 participants. This led naturally to a consideration of the ethics of creating an authentic or honest view of the self in eportfolio.

3. The authentic or ethical self

Reaching to the heart of a digital self must be questions around the ethical and honest representation of the self. From the start some participants were aware of a constructed identity on eportfolio, although it took the majority of participants at least 12 months of use before raising concerns about the authenticity of their digital ‘self’. Few had thought through the concept of authenticity in terms of constructing their eportfolio. This is illustrated by Jan (cohort 3) who admitted that in order to stand out in a crowd of applicants she would *“make myself seem more amazing than I am”*, however, on probing, she admitted that *“I think you’ve got to stay professional”* .. and on further probing *“I wouldn’t put any information on my eportfolio that I wasn’t happy disclosing to a prospective employer or a parent of one of my students”*.

The reality of putting your best foot forward to create a good impression was accepted as what we do, particularly when looking for employment! The ethics of assuming an identity which may only be partially authentic did not seem to concern the participants too deeply. Jan (cohort 3) stated *“if the content of what you’re putting in there is appropriate, you’re being professional in what you say, you’re being truthful and authentic in terms of your philosophies .. I don’t personally see any ethical issues with that”*. This raises the question of who or what is the ethical self? Is it the sanitized, airbrushed or spellchecked version, or is there another way to be more honest about the personal/professional self?

There was general agreement at cohort 3, that a teacher presents an integrated personality (both personal and professional) and that this cannot be hidden from the audience. In like fashion, there is an emerging awareness that the eportfolio can achieve the same integrated (re)presentation of self. *“I think we teach who we are ... you teach in a way that fits your personality and your values and beliefs, so ...the eportfolio is one way of showing who you are.. it forces me to think about what I’m putting out there, where it’s coming from within me. People who are looking, that is going to teach them about who I am and what I believe”* (Jean, cohort 3).

To summarize our findings, these participants, after 18 months of use, have endorsed their use of eportfolio as they perceive that it allows them to engage their personal selves in applied professional study. The (re)presentation of their digital selves through the eportfolio, raises frustrations for them around their perceived need to keep their personal and professional selves separate, and they express distaste at the sterility of such created views. For some the concern to be ethical and honest in (re)presenting self digitally must include the personal and professional yet how is this achieved in a university (and indeed an employment) context, where traditionally the professional self stands alone? The findings describe a sense of vulnerability and insecurity in (re)presenting self.

Discussion

Our research findings confirm those identified in the literature, and contribute on the subject of integration of professional and personal self through eportfolio (re)presentation.

Engaging with the self in meaningful eportfolio tasks which draw on student personal experience as authentic artefacts rather than a reliance on the traditional academic writing associated with essays was highlighted by our participants as a shift towards a more relevant teacher-education model. This brings the theory/practice divide at university into focus, a point reinforced by Sanford & Hopper (2010) and supports the argument made by Joyes, Gray and Hartnell-Young (2010) regarding authentic activities.

The presentation of self through eportfolio was identified in our research as an area of growing awareness for participants who talked with some concern about their digital selves. In the case of an electronic CV, our research confirms Cambridge's (2008) findings that the eportfolio has value as a pre-interview tool, allowing prospective employers to drill down through material in preparation for the face-to-face interview.

Engaging the self and representing the self are important steps towards an authentic representation of self in knowing one's identity as an academic and as a professional, one's values and beliefs and how those inform the identity and integrity of the inner and outer landscape of the person (Palmer, 1998). Our participants are becoming aware of what Grant (2003) calls an 'ethical portfolio' which is based on an identity grounded in personal beliefs and values. Grant contends that the creation of self-presentation aspect of identity through eportfolio requires focussed attention and even professional development around values, ethics and identity. Our participants would benefit from such a focus to clarify confused and contradictory ethical thinking revealed through the research.

According to Cambridge (2008a, 2008b) an eportfolio has integrity when the user has negotiated the tension between the personal and the professional to the extent that the one informs and enhances the other, giving a view of self which has life and personality yet maintaining the professional edge. This is what our participants identified when declaring that the eportfolio lacked the X factor in (re)presenting the self to a remote audience. There are however, early indications of some students breaking away from traditional constraints for university presentations and engaging in knowing the self, presenting and representing the self through the selection of a variety of digital artefacts such as video and images which reveal a personality not seen in academic essays.

Conclusions

Our findings lead us to conclude that the (re)presentation of the 'self' through eportfolio can lead to feelings of concern, particularly when considering the dimensions of a digital self and the perceived loss of control over interpretation by a remote audience. Bearing in mind Ravet's (2008) declaration that all of us have a digital identity and presence whether we know it or not, digital identity education needs to be an essential part of learning about Web 2.0 technologies and eportfolios in particular. The issue of ethics and higher levels of personal accountability need to be addressed within more formal educational forums. Likewise, the aspiration for ethical eportfolios as described by Grant (2003) are worthy of emulation. Given time our students will resonate with Bauer (2009) as he reflects on his student experience of eportfolio and identity construction. His conclusion that his eportfolio is a significant part of his digital presence and what that means to him in terms of his professional networking, personal branding and future employment should be the experience of most students in the future. Teacher education providers such as ourselves, must now move away from a focus on the eportfolio as tool, and even beyond the eportfolio as pedagogy, to give more space and time to a consideration of the nature of digital identity and (re)presentation of self. Such is the brief of education.

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VAB: an ePortfolio used to record and assess competences of adult students

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Introduction

According to the definition of a portfolio as an organised collection of materials that presents and verifies skills and knowledge acquired through experience it is of particular relevance to validating nonformal and informal learning because it allows the individual to contribute actively to the collection of evidence and also offers a mix of approaches strengthening the overall validity of the process. An eportfolio additionally offers increased capacity to accumulate data that can provide the audience with greater insights into the achievements and successes of the learner.

The eportfolio presenting in this paper is the product of the VAB (VALuing experience Beyond university) project¹. The VAB project aimed at proposing an eportfolio as a pedagogical tool that along with an e-training would allow University teachers to take into account any competences acquired via non-formal/formal learning outside university, in order to assess their students. The VAB project via the eportfolio developed enables teachers to value the personal, social and professional experience of their students acquired beyond the University in order to enhance their professional integration. The main issue of the VAB project was to bridge the gap between University and the labour market by proposing a pass between theoretical/practical learning and professional skills and competences required by the labour market through a pedagogical tool proposed to University teachers/trainers.

This paper presents the VAB web based ePortfolio platform, basic elements of its structure, an example of its usage, the main outcomes of the evaluation procedure as well as topics for future consideration that have arisen during the project.

ePortfolios

A portfolio may be defined as a purposeful collection of student work that tells the story of a student's effort, progress and/or achievement in one or more areas (Arter & Spandel, 1992; MacIsaac & Jackson, 1994). According to this portfolios involve students in their learning (as a tool for reflection); allow students to increase their ability to self-assess; teach students to make choices; encourage students to better understand themselves and focus on their strengths; allow students to reflect on their procedures, strategies, and accomplishments so that they can improve and correct them and ultimately succeed; promote feedback during the learning process, particularly during individual conferences; encourage students to reflect on their strengths, needs, errors, interests, challenges, and objectives; encourage interactive processes among students, teachers, and parents; shows student progress because it tracks performance over time; and they are used to assess competencies developed by students (Wad, Abrami & Sclater, 2005).

Nowadays, digital or electronic portfolios (eportfolios) offer additional advantages as:

- Digital portfolios provide an effective means for cataloguing and organizing learning materials, better illustrating the process of learner development.
- Students can easily integrate multimedia materials, allowing them to use a variety of tools to demonstrate and develop understanding.
- Students can develop their Information and Communication Technology (ICT) skills through the creation of multimedia work and use of the tool.
- Student work becomes easy to share with peers, teachers, parents and others, and lets students and others provide feedback through a single electronic container.
- Digital portfolios provide remote access to work for students to complete homework or when otherwise learning at a distance from school.
- Digital portfolios provide remote access to student work for teachers for review and assessment purposes.

¹ Project Reference: 2009-1-fr1-leo05-07330, <http://www.vab-univ.eu/>

- Digital portfolios provide an opportunity for greater and improved communication with parents.

To effectively use portfolios for assessment, a learning organization needs to establish a culture of evidence. Evidence in an electronic portfolio is not only the artifacts that a learner places there; to be considered evidence of learning, the artifacts need to be accompanied by the learner's rationale, or their argument as to why these artifacts constitute evidence of achieving specific goals, outcomes or standards. Furthermore, just because a learner makes the claim that their artifacts are evidence of achievement, the evidence needs to be validated by a trained evaluator, using a well-developed rubric with identifiable and specific criteria.

Numerous analysts and researchers have outlined the potentials and researched the impacts of ePortfolios, all finding that they have immensely improved organization and learning processes, at levels ranging from simple personal use through higher educational institutions. Moreover, despite the trend of modern technologies commonly costing the user increased amounts compared to previous technologies or methods, the ePortfolio is actually more cost-effective in addition to its enhancements (Wad, Abrami & Sclater, 2005).

Batson (2002) reported that ePortfolio implementations had taken place on numerous campuses, while it is common knowledge that the rise of distance education and other online mediums in standardized education have continued to increase at a dramatic rate. Batson (2002, p. 3) stated, "*students seem most interested in the ways ePortfolios can flesh out their resumes, both before and after graduation. If internship interviewers or potential employers can see an online resume that includes views of a student's actual work, that student may be more likely to obtain the position. Students also want to see where they are in their college career regarding requirements. ePortfolios can facilitate this*".

in-formal and not formal learning

Informal learning is resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. Informal learning is mostly unintentional from the learner's perspective.

Non-formal learning is embedded in planned activities not always explicitly designated as learning (in terms of learning objectives, learning time or learning support), but which contain an important learning element. Nonformal learning is intentional from the learner's point of view.

Nowadays main tools adopted in Europe to describe what each one in general and in particular, students "*know, understand and/or are able to demonstrate*" at the end of a (*formal, informal or not formal*) learning process especially the concepts of **knowledge, skill, responsibility** and **autonomy (competencies)** on which are based the descriptors of the **European Qualification Framework for Lifelong Learning (EQF LL)** and for **Higher Education (EQF HE)**.

In this frame European Commission sets out the eight key competences: *Communication in the mother tongue; Communication in foreign languages; Competencies in Maths, science and technology; Digital competence; Learning to learn; Interpersonal, intercultural and social competences, and civic competence; Entrepreneurship; Cultural expression.*

VAB ePortfolio Platform

The VAB project concentrated on the innovative approach of the VAEB project² (Valuing non-formal and informal learning on the basis of voluntary experience) and tried to extend it to other types of non-formal and informal learning (*personal, social and professional experiences*).

The VAB project (VAluing experience Beyond the University) is a Transfer of Innovation supported within the Leonardo da Vinci programme, funded by the European Commission under the Lifelong Learning (LLL) program. It consisted of Universities and experts in lifelong learning in 5 European countries: France (University of Evry val d' Essonne, leader of the project and iriv conseil, coordinator), Austria (die Berater), Greece (Hellenic Open University), Eire (University of Limerick) and Slovenia (University of Ljubljana). Hellenic Open University was responsible for the development of the project's eportfolio.

The common aim of the two projects was to value skills and competences neglected by the labour market while it has become crucial for the employability to meet the current needs of the employers.

² <http://www.europeassociations.net/europeassociations.gb.htm>.

A great effort was put for the ePortfolio developed to be a modular, easy to use, ergonomic and attractive environment. In this direction an Administrator environment, a Professors/Teachers environment and a Students environment as well as a Smart assistant module were developed.

The basic responsibilities and tasks for VAB administrators are to:

- a. Register a new professor or student to the system
- b. Assign students to professors

Professors/Teachers after registration and receiving their usernames and passwords via email (automated) they are able to:

- a. Log in <http://www.vab-univ.eu/> (eportfolio portal)
- b. View the assigned student's portfolio and study its content (the students' submitted experiences).
- c. Certify, Validate, or Reject the experience of their students. Professors/Teachers are responsible to offer guidance to their students, to extract the students' skills and competences from their description through experiences of informal and non-formal education, to assess them and to make further suggestions to the students in order to improve their competences. In the case of rejection students have to resubmit their experience after making proper changes according to their professor's suggestions and comments.
- d. Review the corrected experiences and re-assess them

Students after their registration receive their usernames and passwords via email (automated). Once a student is assigned to a professor, he/she has to submit his/her experiences for evaluation. They are able to:

1. Use the username and password to log in to the link: <http://www.vab-univ.eu/> (visit the tab "eportfolio" and then "my eportfolio"). He/she adds a new experience
2. Create the new experience by filling a form having certain fields (title, category of the experience, duration of the experience, description of the skills required for this, uploading a file with a certification for the experience acquired)
3. Summit the experience for evaluation
4. Improve the experience according to their teachers' comments and resubmit the experience if the first evaluation is asking to do so
5. Receive (print) a certification of validated skills and competences that are related to the specific experience

Both Students and Teachers while working with the eportfolio can receive help by the *smart assistant* (on the right side of the screen) as well as by the drop-down menus which appear in almost each field of the form, consisting of lists with skills and competences as well as helpful questions.

Students may describe their experiences/activities in one of the following domains:

- Sport, culture and art activities
- Involvement in association and active citizenship
- Professional activities
- Transnational /mobility activities

They may describe skills and competences they have acquired by filling in certain fields of the eportfolio, concerning:

- Communication, Interpersonal & Teamwork Skills,
- Problem Solving, Project Management & I.T. Skills

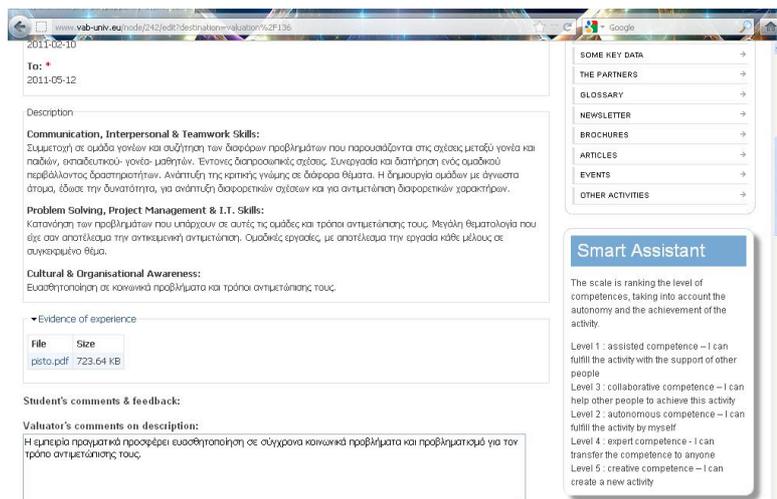


figure 1: A screenshot of VAB ePortfolio student's environment with the Smart Assistant on the right

•Cultural & Organizational Awareness

They had also to provide evidence of their participation in the activity they describe (a certificate, a recommendation letter, etc).

Professors/Teachers have the ability to study their student's recorded experience, to assess and comment it, to correspond certain competences gained from the experience and judge a level of achievement for each competence.

Professors/Teachers may Competence:

•*Instrumental competences* (Analysis and synthesis, Planning and time management,

General knowledge in a field of study, professional, cultural, artistic... domains, Oral and written communication in the native language, Oral and written communication in a foreign language,

Elementary computing, Information management (ability to retrieve and analyse information from different sources), Problem solving, Decision-making)

•*Interpersonal competences* (Critical and self-critical, Acting or working in a teamwork, Interpersonal relations, Leadership, Acting or working in an interdisciplinary team, Communication with non-experts in different domains, Appreciation of diversity, Acting or working in an international context, Ethical commitment)

•*Systemic competences* (Grounding in basic knowledge of a domain, profession... in practice, New ideas production (Innovation, creativity), Learning, Adaptation to new situations, Leadership, Ability to work in an international context, Understanding of cultures and customs of other countries, as well as multi & cross cultural interactions, Autonomously acting or working, Project design and management, Quality, Willing to succeed)

A 5-levels scale is used to rank the level of competences, taking into account the autonomy and the achievement of the activity.

- Level 1 : *assisted competence* – I can fulfill the activity with the support of other people
- Level 2 : *autonomous competence* – I can fulfill the activity by myself
- Level 3 : *collaborative competence* – I can help other people to achieve this activity
- Level 4 : *expert competence* - I can transfer the competence to anyone
- Level 5 : *creative competence* – I can create a new activity

Students and Professors/Teachers or/and Career Advisors were offered a set of e-training modules as well as the smart assistant to assist them on the use of the eportfolio tool. Additionally, most of the Professors/ Teachers or/and Career Advisors participated in an on-line seminar on the use of eportfolio, on the mapping of gained skills and competences to their students' activities and on the valuation as well as on the procedure of the experimentation (pilot phase).

Professors/Teachers or/and Career Advisors offered their students information about the aims and the content of the project and explanations/help needed while completing the eportfolio.

VAB Web Portfolio Specifications

VAB Web Portfolio and **Smart Assistant** are built as Drupal 6 modules. Drupal is an open source modular Content Management System written in PHP programming language. Drupal uses the MySQL data base system for data persistence. The Drupal Core libraries and modules provide basic functionality including System bootstrapping, Database abstraction layer, Caching, Access control, HTML Form system and API, File management API, E-mail system and API, Menu system and API, Path system and API, Theming system and API, Localization and translations system and API, User and session system and API, Node system and API, Logging system and API, Taxonomy system and API, Actions and Triggers system and API, and JavaScript/AJAX API.

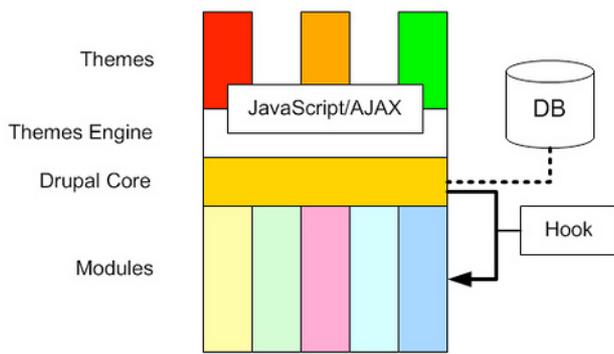


Figure 2: The Drupal architecture

Drupal functionality is extended through contributed modules and themes. Modules implement new functionality and plug it into the Drupal system. Modules can access the database through the database abstraction layer, enforce access control and define user permissions, alter the behavior and appearance of Drupal core components and content, and interact with other modules. Modules interact with Drupal core and with each other using special functions called hooks. To extend Drupal, a module needs to implement a hook. When Drupal wishes to allow intervention from modules, it determines which modules implement a hook and calls that hook in all enabled modules that implement it. Drupal

themes use the phpTemplate theming engine and CSS to control the appearance of the web application. In Figure 2 the Drupal architecture is presented.

In this frame two Drupal modules were implemented, the **VAB ePortfolio module** and the **VAB Smart Assistant module**.

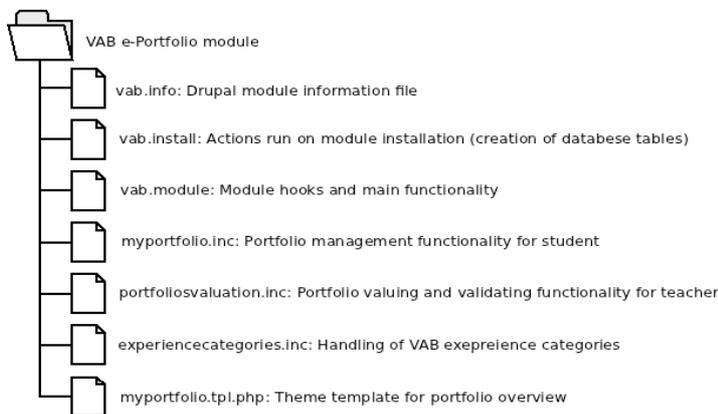


figure 3: VAB ePortfolio module architecture

The **VAB ePortfolio module** materializes the functionality of VAB ePortfolio. In VAB ePortfolio module the student and teacher user roles and access rights, as well as the vab_experience node type for representing the experiences of the students are defined. The VAB ePortfolio module implements the management of student's portfolio with overview, creation, editing and submission of experiences for evaluation, as well as student experiences' valuation and validation by teachers.

It also implements administrative functionalities such as registration of users and student to teacher assignment. Furthermore, the VAB ePortfolio module

extends Drupal user profile module by defining VAB specific profile attributes for students and teachers. It also uses the Drupal actions and triggers system for sending automatic email notifications to users.

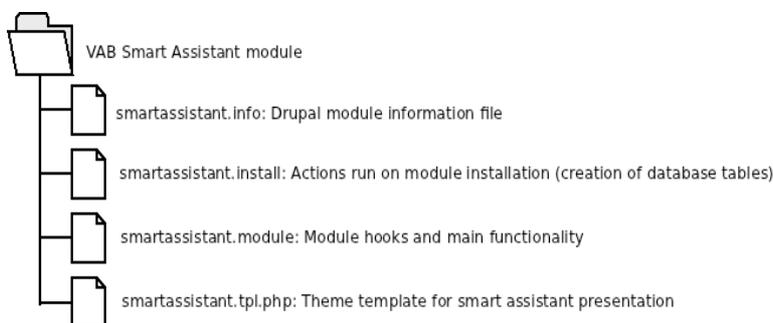


figure 4: VAB Smart Assistant module architecture

The **VAB Smart Assistant module** materializes the Smart Assistant functionality and is dependent on the VAB ePortfolio module. The VAB Smart Assistant module uses dynamic HTML and client side JavaScript scripting for providing useful live information and guidance to the user as he/she edits or validates a portfolio. The JQuery javascript library is used for providing interactive change of the content displayed by the smart assistant, based on the user's actions.

Usage example

Let suppose that student X recorded his experience coming from his involvement in a water polo team. He entered the Vab eportfolio student's environment, recorded the time period of his involvement, selected the *Sport, culture and art activities* experience category, put a characteristic for the experience title and described analytically his role and his activities in the frame of the specific experience. According to his opinion he gained *communication, interpersonal and teamwork skills* and he wrote down his arguments to support this opinion guided by the smart assistant.

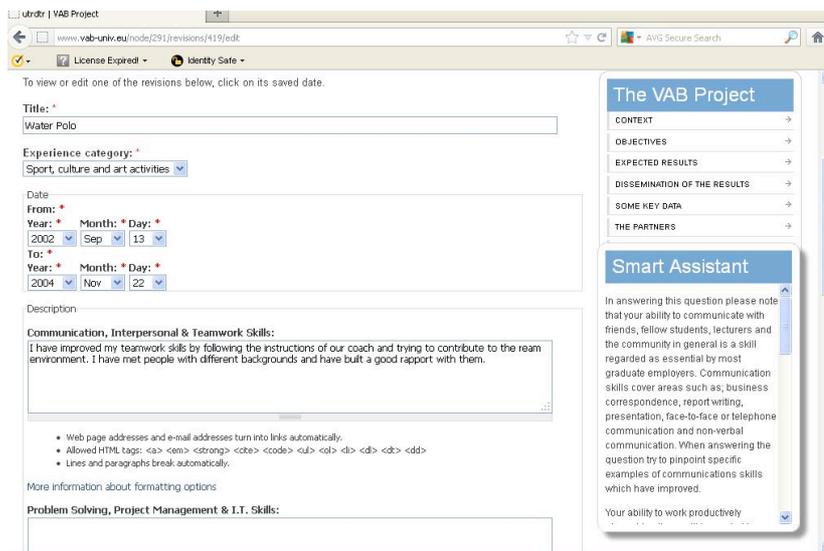


figure 5: A screenshot of the Student's experience recording

He also attached a certification to confirm his active participation in the water polo team.

The assigned Teacher on the other hand, entered the Vab eportfolio Teacher's environment, studied his student's recorded experience, assessed it and corresponded certain competences to his student's activities as well as the level of their achievement.

More specifically, according to his assessment, the teacher judge that his student gained competences for *Decision making* at Level 2 – *autonomous competence*, *Acting or working in a teamwork* at Level 1- *Assisted Competence*, *Interpersonal relations* at Level 1- *Assisted Competence* and *Acting or working in a teamwork* at Level 1 *Assisted Competence* as well.

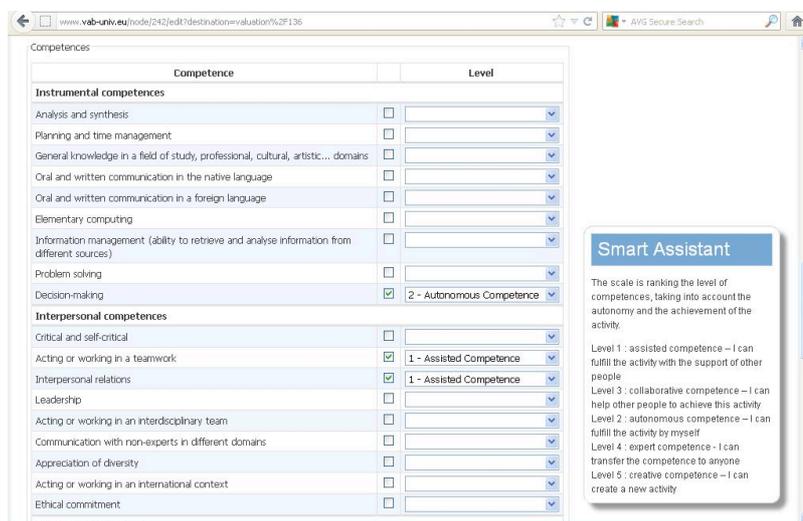


figure 6: A screenshot of the Student's evaluation procedure by the Professor

Pilot use and Evaluation Issues Discussion

A pilot use (experimentation phase) of the VAB eportfolio and its evaluation took place from September 2011 to December 2011. During the experimentation phase teachers and students from the participant countries used the VAB eportfolio. In Greece thirty (30) students filled in their eportfolio and fifty nine (59) experiences/activities were recorded (ranging between 1-3 activities per student). Sixteen (16) Professors/ Teachers valued their students' activities.

The procedures and the tools used for the evaluation included semi conducted oral interviews with teachers and students before and after their experimentation with the eportfolio and written on-line questionnaires for teachers and students after the use of the eportfolio. Questions included in this tools concern the familiarization with the practice of recognising informal and non-formal learning, the easy of use and the friendly environment of the Vab eportfolio, the role of civic engagement and competences gained from informal and non formal learning in academic life and employment.

Three workshops were also organized in Patras, in Athens and in Thessaloniki. In all the workshops Managers, Senior Employees of Public Authorities, Representatives from public and private Educational Authorities, University Professors, Career Advisors, Adult Education and Training Organizations and Non-profit Organizations participated. During the workshops, all the procedures of the VAB project as well as the results of the project were presented. A deep discussion on the theme of the project took place by

collecting and exchanging ideas, opinions, thoughts and questions coming from all the participants' views. The main topics of discussion focuses on: a. Exploitation of non-formal skills in Employment and Career (Employers and people in charge of Public Authorities, Educational Authorities from the public and private domain, Non-profit Organizations participated), b. The role of the University in evaluation and certification of informal and non formal skills/competencies through the use of a digital portfolio (eportfolio) (University Professors, Career Advisors, Adult Education and Training Organizations participated), c. The usefulness and exploitation of ePortfolios like the Vab one.

After taking into account the Professors'/Teachers' answers to the interview questions (before and after the experiment) as well as to the questions of the on-line questionnaire, the following conclusions can be pointed out:

All the Professors/Teachers claimed that it was easy to handle technically the tool in order to assess students' skills based on students' descriptions, but almost all of them faced contextual difficulties to assess students' skills according to one of the five 'levels' (1-assisted Competence, 2-Autonomous Competence, 3-Collaborative Competence, 4-Expert Competence, 5-Creative Competence) for each acquired skill.

Their proposals to overcome this difficulty are:

Students should describe in more detail what exactly his/her role was in the activity, what activities they carried out, what was the result of his/her effort. A certificate is not enough for evidence. More qualitative data are needed. An interview with the student could offer useful information to the teacher to assess student's competences. More explanation is needed in order for the five Competence levels to be used suitably. A more detailed introductory text should be included in the project portal. A more analytical documentation is also needed. The e-training modules focused on providing technical aid to the users, while they (Professors and students) needed help on the concept and the meaning of evaluating competences gained from volunteering, informal and non-formal education activities. Some analytical and practical examples for both the Professors and the students should be included. The examples could explain in a practical way how to describe the acquired skills for the students and how to assess by the teachers.

The majority of the Professors/Teachers stated that tools like the Vab project eportfolio could be used in evaluating procedures of non-formal skills. They should suggest the usage of such tools to their colleagues but they have additionally proposed the following:

More than one teacher should assess the competences derive from one student's experience in order for the evaluation to be fair, accurate and valid. Every teacher can assess in an accurate and valid way only a small number of his students' competences. During the evaluation procedure it is important for the teacher to have personal communication with the students under evaluation, to discuss with them and form a personal opinion for him/her. A valid evaluation is not possible to be done based only on paper evidence. Professors/Teachers should be educated (trained) in evaluating competences. A More detailed categorization of the competences might be helpful. A categorization of competences according to the employment needs is necessary.

A portfolio like the VAB project one could be introduced in the academic system but it might be difficult for the Greek academic system and the Greek community to accept it since it stands out of the culture of most members of this community. Awarding Credits to non-formal skills may not be the best solution. An official report describing the students' assessed skills or a recommendation letter describing student's activities and competences, could accompany his/her degree. The concept of valuing informal and non-formal learning is important. Civic engagement should be recognised in some way because involved students may develop a wide range of skills and competences that they could not develop through their studies. During civic activities they behave as actors in the real world in an effort to support other people trying to have an impact in their community. Civic engagement might also be a part of students' academic life. Employers should accept official reports coming from the university and concerning students' non-formal skills.

After processing the Students' answers to the interviews' questions (before and after the experimentation) as well as to the questions of the on-line questionnaire the following can be pointed out:

Students found the ePortfolio environment easy to use and the Smart assistant module very helpful. They managed to describe skills based on their experience but they asked for some education/training on the topic. They suggest a short seminar explaining the basics and the procedure for describing skills and competences gained from informal and non-formal education. Practical examples of describing competences acquired from volunteering activities would also be helpful. The university academics could suggest the tool to other young people if there were offered credits for non-formal skills.

According to the discussions during the three workshops, among Professors, Teachers, Career Advisors, researchers, representatives from public authorities and public or private institutes, it can be concluded that:

The added value of non-formal skills has been recognized in practice and has been considered essential, especially in vocational guidance procedures. However, there are some 'red lines' on what 'should' and what 'can' be assessed. Key problems in the whole procedure are 'how' non-formal skills can be measured, in 'what context', 'what methods' and 'what tools' are needed, in order for the "measurements' to be valid and reliable.

The necessity of the evaluation of non-formal skills is recognized by the society nowadays. Non-formal skills are horizontal skills, useful to any profession and as important as life skills (communication, problem solving, teamwork, creativity, initiative, etc.). They can offer a "competitive advantage in the labor market" as they have been gained in practice by individuals, they constitute important evidence of participation in non-formal activities and can make the difference in employment and society in general.

Today there is a tendency for employers to prefer employees having well developed soft skills (soft-skills such as communication, organization, teamwork, etc.) since there are many people seeking for a job with a variety of qualifications. Therefore, there is needed a method of discrimination and selection of appropriate employees among many having similar qualifications (hard skills).

A classification of non-formal skills per specialty and per field of science would be useful and important. Nevertheless, a debate about the certification of non-formal skills is growing.

The issue of granting credits to non-formal skills is the basis of an intense debate. Young persons should be governed by an internal motivation for their participation in activities of informal and non formal education. Credits should not be a motive for them order to be engaged in such activities.

The European Credit System for Vocational Training (ECVET) is more related to the employment and skills needed in this area so it could be more appropriate to be used for the certification of non-formal skills by the ECVET system. In Greece, National Organization for the Certification of Qualifications and Vocational Guidance (NOCQVG) is the official authority for the accreditation of qualifications coming from different career paths of a person. NOCQVG could have the role of the official authority responsible for the accreditation of bodies providing non-formal education.

Certification of non-formal skills should be distinguished in two types of certification: a) Certification of skills, b) Certification of the certification process.

The eportfolio developed during the VAB project was assessedd as a useful tool:

- for the evaluation of the skills gained by students during their work placement
- for keeping record of students' abilities that is kept Structures of Employment and Carrier in Universities
- for the assessment of workshops, theses, dissertations, laboratory courses and projects during students' studies at any level
- for the Personal Development Program (a program for the development of soft skills such as communication skills, skills in presentations, etc.), of the Athens University of Economics and Business. In the frame of this program, students participate in discussion groups on various topics such as networking, self-evaluation, job search techniques etc. The VAB tool could be used to track the evaluation of the above activities.
- To accompany the employer's interview with the candidate employee. Every employer wants to know about his candidate employee's skills creativity, cooperation, communication.
- To replace the first interview between an employer and the prospective employee: the employer initially studies the portfolio of the candidate and during the interview explores in detail positive or negative points identified in it.
- As an extended recommendation letter or an official degree supplement provided by the University.

Finally, as noted by all the participants in the pilot use of the eportfolio, the use of the portfolio was an interesting learning experience for both sides (teachers and students) that could change the way of communicating.

Conclusions and future enhancements

Overall, the design and development of the VAB ePortfolio platform was considered to be a useful experience by the participants (researchers, students and University professors). Nevertheless, a few

reservations were expressed regarding, among others, (a) the universal applicability of the approach, (b) the need to customize the list of knowledge, skills and competences per subject, (c) the role of University professors as evaluators or coaches, and (d) the validity of the assessment with respect to the topic of studies.

VAB future enhancements include functionalities that allow students to export their valued resume in xml format and contact teachers and other students through live chat. Smart Assistant module will be enhanced with richer context – aware information and more interactive behavior. In the near future would also plan to implement VAB portfolio as a plugin for Mahara open source eportfolio and social networking system. We plan to implement a VAB Portfolio artefact plugin for Mahara that will give Mahara users the ability to add their experiences and maintain their VAB portfolio inside Mahara.

Acknowledgment

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Competence Based Assessment Considerations within ePortfolio System

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Introduction

Usually ePortfolios connote with digital environment where people and/or organisations can display their achievements: both individual and collective ones. Nowadays employees are often asked to use ePortfolios to provide evidences of their continuous professional development and growth. More and more educational organisations all over the world break fresh ground and implement ePortfolio solutions into institutions' curriculum. ePortfolio systems play significant role to motivate learners in order to improve their competencies. Everybody awake the fact that ePortfolio is not just a signboard which could be used to show others somebody's achievements. It might be used for both students and teachers: for students – to study, improve learning outcomes, assist fellow-students, make peer and self-assessments; for teachers – to tutor learners and monitor their progress, make assessment of study process and provide necessary steps to improve curriculum. Valuation of prior learning and obtained skills becomes more important in finding of the proper learning path for learners. Lifelong learning challenges demand actualising these desires.

At the moment, aspiration for knowledge to meet labour market requirements and responsibility to acquire necessary competences mostly falls upon learners or depends on course attraction, keenness of teaching staff, as well as new motivating educational methods. Based on Dr. H.Barett's research [1] we can observe that there is a lack of systems which ensure users' competence based assessment. To say more, there are even less systems which give learner's real appropriate learning path suggestions and constructive solutions. Student's learning path depends on learning goals [2], i.e. competencies which are planned to achieve, and it is linked to the expected learning outcome. Each of us has our own set of competencies where almost each competence might be represented as a cluster of other competencies with their particular number of knowledge, skills and proficiency, making person's competence profile. Based on this, we can consider that learners' competences enhancement and further development might be facilitated by assessing their current level of competencies at each phase of learning, activating their groupwork and critical thinking, and offering them study materials which are still missed. Competence assessment initiatives always ought to be tailored with competence development activities [3]. Internal and external competence assessments made on regular basis [4], both tutor-, self- and peer-assessments, should be recognised as competence development in itself [5].

This paper is devoted to the challenge of the origination of new tools and methods to enhance competence development, and creation of a new ePortfolio system which supports that. It addresses the problem of assessing learners' competence levels and giving appropriate suggestions and probable solutions based on these assessments, as well as seeking perspective ways to make ePortfolio systems more flexible and intelligent, which would result in creation, development and implementation of new interactive ePortfolio system.

Experimental ePortfolio system design

Experimental ePortfolio algorithmic model in brief

To achieve the goals of advanced and motivating learning environment, which promotes competence development, experimental ePortfolio algorithmic model was created. This model along with external study portal information system (IS) 'ORTUS' has ensured students' competence development assessment process along the study course.

Figure 1 shows simplified scheme of the experimental ePortfolio system's algorithmic model. An extra external assessment processes (the right side of the Fig.1) are added to this figure just to emphasize the importance of a likely full spectrum of assessment types which may vary in different learning environments and which have crucial significance in competence development.

Students can upload the accomplished homeworks onto Riga Technical University's educational portal 'ORTUS'. Then with an ePortfolio system administrator's assistance, the course tutor sends these works to the ePortfolio system. ePortfolio groups are formed based on a sequence of submitted homeworks.

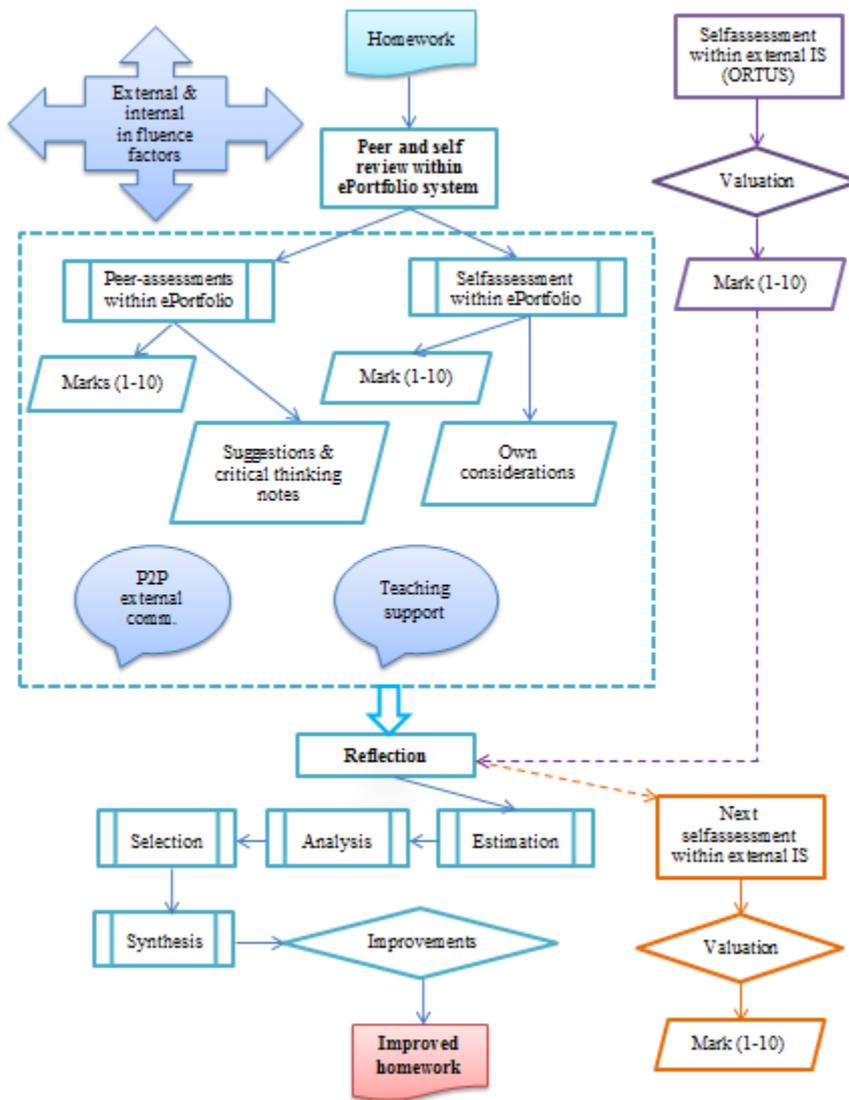


Fig.1. Simplified scheme of the experimental ePortfolio system's algorithmic model

Students should assess their group members' accomplishments and make self-assessment. Students have a possibility to see group member names against their achieved assessment results: marks, critical thinking notes and constructive suggestions. In this case, to verify details, students also can establish external mutual and/or e-communication contacts. Teaching staff support is also appreciated and might be used to render good offices to students.

Bearing in mind that „the real value of an ePortfolio is in the reflection” [6], the reflection is one of the key processes also here. Student is kindly asked to observe and collect group members feedback, listen in tutor's recommendations, estimate the data and put them against own calculations, analyze information, select appropriate conclusions, add something well-formed or synthesize dandy things. As a result, a number of improved homeworks ought to be increased.

Technical description

ePortfolio system is created within an open source integrated development environment 'Netbeans'. The fundamental principle of the three-pronged architecture MVC ('Model View Controller') is applied. At the lower level (prong) of the system the object-oriented data model 'Hibernate' is utilized. At the system's controller and view levels the Java 'JSF libraries' are used.

Experimental ePortfolio system is hosted on the application server 'Glassfish 3.1'. Received data are collected, saved and maintained in the 'MySQL 5.5.16' data base. Java 'Development Kit 1.6.0_24' is used.

Five data tables, classification tables and statistical tables are created within the data base. Students' homeworks data, i.e. work author's name, peers' / group members' or assessors' names, assessments, marks and assessment remarks, e.g. feedback, critical thinking notes or encouragement, are saved, collected, picked and read in the data tables. Appropriate assessment criteria for each of five group works

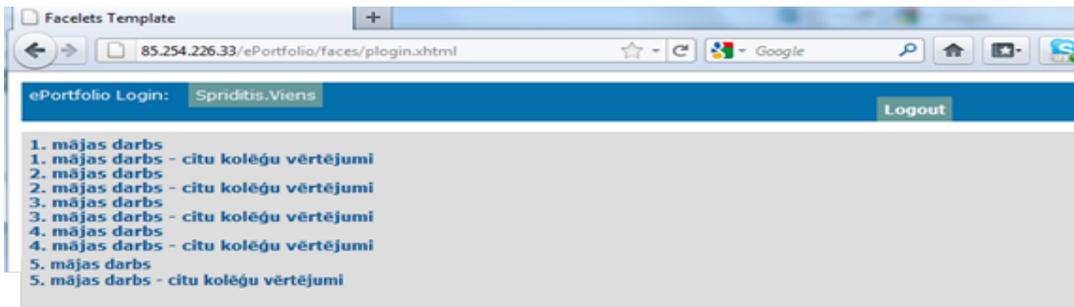


Fig.4. User's personal desktop with tasks and feedback

By clicking on appropriate homework task (for instance, in Fig.4 – links: „1. mājas darbs”, „2. mājas darbs”, etc.), user's workpage opens (Fig.5). Here the student can download and save three his/her group member homeworks, read them, assess, mark corresponding competence level, and write critical thinking notes to assist others in further improvement of their works. After completion of group members assessment (classing by points, filling-in assessment forms, and saving), filling fields are not shown anymore.

There is an obligation to assess not only group members, but also to make self-assessment: assess own level of competences and describe personal considerations regarding achieved results. Obtained data could be contrasted and compared against self-assessments and test results made outside ePortfolio system (within external Riga Technical University's study portal 'ORTUS'), and internal peer assessments within particular ePortfolio group.

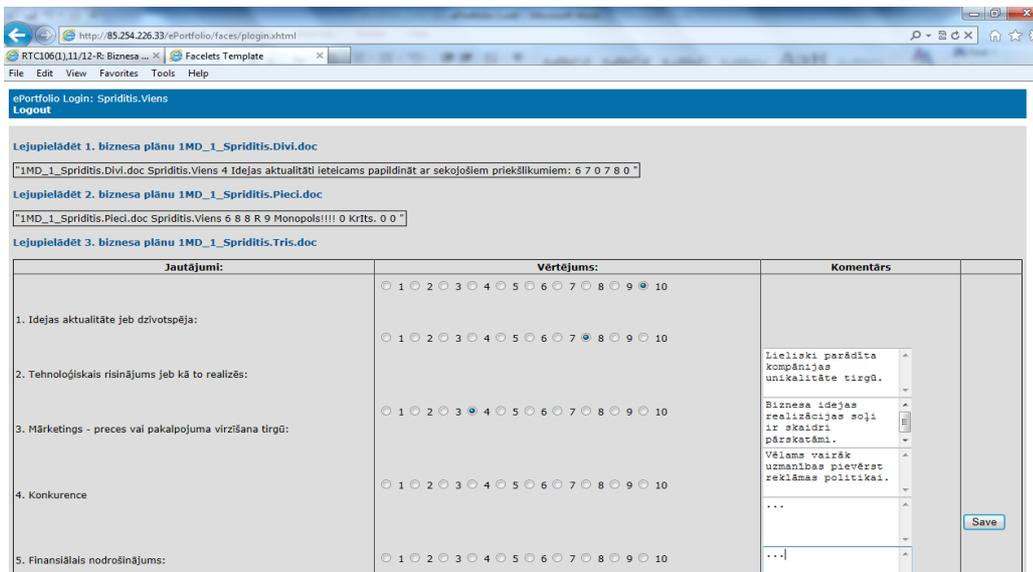


Fig.5. Student's workpage

By clicking on appropriate peer assessment link (for instance, in Fig.4 – alternate links: „1. mājas darbs – citu koleģu vertejumi”, „2. mājas darbs – citu koleģu vertejumi”, etc.), peer assessment and feedback summary in user's page opens (Fig.6). Here are not only group members' remarks, but also user's own assessment scores and notes. Analysis of all these data is incredibly useful for the learner to resolve a problem, get in touch with group members, other course students and tutors, more precisely assess own level of competencies, improve accomplished poor or even failed works, and develop required competences.

ePortfolio Login: Ksenija.Jakuseno Uz galveno lapu		Logout		
Biznesa idejas autors:	Biznesa idejas vērtētājs:	Jautājums:	Jautājuma vērtējums:	Jautājuma komentārs:
ZMD_17_Ksenija.Jakuseno.docx	Arnolds.Baranovs	1. Idejas aktualitāte jeb dzīvotspēja:	8	Nav slikta ideja, bet ja es to pareizi saprotu, tad, manuprāt, GPS, kas tagad pieejams arī mob. tel., sniedz līdzīgas iespējas, tapec iespējams ne visiem būtu nepieciešams dators.
ZMD_17_Ksenija.Jakuseno.docx	Arnolds.Baranovs	2. Tehnoloģiskais risinājums jeb kā to realizēs:	9	ir ok
ZMD_17_Ksenija.Jakuseno.docx	Arnolds.Baranovs	3. Mārketing - preces vai pakalpojuma virzīšana tirgū:	7	derētu precizēt reklamēšanas veidus(piem., ja internetā, tad kādās tieši saitēs utml.)
ZMD_17_Ksenija.Jakuseno.docx	Arnolds.Baranovs	4. Konkurence	9	ir ok
ZMD_17_Ksenija.Jakuseno.docx	Arnolds.Baranovs	5. Finanšiālais nodrošinājums:	10	ir ok
ZMD_17_Ksenija.Jakuseno.docx	Arnolds.Baranovs	6. Uzņēmuma spēja realizēt ideju:	10	ir ok
ZMD_17_Ksenija.Jakuseno.docx	Arnolds.Baranovs	7. Iespējamie riski:	9	iespējams nemaz nebūtu tik daudz to cilvēku, kas gribētu vēl speciālu datoru ceļošanai(idejas realizēšanas izmaksas var sanākt lielākas nekā senākum), jo cik noprotu viņiem būtu jāmaksā vairāk sakarā ar to, ka ir uzstādīti datori viņu sēdvietās.
ZMD_17_Ksenija.Jakuseno.docx	Natalija.Stube	1. Idejas aktualitāte jeb dzīvotspēja:	10	Ideja ir dzīvotspējīga :)
ZMD_17_Ksenija.Jakuseno.docx	Natalija.Stube	2. Tehnoloģiskais risinājums jeb kā to realizēs:	9	vareetu papildinaat ka vajag diezgan daudz ari datoru
ZMD_17_Ksenija.Jakuseno.docx	Natalija.Stube	3. Mārketing - preces vai pakalpojuma virzīšana tirgū:	5	vareetu papildinaat
ZMD_17_Ksenija.Jakuseno.docx	Natalija.Stube	4. Konkurence	9	Piekritu ka ļoti maza konkurence, bet ja runaat tieshi par Latviju? vai ir taadi autobusi?
ZMD_17_Ksenija.Jakuseno.docx	Natalija.Stube	5. Finanšiālais nodrošinājums:	9	
ZMD_17_Ksenija.Jakuseno.docx	Natalija.Stube	6. Uzņēmuma spēja realizēt ideju:	9	
ZMD_17_Ksenija.Jakuseno.docx	Natalija.Stube	7. Iespējamie riski:	8	Varbuut ari lielaaka cena, izmantojot shoos dotoorus
ZMD_17_Ksenija.Jakuseno.docx	Julija.Putrina	1. Idejas aktualitāte jeb dzīvotspēja:	10	Loti laba ideja
ZMD_17_Ksenija.Jakuseno.docx	Julija.Putrina	2. Tehnoloģiskais risinājums jeb kā to realizēs:	8	Nav teikts kas bus vajadzigs ,jai izveidotu tadu autobusu.
ZMD_17_Ksenija.Jakuseno.docx	Julija.Putrina	3. Mārketing - preces vai pakalpojuma virzīšana tirgū:	9	Sapratu ideju. Bet varbuut to var reklameet internetaa,radio un vel citas SMI?
ZMD_17_Ksenija.Jakuseno.docx	Julija.Putrina	4. Konkurence	9	Tadi autobusi neeksistee.Bet eksistee vilcieni ar wif.
ZMD_17_Ksenija.Jakuseno.docx	Julija.Putrina	5. Finanšiālais nodrošinājums:	10	Varbut var piesaaitit kaadus investorus?
ZMD_17_Ksenija.Jakuseno.docx	Julija.Putrina	6. Uzņēmuma spēja realizēt ideju:	9	Bet ka to realisees? Ko jaizdara pirmkaat? otrkaat?

Fig.6. Peer assessment and feedback summary

Administrator's and tutors' login windows, as said before, are similar to the users' ones. However, after authentication and authorization windows with a link for tutors' guidance input opens (Fig.7).



Fig.7. Administrator's and tutor's desktop with a link for guidance input

By clicking on the guidance input link, the tutor's guidance input page opens (Fig.8). The tutor has possibility to write corresponding notes and suggestions related to specified work or question, and leave links to external educational materials.

Ieteikums biznesa plānam:	Ieteikums md3	Ieteikums md4	Ieteikums md5	Saglabasana
root				Save
root3				Save
test				Save

Fig.8. Tutor's guidance providing page

Testing of ePortfolio experimental prototype in Living Lab

Taking into account that Living Labs are intended to involve users in the innovation process, knowledge sharing, exploration, experimentation, assessment, co-creation [7], and development of improved products, after creation of the first experimental algorithmic ePortfolio model the prototype of such system was introduced and conducted for „Business Planning for Open Markets” (BPOM) blended e-learning course bachelor study programme students by the Distance Education Study Centre (DESC), Riga Technical University (RTU), in the autumn semester of study year 2011/2012.

Besides, there was a necessity to analyze also students' competence development and change dynamics. To ensure competence development process recording, existing RTU student's educational web portal, named ORTUS, which is built on the open source Moodle software, was used and eight self-assessment survey lists were created [8].

254 first year bachelor study programme students were enrolled to BPOM course. 197 of them completed initial self-assessment outside ePortfolio system (i.e. it was done within study portal 'ORTUS'), 159 learners

submitted the eighth, final self-assessment questionnaire form. 173 students passed an examination at the end of course. From all enrolled students 56 learners took part in all groupwork activities within ePortfolio system, i.e. all five times; 16 students also were very active – they participated in four groupwork activities; 19 students were rather moderate – three groupwork activities; 27 students were less active – two activities; 39 students were inactive – only one groupwork was done; and 97 did not participated in any of ePortfolio groupwork activities.

After course initial stage of four weeks when students were asked to make their first self-assessments and take the first test, teaching staff introduced ePortfolio experimental prototype which were built specially for the BPOM e-learning course. The link to particular group to work on the first group task within ePortfolio system was opened (Fig. 9). The groups of four students each for the first (of totally five) group work were formed in line with a sequence of submitted accomplished homeworks No.1. The same procedure applied to the group formation for the second group work. Further composition of group members did not change until the end of the course. The purpose do that was our cosideration that assignments for groupworks No. 2-5 were tightly tangled, the third homework was built on the second homework conditions and results, the fourth homework – on the third, and the fifth – on the fourth one. Thus, from our point of view students were able to give a good account of themselves, become more familiar with with group members scope and their work direction, provide information on suggesting better improvements for their group members' works, and increase a dynamics of competence development. Here we can draw paralells with project teams building when project members are asked to contribute their proposals regarding project tasks.

Though, analising students activities within ePortfolio system we have considered that due to rather high drop-out percentage from the course several groups lost from one to two group members during ePortfolio groupwork activities from the second to fifth assignment. A few of groups lost even three participants. Accordingly, our competence development motivation tool was unable to offer a knee to only the one student in respective group. To avoid this in future it would be preferable to form students groups for each next groupwork anew. On the other hand, the loss of group members imitates joint project challenges and real-work conditions when a project partners are working on the certain collaborative tasks and have to make appropriate contribution to workpackages. The project must go on even in case when some of project partners, who have contributed before, leave the project.

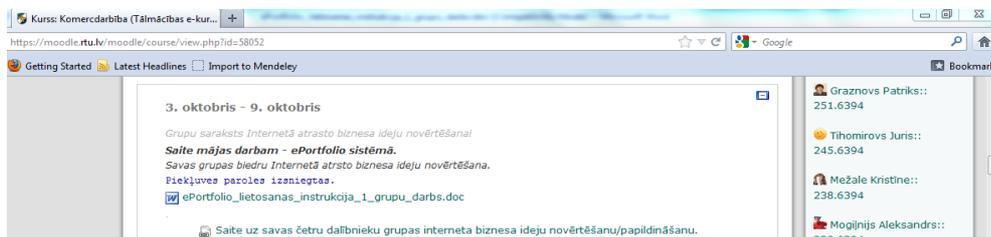


Fig.9. Link to the ePortfolio system

Students performed their groupwork assignments according abovementioned notes given in previous chapter „Students' and administrator's windows within ePortfolio system”. Figures 3 – 8 illustrate that.

Students were asked to complete given tasks, upload their accomplished homeworks on the university's study portal 'ORTUS', login onto their ePortfolio group, make self-assessment of own work and competence levels, assess group members work, analyze, give them appropriate suggestions, and for their part acquaint themselves with group participants feedback, estimate, analyze and select constructive ideas, think about possibilities to improve own work, and update initial drafts if possible.

Two ways of login onto ePortfolio system were offered: one – through study portal 'ORTUS' and another one – by typing ePortfolio URL (<http://85.254.226.33/ePortfolio/>) in a Web browser's toolbar. The second option was proposed to allow users of getting directly into ePortfolio system.

The data of students activities within ePortfolio system were recorded, collected in the 'MySQL 5.5.16' data base, processed, and sent to the tutor's dashboard (Fig. 10) through established links. This 'Excel' view dashboard was developed to observe and analyze learners activities and achievements in both RTU DESC experimental ePortfolio and university's 'ORTUS' information systems. It might be used also to take immediate actions influencing groupwork activities and competence development process.

group works within ePortfolio (e.g., 5 group works – the most active users, 4 – active, 3 – moderate, 2 – less active, 1 – inactive, and 0 – the most inactive).

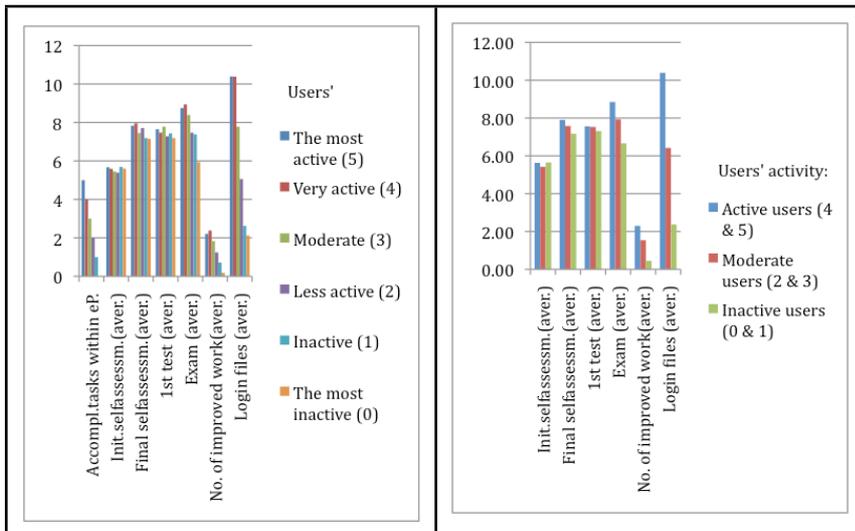


Fig.12. Average competence development correlations with ePortfolio activities

We have also found that the number of improved homeworks has direct correlation with the number of ePortfolio login files. More active students much more take part in offered group work activities. It could be established a fact that users' reflection on critical thinking notes and constructive suggestions leads to a creativity, synthesis and competence development. As a result, the number of corrected, slightly improved or cruissal processed product depends on users activity level within ePortfolio system.

During the BPOM course in the Fall, 2011, totally we have received 312 improved works. This number shows that:

- the second homework was improved 78 times;
- the third homework was improved 66 times;
- the fourth homework was improved 65 times; and
- the fifth homework was improved 103 times.

There was no obligation to make any homework improvements after first group work activity.

Analyzing statistics of improved works we were surprised of the fact, that there were several improved works developed by students, who did not take part in any of ePortfolio group work activities (for instance, the second set of columns from the right in Figure 13). It might be explained by their interest („what's going on") in ePortfolio working processes. Their accomplished draft homeworks were placed onto ePortfolio system in one of system's groups. Despite their indisposition towards group-working, few of these students took a look into appropriate group members feedback, as we can see at the last column of the Figure 13 („Login files (on average)"), went over, selected ways for necessary corrections, and made improvements in the final version of the homework.

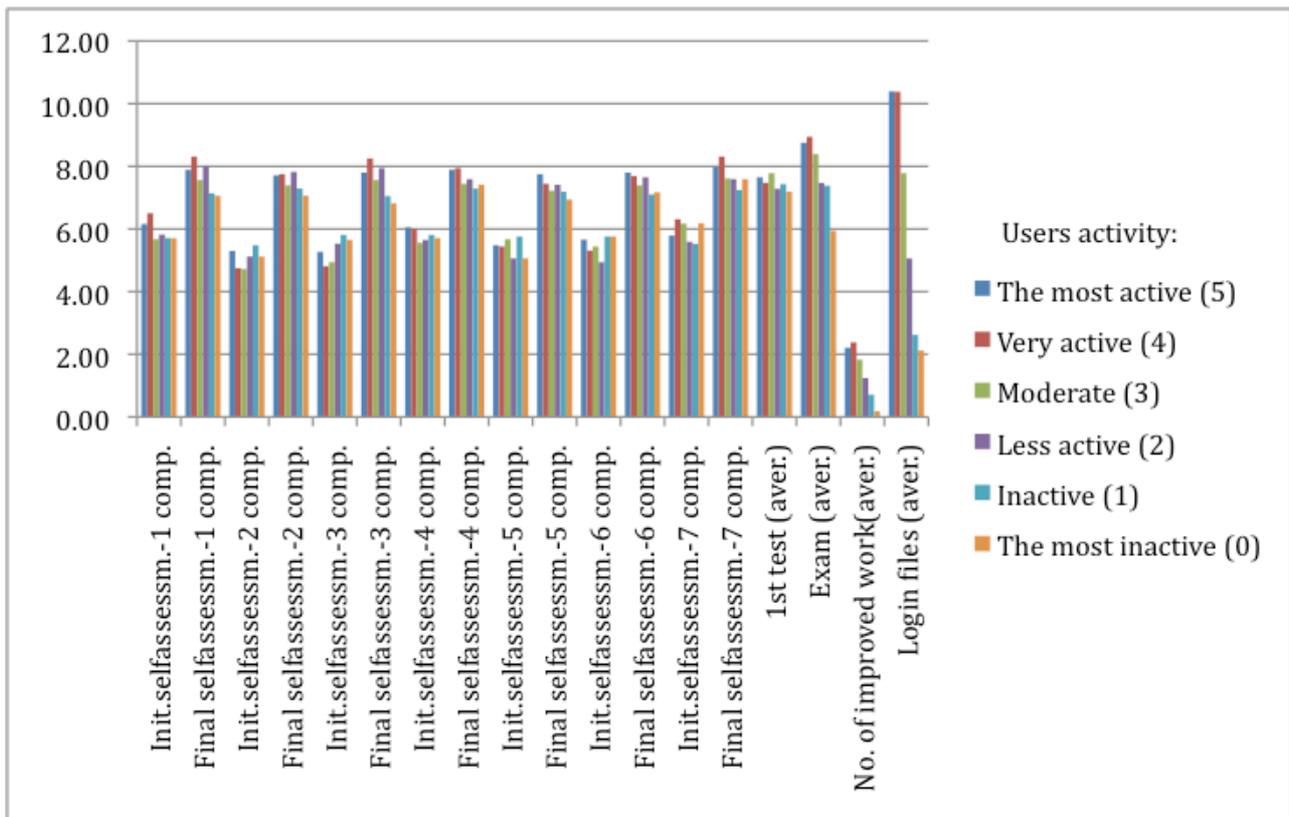


Fig.13. BPOM seven competences development correlations with ePortfolio activities

At the first experimental stage the option of delivering learning suggestions were enabled for tutors' usage close to the end of the course. In addition to that we had lack of available instructors to be involved in groupwork activities. Thereby this option was not exploited so powerful as we planned. In next prototype testing stages we expect this tool will work better.

Conclusions

Summary

To facilitate competence development the new experimental ePortfolio system algorithmic model was developed and prototype, which supports Latvian language, was tested in Living Lab. Developed system prototype differs from traditional ePortfolio systems by motivating approach in acquiring of competences, involvement in group-working, increasing responsibility both for own and peer achievements, and comparison of scores, study results, assessments and competence development levels along the whole course study period in two educational systems: university's study portal 'ORTUS' and ePortfolio ones. Offered ePortfolio algorithmic model ensures collecting the data (marks and recommendations) from all assessments and opening them up for the appropriate ePortfolio group members; consequently, students have an excellent possibility to improve their work and develop required competences.

There are some considerations to improve this system's efficiency:

- Necessity to automate students homeworks sending to the ePortfolio system.
- Necessity to automate working group formation based on the „first come, first served” basis.
- ePortfolio group formation ought to be organized for each groupwork anew.

Conclusions

There is the correlation between students' activities in ePortfolio system, on one hand, and their test marks, exam results, and achieved competencies, on the other hand. New system encouraged students to think critically; ePortfolio students' groups with high activity achieved better outcomes rather than inactive ones.

The system made it possible to break the neck of the most complicated course themes, as well as make improvements of students' exercise works. Reflection on feedback is of the last importance in the improvement of the learning outcomes.

Final self-assessments correlate with exam results, groupwork activities and the number of login files to ePortfolio system. Final self-assessments can indicate students competence development.

Further work

To solve the problem of creating the ePortfolio expert system emulating the decision-making ability of a human expert [9], which would be equipped with recommendations or suggestions generation tool, the DESC RTU are going to develop new algorithmic model and launch the second prototype of interactive ePortfolio system in further study years. Figure 14 provides a small insight into the model which RTU DESC is working on. It might be said that next generations of ePortfolio systems will not be able to imagine without artificial intelligence traits [10].

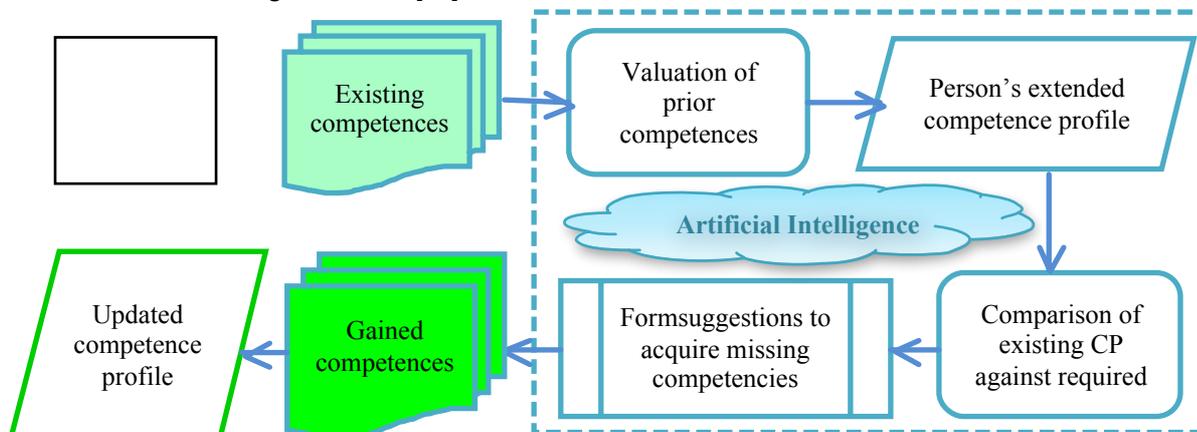


Fig.14. Further prospective ePortfolio system rough model

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E-Portfolios and Assessment: Design for an Authentic Program Evaluation

Judith Simons Gold Marygrove College Detroit, Michigan

Introduction

The accreditation process at Marygrove College in Detroit, Michigan has gone through many permutations, from total paper and pencil records keeping to one that is now totally electronic. The Higher Learning Commission, the association that accredits universities and colleges in the United States, has established specific criteria for each program assessment. Marygrove is in the process of preparing for an HLC on-campus visit. The accreditation team visits every ten years. If there are no major issues, accreditation is granted. If there are elements that need tweaking, a two year for five year review is required.

It is my responsibility to prepare an electronic program assessment in preparation for the HLC visit. As a long tenured faculty member in the Computer Information Systems department it is imperative that the program assessment be authentic, exhibit the integrity of intellectual property and be user friendly.

Usability of the e-Portfolio is paramount as it will be looked at by faculty, administrators, students, and the external accreditation team. The interface must be user friendly, easy to navigate and customize, in addition to being aesthetically pleasing. With those considerations in mind, it appears as if the course management tool used on campus would be prudent. Marygrove College uses Blackboard.

Blackboard has e-Portfolio modules that can be incorporated with the software in place at the College. The advantages are that it is a College supported system, familiar to faculty and students, and the integrity of intellectual property and academic authentic is ensured.

Purchasing e-Portfolio software was not an option. Sixty percent of Marygrove College faculty is hesitant in the use of Blackboard. In many instances it is not used to its full capacity. With that in mind, it was best to stay with software that is in place at the College. Hopefully, in time, faculty who are reticent in using Blackboard will become familiar with the available modules.

Preliminary Model

The following worksheet was developed for the program assessment process in 2008-2009. This model was useful in organizing the assessment process. The detail required to answer each question helped faculty focus on the nuts and bolts of the academic program.

Academic Program Assessment Process Worksheet

Assessment Components	Questions to be Answered
<p><u>Component 1. Identifying Missions</u> Each academic program determines which aspects of the College mission relate to the department's programs or operations.</p>	<p>What is the mission of the program?</p>
<p><u>Component 2. Stating Goals</u> Each academic program develops a goal statement that stems from those parts of the College mission it had determined are most relevant to it.</p>	<p>What are the goals of the program in relation to students learning and teaching effectiveness?</p>

<p><u>Component 3. Identify Program Learning Outcomes</u> Each program will identify the student-learning outcomes it intends to achieve. Each program may establish benchmarks for students learning outcomes.</p>	<ol style="list-style-type: none"> 1. What should students be able to know, think and do upon completion of the program? 2. What are the benchmarks for the student learning outcomes? (At what point in the program should students achieve the learning outcomes?) 3. Do the learning outcomes support the states goals of the program? 4. Do the learning outcomes align with the professional standards and external accrediting bodies? 5. Are the outcomes stated in measurable terms?
<p><u>Component 4. Identify Methods of Assessment and Criteria for Success</u> Each program develops measures to assess learning outcomes and establishes criterion for successful completion of each learning outcome.</p>	<ol style="list-style-type: none"> 1. What methods or instruments are used to measure achievement of the learning outcomes? 2. What is the criterion for successful completion of outcome? Criteria for success can be stated in qualitative and quantitative measures.
<p><u>Component 5. Collecting Assessment Data</u> Each Program gathers and documents results of assessment.</p>	<ol style="list-style-type: none"> 1. What is the process for conducting assessment and collecting data? 2. When and how often will the assessment take place? 3. Who will collect the data?
<p><u>Component 6. Analyzing Assessment Data</u> Each department prepares a summary analysis of the data as it relates to the achievement of the learning outcome.</p>	<ol style="list-style-type: none"> 1. What is the process for analyzing data? 2. When will faculty meet to discuss and analyze assessment results? 3. What does the data indicate about achievement of learning outcome?
<p><u>Component 7. Documenting and Reporting Assessment Findings</u> Each program makes certain that the assessment findings are systematically documented. At the end of each academic year, the program submits a copy of the annual assessment report to the department chair for inclusion in the Department Annual Report and to the Assessment Committee.</p>	<ol style="list-style-type: none"> 1. What is the process for reporting and disseminating assessment findings? 2. Who is responsible for the annual assessment report? 3. Where are the documents and reports houses and in what formats?
<p><u>Component 8. Applying Assessment Findings</u> Each program has a mechanism in place to apply assessment findings for the improvement of teaching, learning, and program development.</p>	<ol style="list-style-type: none"> 1. What is the process for applying assessment findings for the improvement of teaching and learning? 2. Who reviews the findings and makes recommendations? 3. What changes have been made as a result of this assessment? 4. Who is responsible for implementing the changes? 5. How are those changes documented? 6. What is the proposed timeline for implementing changes?

Academic program assessment process 2008-2009.

Working Model

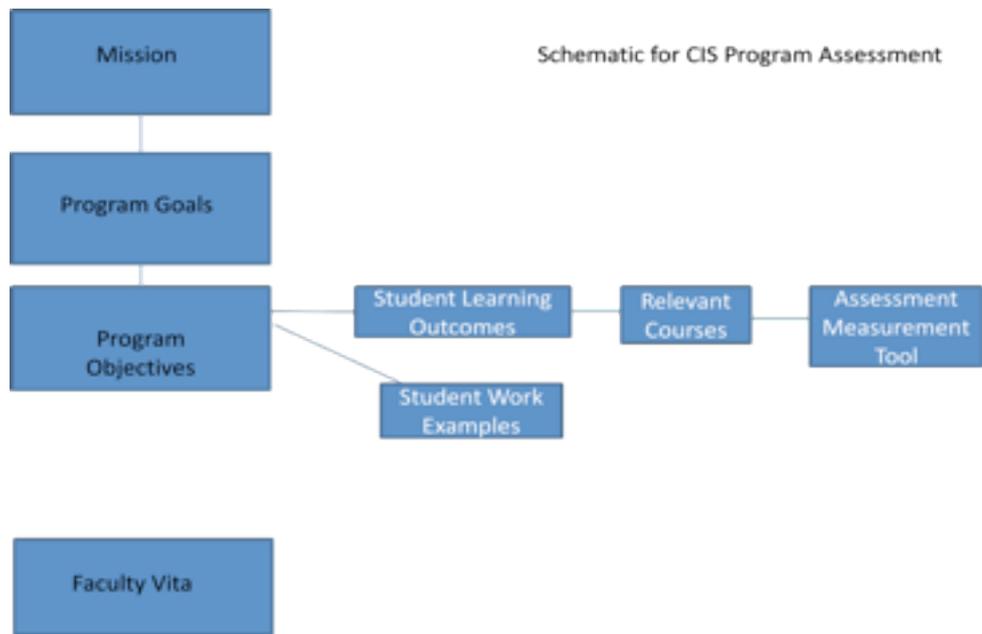
As faculty progressed with the assessment process a new assessment model was developed in 2011. This model has four assessment components and a total of 13 questions to answer.

This model has four assessment components and a total of 13 questions to answer.

Assessment Components	Questions to be Answered
<p><u>Component 1. Learning Outcomes</u> Each program will identify the student-learning outcomes it intends to achieve and then choose which ones it intends to measure.</p>	<ol style="list-style-type: none"> 1. What should students be able to know, do and apply upon completion of the program? 2. How do the learning outcomes align with the college and department mission? 3. How to the learning outcomes align with professional standards and external accrediting bodies? 4. Are the outcomes stated in measurable terms?
<p><u>Component 2. Measures</u> Each program develops measures to assess learning outcomes and establishes criteria for successful completion of each learning outcome.</p>	<ol style="list-style-type: none"> 1. What aspects of your program will be assessed this year? 2. What methods or instruments are used to measure achievement of the learning outcomes? 3. What are the criteria for successful completion of outcome?
<p><u>Component 3. Analysis, Reflection and Action Plan</u> The faculty for each program gather and discuss the data they have about students learning and decide on one or more action items to improve student learning. Each program documents the assessment findings and action plans and submits a copy to the department chair and to the Assessment Committee.</p>	<ol style="list-style-type: none"> 1. What is the process for conducting assessment and collecting data? 2. What is the process for analyzing data? 3. What does the data indicate about achievement of learning outcomes? 4. Based on the assessment findings, what actions will be implemented to improve student learnings? 5. Based on the assessment findings, what improvements can be made to the assessment process?
<p><u>Component 4. Documenting and Reporting</u> Each department convenes a forum where the faculty from their programs present a summary of the reflections and action plans. The department discusses opportunities for curricular changes and considers their implications for resource allocation. The Chair will include the reflection summaries and action plans in the Department Annual Report.</p>	<p>What implications does your action plan have for policy or resource allocation?</p>

Blackboard Schematic

The Blackboard schematic's design has features that may be applied to all College departments. Walvoord (2010) suggests the assessment must include 1) Goals. What do we want students to be able to do when they complete our courses of study? 2) Information. How well are students achieving these goals, and what factors influence their learning? 3) Action. How can we use information to improve student learning



Reflection

E-Portfolios allow one to graphically reflect and assess a program. It serves to empower instructors and administrators to make intentional decisions as they work. Reflective practice can also lead to monitoring and adjusting work in progress (Montgomery & Wiley, 2008). Feedback is a powerful tool that should be used at each stage of e-Portfolio development. It is imperative that instructors' know if

they have met program goals and objectives. If not, adjustments should be made to adhere to the agreed upon standards.

Conclusion

The needs assessment, design and development of e-Portfolios to be used for program assessment is an overwhelming challenge. The process becomes easier to manage if one uses modules each step of the way. Following the working model (above) helped keep the project on course.

The Blackboard version of this e-Portfolio model will go online Fall 2012. At that time it will be a Beta version, to be modified as needed. Once all the muddy areas are adjusted and corrections made, it can be transported to other departments at Marygrove College.

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Fitness to practice, Shipman and evaluating the role of ePortfolios

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Context

Dr Harold Shipman is thought to be one of the most prolific serial killers of UK history, killing more than 200 people in 23 years (Smith 2002). How a respected doctor in his community was able to perform such atrocities has created a number of questions on how we assess fitness to practice. This paper will explore the use of the ePortfolio in assessing doctor's fitness to practice and addressing the concerns highlighted by the Shipman Inquiry.

Events such as the Shipman murders have led to increasing public, media and political scrutiny concerning the notion of a doctor's fitness to practice; as a consequence a doctor's fitness to practice is no longer assumed, instead it must be proven (Boursicot et al. 2011). In the UK the Shipman Inquiry played a key role in identifying the shortcomings of the system and calling for reform and improvements in the way fitness to practice is monitored and assessed (Smith 2004). This in turn has given rise to increased emphasis on continued professional development, competence and its assessment (Southgate et al. 2001). It has been suggested that ePortfolios provide the opportunity for continued assessment of a Doctor's fitness to practice particularly as part of the revalidation programme developed after the Shipman Inquiry (Smith 2004) and are due to play a key part of its implementation in the UK (RCGP 2012). In order to help restore the public's faith in the medical profession it was considered essential that independent practitioners demonstrate their fitness to practice not only at the point of independence but also at all levels of training.

Objectives

This paper explores the impact of the Shipman Inquiry and the role of the ePortfolio in determining if a doctor is fit to practice in the UK including whether he or she should be added or removed from the General Medical Council (GMC) register. The methods of investigation used here are a combination of a literature review with a critical assessment of the evidence; particularly in the light of the author's pre and post registration training experience as a medical doctor. (This is the first stage of forthcoming research interviewing stakeholders on their experiences of using ePortfolios in determining a doctor's fitness to practice.)

This paper commences with a literature review examining the definition and meanings of competence and performance in relation to fitness to practice. This is a prerequisite for considering the use of the ePortfolio in GMC revalidation following the recommendations from the Shipman Inquiry.

Fitness to practice, competence and performance

Fitness to practice, for doctors in the UK, is set out and regulated by the GMC (Great Britain Parliament 1983); their policy statement (GMC 2001) on the meaning of fitness to practice considers that doctors must be competent in what they do, respect patients rights and autonomy, live up to the trust placed in them and adhere to the publication Good Medical Practice (the publication has subsequently updated: GMC 2006, 2009). This statement and practice document will be used as the definition and basis for evaluation of fitness to practice in this paper.

Clinical competence forms a key part of the GMC's definition of fitness to practice (GMC 2001), which is mirrored in most other medical institutions. The GMC does not define the term competence and a review of the literature demonstrates there are several dimensions to clinical competence and a lack of consistent definitions. This lack of consistency among definitions leads to challenges in assessing the literature as different concepts may be considered under the same guise of 'competence'. If the literature has no consistency as to the definition of competence then how are we to apply it in the assessment of a doctor's fitness to practice.

Boursicot et al. (2011) define competence as: what the individual is 'able to do' in clinical practice; distinguishing it from performance: what the individual 'actually does'. The inclusion this definition of performance can be argued as crucial in the assessment of a doctor's fitness to practice with what the doctor actually does in practice being at the forefront of any notion of competence. Harold Shipman, for example, may have been *able* to treat his patients in an effective manner but did not act on that competence.

Many definitions of competence refer to a single act or skill, in contrast, Epstein and Hundert (2002) build on the concept of professional competence encompassing prior definitions including the Accreditation Council for Graduate Medical Education (ACGME) categories of competence (Swing 2007). Epstein and Hundert (2002:226) define professional competence as:

'The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served.'

This definition attempts to characterise a holistic view of clinical competence encompassing more than just individual competencies. There is greater emphasis on moral, emotional and relationship factors (Leach 2002) than was seen with previous definitions attempted by Rethans et al. (2002) and Miller (1990). The importance of assessing moral competence alongside technical is particularly pertinent in the case of Shipman. With Epstein and Hundert's definition (2002) there is further acknowledgement of the need for tacit knowledge, rather than just the explicit knowledge (Polanyi 1974) which has traditionally been examined (Miller 1990). It is this tacit knowledge (Polanyi 1974) and ability to manage not just problems but uncertainty along with habitual practices that result in competence translating to performance (Schon 1983) - a concept which Epstein and Hundert (2002) can be seen to be attempting to incorporate into their definition.

An important consideration given by Epstein and Hundert (2002) is that competence and performance are developmental, impermanent and context specific. The argument that context needs to take into account the task at hand (Klass 2000), the clinical context and the ecology of the health system (Kane 1997; La Duca 1984) in combination with the doctor's ability is important in such a broad spectrum of specialties with varying grades and levels of experience. From reviewing the literature, it is concluded, that this definition of professional competence as set out by Epstein and Hundert provides one of the most comprehensive and holistic insights into the qualities required for clinical performance. The ePortfolio provides a potential resource for real-time context specific assessment of the performance of the doctor in question and thus their fitness to practice.

Assessing fitness to practice and the use of the ePortfolio

The Shipman Inquiry concluded the medical appraisal system, at that time, had some education benefits but was critical of its inability to detect unsafe practice whilst promoting good practice. The assessment of a doctor's fitness to practice forms a high stakes summative assessment, its failure to identify and remove unfit doctors can result in catastrophic consequences (Rethans et al. 2002) as demonstrated by the Shipman Inquiry. This suggests, to me, that the assessment system for fitness to practice should be functionally distinct from the promotion of excellence.

Several institutional and regulatory changes have been recommended and implemented as a result of the Shipman Inquiry and its subsequent reports (DoH 2006; Greenhalgh and Wong 2011). One of the proposed solutions is to create a proactive system of continued fitness to practice assessment throughout a doctor's working life is revalidation. The new revalidation system, currently being introduced in the UK, is described by the GMC as 'the process by which doctors must demonstrate to the GMC, normally every five years that they are up to date and fit to practice' (GMC 2012b). It is based on a portfolio of documents including annual appraisal with the development of a personal development plan, evidence of continued professional development and Multi Source Feedback (MSF) of which the ePortfolio will play a key part. These subsequent revalidation plans are more comprehensive than the previous continued professional development system for example taking into account consultations from sources including patients and lay people. However, the proposed system still fails, in my opinion, to address a large number of the shortcomings of the original system.

The Inquiry and its subsequent reports commented on how doctors were perceived as looking after their own with the GMC accused of harvesting a culture and membership too likely to support the interests of doctors rather than protect patients (Smith 2004; DoH 2006). This has led to the involvement in other bodies in the regulation of doctors with the creation of the Council for Healthcare Regulatory Excellence (2002). In a system where peer, patient and institutional referral (both internal and to the GMC) had traditionally provided a safety net (DoH 2006) against unfit practitioners the culture of an 'old boys' club where doctors did not speak out against their colleagues also needed to be addressed.

One proposed solution has been Work Based Place Assessments, including anonymised MSF, which constitute part of the ePortfolio and will play a central role in the revalidation system (RCGP 2012). These ePortfolios are now used in the UK for both formative and summative assessment, and example of which is the UK Foundation Programme (Colleges et al. 2010). The MSF tool provides anonymised feedback from a

range of healthcare professionals on the overall performance of a trainee, not only specific instances (Norcini 2007). Despite the concerns outlined by the Inquiry on the cozy culture of doctors looking after their own (Smith 2004) trainees them (Norcini 2007) this, in my view, provides scope for selection bias. Efforts have been made to reduce bias, increase reliability and validity through anonymity and increased numbers of assessments (Smith 2004; Norcini 2007) both of which are aided through the use of the ePortfolio. It does however, remain unclear as to the optimum number of assessments required to achieve reliability (Bouriscot et al. 2011) and their feasibility in practice (Norcini 2007). There has been positive evidence for the use of this tool, for example at the University of Missouri-Kansas the obstetrics and gynecology department demonstrated negative professional behaviors being appropriately highlighted by peers (Ramsey et al. 1989). The Question remains, however, if such a tool would have highlighted the practice of Harold Shipman who was a well liked individual by his colleagues.

Any assessment by colleagues needs to be continuous and within the context with which the doctor is expected to work (DoH 2006; 2007a&b). Context has already been shown by Epstein and Hundert (2002) to play a key part in the definition and application of competence. Assessment should therefore evolve and be adapted as a doctor's career progresses, the scarcity of continued assessment on fitness to practice throughout a doctor's career, was however, a further issue brought to our attention in the Shipman Inquiry (DoH 2006). The Chief Medical Officer highlights how an independent practitioner (as a consultant or principal GP such as Harold Shipman) will traditionally no longer undergo formal assessment of knowledge, competence or clinical skills. The report further goes on to demonstrate how this is not consistent with other high-stakes professions such as airline pilots who would typically undergo over 100 assessments in the same period. This poses the question as to why such a high stakes profession such as medicine has been allowed to function with so little continued assessment and regulation, something revalidation aims to rectify.

Despite the importance of revalidation in the assessment of fitness to practice the revalidation process has little in the way of evidence base. Work based place assessments are rarely referenced with respect to their use in assessing ongoing fitness to practice. One of the few studies examining revalidation validity, a randomized controlled study of 66 GPs in Scotland found no difference in self reported outcome between a light-touch, 'criterion-based' model and a more comprehensive, 'educational outcome' model such as revalidation (Bruce et al. 2004). There has, however, been evidence to show improved clinical care with certification in the United States (Kingdon 1995) but this data is not randomised and it is therefore difficult to prove causality. This lack of evidence calls into question the effectiveness of revalidation in the assessment of fitness to practice (Greenhalgh and Wong 2011). It is, however, not until the forthcoming implementation of revalidation that the changes brought about by the Shipman Inquiry and the role of the ePortfolios in this can be fully assessed.

Conclusion

Despite increased attention to fitness to practice, the medical profession has been slow to clarify its definition. There continues to be a lack of consensus and clarity on the definitions of competence, performance and their relation to fitness to practice.

Despite the implementation of changes to the revalidation process in response to the Shipman Inquiry it remains unclear if they will be successful at identifying a future doctor such as Harold Shipman. In order for fitness to practice assessment to be at its most effective a universally consistent and accepted definition of competence and thus fitness to practice is required. Only then can the validity of fitness to practice assessments and the role of the ePortfolio in those assessments be determined.

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Technical and pedagogical feedback on the deployment of an ePortfolio. Models of the uses, analysis and perspectives

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Keywords: ePortfolio, professional insertion, competencies, skills, regional implementation, uses, model

Abstract

This paper asks how are being designed and expected modes of integration of students during and after their university studies in the specific context of development on private and public markets for applications such as e-digital portfolios.

She also questioned the manner in which to deploy the strategies and institutional policies regarding the choice of digital interfaces for the enhancement of learning and using the integration of students and in particular the way is taken into account the research dimension a tool to select and deploy.

To do this, it relies on a study conducted as part of e-inclusion project supported by the Office for Students professional insertion (BAIP) and funded by the University of Lorraine and the Regional Council of Lorraine. This study is based on monitoring of a panel of about 250 students and fifteen teachers experimenting "Lorfolio" in their regular educational setting. Lorfolio is a portfolio of digital skills remotely accessible, for all the assets of a territory, and being developed in Lorraine at the initiative of the Regional Council.

We propose in particular to highlight the returns through the use of specific questions that are generated when it comes to decide on their wide deployment of an institution, consortium or territory. What models to use is based does? What actual uses generates does? How to use these models and are they related to the digital strategies of institutions?

After recalling the context of the study, the actors and the methodology adopted, we will build on the first qualitative and quantitative analyzes performed to establish the first profiles of the perception of the tool from the point of view of students as teachers to measure the impact of such a deployment at institutional level.

Introduction

Background of the study

As part of the research project funded by the university of Lorraine and the Regional Council of Lorraine, LISEC Lorraine Lab³, KIWI team⁴ of LORIA and the department of the digital uses of the University of Lorraine propose to study, analyze and support the use of ePortfolio Lorraine, also known Lorfolio in the university.

It's about understanding how and give teachers and students mobilize the ePortfolio as part of lessons usually taught strategies around employability. In parallel, an analysis of traces of use should generate typical profiles of students uses. Profiles that will adapt the best features found on the interface and to add, if any, resources customized news relevant to learning conditions and needs of specific integration of students.

This study is based on the following assumptions:

³ <http://www.lisec-recherche.eu/>

⁴ <http://kiwi.loria.fr>

- formalization of the activity conducted by students of their formal and informal learning helps facilitate their positioning for their employability.
- making available to students of an ePortfolio helps facilitate the formalization of their achievements and their visibility in the territory of Lorraine.

This multidisciplinary research contributions mobilizes science education that offer an analysis of the formalization of skills allied to the contributions of artificial intelligence in terms of modeling theory and uses of recommender systems. The results and prospects identified will be a basis for reflection by all departments of the University of Lorraine and components concerned with the employability of students.

To put the study in a broader context, we first redefine the concepts inherent in ePortfolio and we will review the implications and interactions and collaborations implemented between actors of this project.

ePortfolios by numbers

Currently, the ePortfolio or digital portfolio is growing both in the educational landscape that professional. Regions, departments, universities, schools, professionals will endow this tool. Nevertheless, the identification of objectives and interests of such a tool does not come naturally to the user.

According to Thierry KARSENTI⁵, over 30 types of portfolio are identified (Developmental Portfolios, Reflective portfolios, Assessment Portfolios, Showcase Portfolios, Working Portfolios,...) with for each different purposes (show what has been learned, that one has reached the targeted skills, highlight reflexive work on their learning, show their skills in order to be evaluated, show that we continue to learn beyond the academic certification, showcases). To this, we can also add the difference made by the French Ministry of National Education between professional portfolio⁶ (portfolio for teachers) and teaching portfolio⁷ (students portfolio), which distinguish objectives centered on learning and objectives focused on Assessment i.e., process or product.

Regarding Long Life Learning (LLL), ePortfolio is a powerful teaching tool to formalize the collection and valorization of competencies (see in particular, LAYEC, J. (2006)). Long Life Learning takes an important place in training institutions, particularly at the university, and brings new practices self-assessment of formal and informal learning.

Thus, the ePortfolio, as a scalable set of materials, resources, ... ie the "sèmes", identifies an individual in its singularity. We can then speak of individuation as a process leading from the undifferentiated to individuate. It is then placed in the footsteps of many authors such as Arthur Schopenhauer and especially Carl Jung and more recently Gilbert Simondon. Consequently, ePortfolios are at the crossroads of two processes of individuation: individual and technology. Thus, ePortfolio should not be seen as a process itself but as an outcome of a process of individuation linking people and technology (Ravet, 2011).

The actors, between university policy and regional policy

Regional Council of Lorraine

The Regional Council of Lorraine is in a regional framework for economical development: « *To address the socio-economic challenges, the Region of Lorraine must address issues of vocational training based on three major principles :*

- *Enhance the human heritage of the Region,*
- *Give everyone the means to become subject and actor of his training course for its personal and professional development,*
- *Mobilize training players to enhance its human heritage.*

⁵ Thierry Karsenti, Chair on information technology and communication (ICT) in Education, Faculty of Education, University of Montreal

⁶ <http://www.educnet.education.fr/dossier/archives/portfolionumerique/usages-enseignement/portfolio-professionnel-de-lenseignant>

⁷ <http://www.educnet.education.fr/dossier/archives/portfolionumerique/usages-enseignement/enseignement-superieur>

One objective of the Region of Lorraine was to offer each people to built a custom tool to enable it to capitalize experiences and training skills». From these words approved by the Regional Council of Lorraine in 2006, the Lorraine ePortfolio project is born.

Starting in 2007, the region of Lorraine entrusted at INFFOLOR⁸ the realization of a opportunity and feasibility study for the development of a customized tool for capitalizing experiences and training. The choice was then focused on the development of an ePortfolio.

First, to realize this study and to take the appropriate decisions in terms of technical and ergonomic specifications of the ePortfolio, INFFOLOR has worked with two experts⁹ in normalization and digital systems interoperability. Second, INFFOLOR partnered with LISEC Lorraine in order to carry an experiment for characterizing the first uses and to imagine first deployment scenarios.

University of Lorraine (UL)

The University of Lorraine has a Help Desk for students' professional integration (BAIP). It is a light structure designed to design the appropriate policies for a better professional integration of students. In this context, the research project "e-insertion" which aims to answer the question, «How digital environments can enforce professional integration strategies of the students?» aims, by its approach based on interdisciplinary research, to analyze the uses of populations of students et to offer tracks that will support the policy at the University of Lorraine level. The University of Lorraine eLearning department is also involved and works in the development of observation protocols and contributes to the analysis of results.

Laboratories

The research teams involved will work on complementary approaches based on uses modeling and qualitative analysis of pedagogical uses to have an analysis combining mathematical models of the real uses and qualitative analysis coming from questionnaires and interviews with both students and teachers. The diagram below shows the general process of interaction between the chosen approaches:

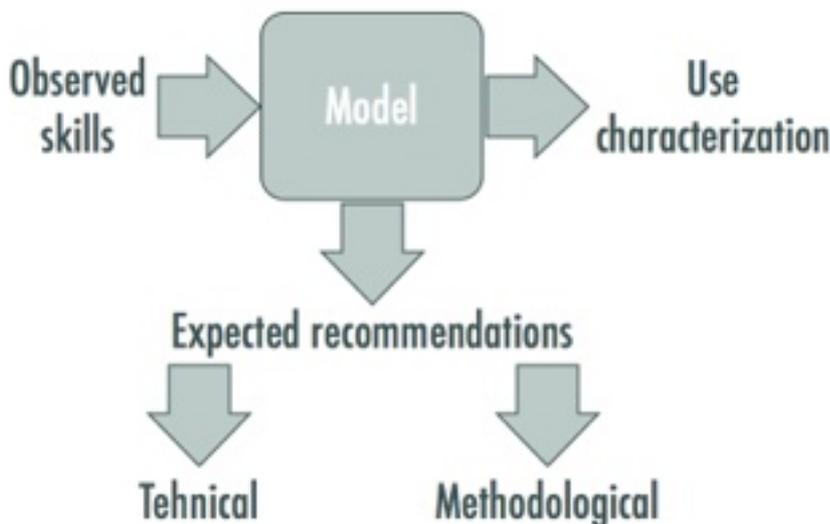


Figure 1. Modeling strategies

The objective of the work carried out in the KIWI (Knowledge Information and Web intelligence) team in LORIA aims to improve the quality of service provided by a computer based system (such as a corporate intranet, an online digital library, an information portal, the Internet, an ePortfolio, ...) to a specified user or not. The general approach can be outlined as follows:

- Learning models of user behavior, from the observation of their interactions with the system,
- From the observed behavior, planning actions that the system must perform in order to provide a customized service to user expectations.

⁸ <http://www.inffolor.org>

⁹ Monique Grandbastien, Bernard Blandin

It is part of a holistic approach for uses analysis which can be outlined as follows: To provide the accurate content at the right time is a key factor for an efficient delivering and sharing information systems.

Thus, recommender systems allow users to find resources that meet their needs by suggesting specific digital resources. Many approaches have been used to design recommender systems, including collaborative filtering, content based recommender, or users tracking by trajectories modeling in the recommender space. In this study, traces left by ePortfolio users will be the sets of data used to compute the models for the implementation of recommendation strategies.

ATIP Team (Activity, Work, Professional identity) in LISEC¹⁰ laboratory is working on many learning processes having in common the links between activity analysis, identities and competencies in a professional environment. Whether the education market, social recognition of professional knowledge, procedures, guidance, work, the formalization of the activities of actors is at the heart of this research.

Applied methodology

The research is organized in three phases and includes three sets of qualitative and quantitative data:

- Set 1 consists of survey results, obtained before to the first use of LORFOLIO: survey by questionnaire carried out among 256 students who have been supported to elaborate their career plan (Personal and professional projects or specific course) and among 15 teachers.
- Set 2 contains first feedbacks from students and teachers. It also includes the analysis of the traces.
- Set 3 contains interviews with subsets of students and teachers after the end of the experiment.



Figure 2 – Project timeline

All the interactions generated between the structures (research, teaching, administrative) will help to show the various processes involved in the use of LORFOLIO. Below are represented actors, actions and expected results.

¹⁰ <http://www.lisec-recherche.eu/>

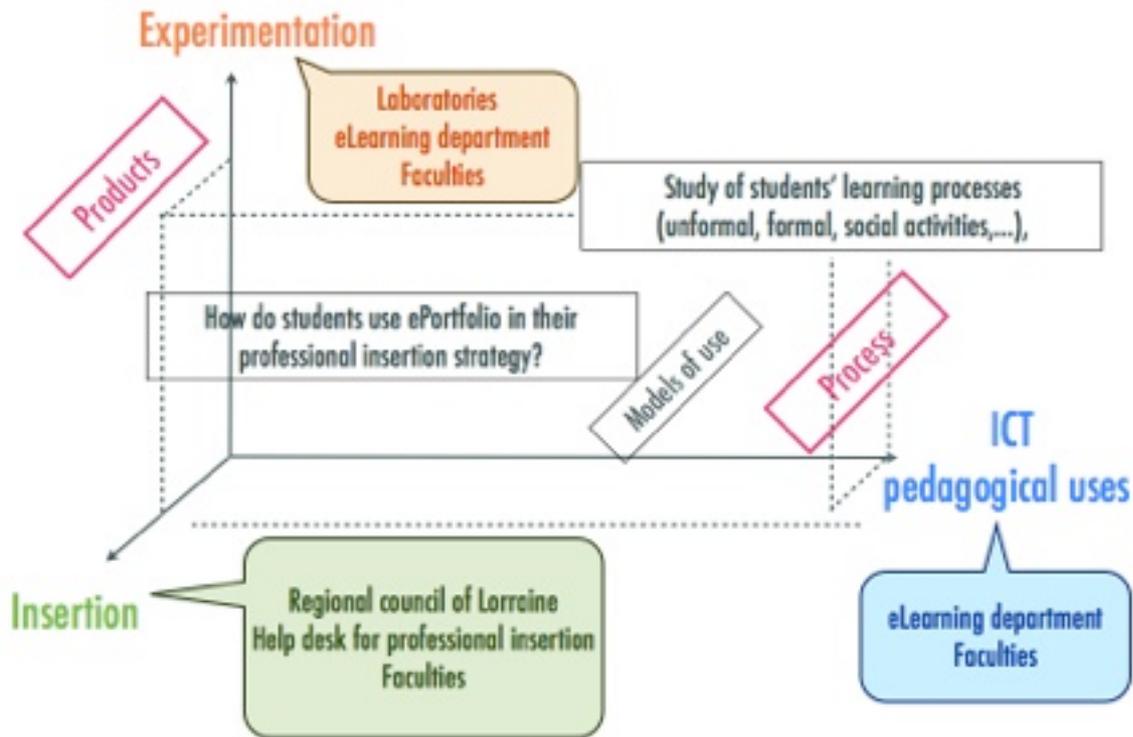


Figure 3 – Observation process

First results

Students – technological profiles

The analysis of the first set of data enables us to identify students' technological profile.

Their privileged mean of communication is Internet with its different possibilities of exchange such as email, instant messaging and social networks as Facebook. The use of Internet is close to the use of mobile phones. Then, marginally, students use mail post and face-to-face exchanges.

The preferred sources of information are of three categories:

- Internet: it is difficult to know what are the used online resources; Internet has been used as generic with no precision even if many cited examples are « wikipedia » and « google »,
- Traditional sources of information are Books, newspapers and sometimes libraries. We can also mention magazines, press and encyclopedia,
- Television

98% of the students surveyed have a personal computer and 7.3% of them share it with their family. Only 2% of students have no computer. The large majority (96%) used the Internet daily. 48% say they spend 2 to 3 hours per day on their computer against 30% who spend less than 2 hours.

They all have internet access. They say to connect from their mobile phone, WiFi hotspots in public places, streets, universities, among friends, at home and in restaurants ...

30% of students consider themselves "regulars trying to get by" and over 60% identify themselves as "regulars who know their way". 99% of them sent their first email before the age of 19.

Their Internet use can be classified into five categories listed below in order of importance:



Figure 6 – Cited functionalities of an ePortfolio

Students – log analysis for the period from October 2011 to January 2012

The goal of the users on this portfolio website is the construction of their cv and portfolio. To reach this goal, they have to perform some tasks, such as filling some personal information, competencies, etc. Each task may be made up of several actions. For example, filling personal information, can be divided into filling one page to provide with information about name, age, sex, and filling another page about address, phone number, etc.

The characteristic of this website is that the order of the actions that the users have to perform to build their cv is not predefined, they can perform them in the order that fits them the best.

The question we ask is if they tend to perform these actions in the same order, or if there are some prototypes of behaviors. More formally, by exploiting the logs of this website, we aim at discovering frequent sequential patterns of usage, if exist. To perform this task, we propose to exploit data mining algorithms (Han, 2006). Based on the assumption that the action a user performs at a given time on the website, depends on his/her past actions, we propose to exploit a K-order Markov Model (Rabiner, 1989). Such a model assumes that an action depends on exactly the K preceding actions. This model not only learns the sequences of actions of size K+1 that users perform, it is also a predictive model that may be used to predict the action a user should perform, given his/her last K actions.

This model may be viewed as too strict, as we can naturally imagine that an action may depend on less than the last K actions. Thus, we propose to exploit an all-kth-order Markov Model (Pitkow, 1999), which learns the sequences of actions of size from 1 to K and uses these sequences to predict the action a user should do.

Such models have been used to recommend actions in the frame of several domains, such as the Web (Deshpande, 2004), e-commerce (Lu, 2009)

On the observation period that runs from late October 2011 to January 3, 2012, visits of the website are mainly divided as follows:

- 234 connections, 229 only connected once and 21 connected 5 times

Finally, the sequences of most frequently visited pages are:

Over this period, we have obtained 21567 *5grams*¹¹ and 11094 are distinct. We chose *5grams* because they represent the optimal length of navigation within LORFOLIO. The most significant results show that:

- 697 *5grams* lead users to generate a resume (PDF and/or Word files)
- 207 *5grams* show navigation through competencies topics
- 119 *5grams* show navigation through training topics

¹¹ 5gram: Sequence of 5 different viewed pages

Clearly, in the early days of the use of LORFOLIO, students have only export their resume to print it (PDF, rtf or sxf formats). Unfortunately, categories related to the formalization of competencies are not really used. This corresponds to the listed statements in the previous section.

Teachers –pedagogical and technical skills

Teachers interviewed can be classified as "digital migrants". However, they are advanced users of the Internet, they are aware to leave traces on the networks and they are aware of the encountered. Unlike their students, they are not users of social networks. Thus, one of the teachers surveyed had already created personal web pages and only two teachers have profiles on social networks (facebook for one / facebook, viadeo and linkedin for the other).

They all indicate that the digital environment is essential for their educational and administrative activities.

Their objectives are then organized around three topics:

- Objectives rather focused on job search activity and the way to introduce it pedagogically, with the desire to standardize practices of students in job search (*write a resume, prepare a job interview, provide evidences,...*)
- Objectives rather focused on supposed prerequisites to get a job, most often presented in terms of knowledge to be acquired (« *Know company, the environment, ...* »)
- Objectives rather focused on students to help them to achieve reflexive posture (« *self-knowing, identify own means, ...* »)

Teachers surveyed consider ePortfolio through three dimensions: self-learning, self-evaluation, self-actualization.

For them, success regard to the professional insertion depends on two factors: on the one hand the mobilization of "good" means, (traditional and networks) and on the other hand self.

Finally, according to their perception, added value of the ePortfolio is in its numerical characteristics (storage, ease of use, format) but especially in the educational opportunities it offers: "*different way to motivate students, to be efficient, communicate more widely.*"

However, they mention some risk: e risk of "formatting" the work done by the student, risk of standardization of documents produced, risk due to non respect of privacy.

Analysis of the results

Students have a digital profile quite different from that of their teachers, they are more familiar with social networks. However, they include only marginally the question of their professional integration in their use of the web and they seem unaware of the impact of their current uses on their present and future social visibility. Most of them count on their relationship (family, friends and professional) to find a job. When they prefer networks, they ask mainly to private networks. Finally, the analysis shows that LORFOLIO has been only used as a technical tool (to write a resume and to export it to text files).

From teachers' point of view, LORFOLIO is also seen as a tool (to produce documents related to a search for a job). But, the pedagogical considerations to support this production are mentioned in their speech. These two observations call for few remarks.

These observations need to recall Jean Heutte when he says in "le Livre Blanc" concerning the reflective process underlying the use of an ePortfolio.

« Est considérée comme relevant d'une "démarche ePortfolio", toute démarche réflexive d'un étudiant sur son parcours, ses apprentissages, ses expériences, ses compétences ou encore ses réalisations et visant à capitaliser dans un environnement numérique un ensemble évolutif de documents et de ressources électroniques qui décrit et illustre toutes ces dimensions biographiques » (cité par Heutte,J, livre blanc,DGSIP TICE, MEN).

We can see that their expectations reach this objective even if the related pedagogical processes remain to be invented. Two main aspects have to be considered:

- To support of the process other than in the form of a transmission of knowledge
- To solve the problem they have to clearly identify what is related to professional integration strategy.

In this perspective, the implementation of the ePortfolio may then appear as a lever because teachers see it as a way to interest and to mobilize their students more.

The students whose responses show very clearly that they separate their personal and social activities of their academic activities, seem to develop a perception of their professional integration that does not predispose to a strong commitment to a reflective approach. It therefore remains to persuade them. The future results will show how teachers have set up their teaching methods:

- How a support system of this reflective work has implemented
- With what observations?
- What impacts on the students?

There is indeed much to expect from these experimental moments implemented in institutions.

Concerning the institution, the University of Lorraine, currently undergoing reconfiguration, intends to make the professional integration of its students one of its objectives and its major strengths. While it is too early to know what his policy on implementation of digital devices, the university has expressed strong expectations about the results of this experiment that ended in June 2012.

Conclusion

Have a combined analysis of the uses and perceptions of students and teachers through the implementation of a numerical tool which can be assumed that it will impact the process of individuation is an extremely rich field for observing the development of teaching practice.

The implementation of such a tool at the university is not trivial. Indeed, it appears attractive to teachers, due in part because they see it more fun, less austere, more readily used by students. However, the observed student practices show that the conditions for an intensive use of ePortfolios are not necessarily present. In particular, the pedagogical forms related to a reflexive approach remain to be invented. In this perspective, these experiments used to test and to formalize new forms of teaching. Some aspects have to be studied:

- Only one tool will not be able to support diversity of practices and teaching profiles
- What added value of the ePortfolio in face of professional social networks as LinkedIn?

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Social Capital: Determining a Student's E-Portfolio Net Worth

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Abstract

Many schools or individual departments require student e-portfolios. The e-portfolios are used for different reasons including assessment, employment, internship, and/or co-op purposes. However, getting all students to “buy-in” to the idea of developing an e-portfolio is a daunting challenge as most academic professionals are well aware. There is increasing concern on the part of the student that e-portfolios are not relevant for employment purposes. From the first year through the senior year, Bachelor of Science in Management (BSM) students at Wentworth Institute of Technology are required to compile an e-portfolio of their work in consultation with their academic advisor. Since 2007 we have been struggling with helping students develop professional looking e-portfolios. Over the years we switched from static built web sites, to LinkedIn, and now we are using WordPress.com. Student e-portfolios look much more professional since we made this switch. In many ways students are building social capital for themselves through the use of an e-portfolio. But, what exactly is the net worth of an e-portfolio for a student? Developing a professional looking e-portfolio goes well beyond building social capital for the student. We define net worth as it relates solely to e-portfolios. We also propose a methodology or model that can be used to determine the net worth of a student e-portfolio. We conclude by summarizing that the net worth of an e-portfolio can be broken down into heuristic patterns that add value for the student.

Keywords: E-portfolio, social capital, technology, educational assessment, learning, value, co-op, internship.

Introduction

E-portfolios have been in use for well over a decade now. Most e-portfolios contain similar electronic items, including but not limited to: profiles, resumes, pictures, artifacts, and references. These e-portfolios can be used for many different reasons including assessment, employment, internship, and/or co-op purposes. In addition, there is a strong, current push to utilize e-portfolios for self and/or lifelong learning purposes ([3], [10]). Educational institutions have utilized e-portfolios mainly for assessment. Bachelor of Science in Management (BSM) students, at Wentworth Institute of Technology (WIT), have been required to develop e-portfolios since 2007. The e-portfolio is a core graduation requirement. Students must register for a course number and at the end of the semester a grade of a “Satisfactory” (S) or “Unsatisfactory” (U) is issued. Students begin developing their e-portfolio during freshman year and then finalize and submit during senior year. Student e-portfolios are also part of an assessment and self-study accreditation report at WIT. We also encourage students to submit their respective e-portfolios to co-op employers and upon graduation to potential career employers. Administrators and academic professionals generally understand the multi-level benefits of e-portfolio usage. However, most students do not seem to grasp the many purposes behind e-portfolio development and usage. There is an ambivalent perception on the part of the student e-portfolio developer. This perception could actually hurt a student's chance of co-op or career employment if this attitude funnels over into poor development or a lack of holistic motivation ([15]). Since 2007 we have been struggling with helping students develop professional looking e-portfolios. Over the years we switched from static built web sites, to LinkedIn, and now we are using WordPress.com. Student e-portfolios look much more professional since we made this switch.

Even though students may not realize it, in many ways they are building social capital through the development and use of an e-portfolio. There is a net worth that can be determined theoretically in relation to e-portfolio development and usage. Developing a professional looking e-portfolio goes well beyond building social capital for a student. In this article we define net worth as it relates solely to e-portfolios. We also propose a methodology or model that can be used to determine the net worth of a student e-portfolio in order to help students grasp the perceived practicality of development and usage. We conclude by summarizing survey results showing a heuristic pattern that adds additional value for the student. Finally, we suggest a need for further research from the co-op and the employer's point of view.

Perspectives

Developing an e-portfolio takes a considerable amount of skills on the part of the student, such as organizational and technical skills ([1], [2], [11]). The system upon which an e-portfolio is built are numerous

and changing on a regular basis, as well ([1], [2]). Most, such as our own WIT students, started out developing e-portfolios from scratch using basic HTML, FrontPage or other web based platforms. Today there are a large number of e-portfolio based software programs for purchase or for a small annual fee ([1], [2]). In addition, there are many purposes used for an e-portfolio, such as assessment, employment, and/or recruiting ([1], [2] [11]).

Developers Perspective

Like many student developers, at WIT, we are currently using WordPress.com as our tool of choice ([14]). WordPress.com is a free or small fee based blogging site, which contains thousands of different template themes for the user to choose from ([14]). No matter which platform a student utilizes, research shows that the process for development is intrinsically the same. Most literature implies that student developers follow a process of:

- “collecting” the artifacts
- “selecting” the artifacts
- “reflecting” about the artifacts
- “directing” or setting goals” regarding the artifacts
- “presenting” or publishing the artifacts, and finally
- “receiving feedback” pertaining to the artifacts presented or published ([1], [2], [3]).

If developing from scratch, for the presenting phase, the developer must choose the publication modality. For students using WordPress.com, the platform and presentation modality is already determined ([14]). In addition, the feedback phase can be accomplished much easier since WordPress.com is essentially a social networking blogging site ([14]).

IS Perspective

WordPress.com, although it can be more complicated, is essentially a web based information system (IS) ([14]). Just as a business uses an information system to maximize data processing, student developers can utilize an IS system for similar results ([11]). This blogging system allows student developers to enter and store information. The templates help give the information meaning by sorting and storing in a structured and professional manner. Just as information systems for businesses have evolved over many decades, e-portfolio information systems will continue to transform, as well. Currently, recruiters cannot search most systems; however, in the future these systems will give recruiters the ability to match qualifications for specific job positions quickly and efficiently ([11]). Although not considered an all-inclusive e-portfolio system yet, we are already seeing this happen with LinkedIn.com ([7]). It is in the best interest of the student developer to conceptualize and depict the e-portfolio in a structured manner, which means meeting today's objectives and planning for the IS e-portfolio of the future, as well.

Value Perspective Defined

Helping students understand the value or net worth of e-portfolio development can be a challenge. Human capital theory, as a relatively applied simple concept, provides clarity in relation to e-portfolio development ([10]). Stainback states in his article, “the logic follows that as individuals acquire more education, knowledge and skill, their productivity increases, thus raising their relative worth over the value of another” ([10]). Students utilize, perfect, and increase certain skills during e-portfolio development and usage. Also, value for the student developer is an “enduring belief” of satisfaction in the end result. ([5]). In addition, Yancey states in her article, *Electronic Portfolios a Decade into the Twenty-first Century*, that “research at Seton Hall University has focused on the ability of e-portfolios to foster the development of noncognitive traits as well” ([15]). She further states that these traits show “the ability to work with others, that correlate(s) with success in school and employment” ([15]).

Social-Cultural Theories

Since WIT students are using a social networking blogging site for e-portfolio development, social-cultural theories of learning also apply. Kristy Young indicates that additional learning can be tied to a desire to engage ([16]). Young presents two social-cultural theories that can directly apply to student e-portfolio developers. Situated cognition theory, in part, signifies that learning occurs in an online community via participation, investigation, and exposure ([16]). Second, that activity theory applies because “human cognition occurs as individuals engage in motivated, goal-directed activity” ([16]). Further, as participation continues mastery increases ([16]). Thus, as students continue to develop and utilize e-portfolios over time,

their skills will continue to grow and learning will increase. Over time, as student developers begin to see the fruits of their hard work, their motivation level increases due to the direct impact of their demonstrated skill levels increasing.

Model Skills

Students sharpen and gain new skills at the start, during, and at the end of e-portfolio development and usage. Table 1 lists a sampling of the skill sets in relation to the stages of e-portfolio development and usage.

Table 1: E-portfolio Development and Usage Skill Sets

Development	Publishing	Networking	Marketing
Technology	Identity Creation	Collaboration	Associations/Contacts
Organization	Intelligence gathering	Social interaction	Connections
Design	Norms and Rules	People-to-People	Searching
Self Reflection	Security/Privacy	Peer-to-Peer	Viral Marketing

The skill sets listed in the above table seems simple, when in reality the value or net worth for each student will vary across the board. Over the last four years we have witnessed an increase in the level of these skills across the board with WIT students. A survey conducted during spring semester 2011 explores this insight.

Research Design

An online survey was created using Survey Monkey, which is an online free or fee-based survey tool. The survey was distributed to all WIT graduating seniors participating in the 2011 e-portfolio course. The survey remained open for a period of three weeks in March 2011. There were 31 WIT student participants.

The sample is not intended to be representative of the entire e-portfolio student developer population in general. However, this sample is an ideal representation of the 52 graduating seniors for the 2011 graduating BSM class. Although, this sample does not represent all college students, or the job seeking public in general, the survey findings provide many insights related to the student’s perceived value of e-portfolio development and usage.

The survey included six Likert scale questions exploring the satisfaction or degree of:

- I believe that my e-portfolio (EP) represents me as a management professional.
- My EP tells a story of my college career.
- My EP reflects my self-achievement.
- How satisfied are you with your final EP product?
- After finishing my EP, I can tell that I have had significant improvement and growth since freshman year.
- In choosing artifacts for my EP I followed a: reflect, select, present strategy.

The survey also included two agree or disagree questions:

- I will use my EP for employment purposes.
- I will continue to update my EP after graduation.

The survey also included two ranking sets of questions related to before and after development regarding the following skill sets:

- Technical
- Organizational
- Writing
- Critical Thinking
- Self-knowledge

The survey also asked one yes or no related question:

- Did you celebrate when you complete your EP?

And, finally the survey asked one open-ended feedback question:

- During or after developing your EP did you learn anything about yourself? Please Explain.

Findings

Out of the 31 respondents 56% agree and 13% strongly agree upon completion that their e-portfolio is representative of a management professional. In regards to their belief that the e-portfolio tells a story of their college careers, 42% agree and 19% strongly agree. Not surprisingly, 45% agree and 23% strongly agree that their e-portfolio reflects personal self-achievement.

Interestingly, only 16% were slightly satisfied, 29% were moderately satisfied, and 26% were extremely satisfied with the final product. However, when asked if they could see significant self-improvement and growth over the four years of their college career a large 58% agree and 23% strongly agree.

In choosing artifacts for their e-portfolio 39% agree and 32% strongly agree that they followed a reflect, select, present strategy.

Employment

When asked if they would use their e-portfolio for employment purposes 71% agree they would. Almost 68% of the respondents reported they would continue to up date their e-portfolio after graduation.

Utilized Skill Sets

Table 2: Utilized Skill Sets represents the current skill sets students believe they utilized the most during the development stages of e-portfolio creation in five ranking orders.

Table 2: Utilized Skill Sets

Rank	Technical	Organizational	Writing	Critical Thinking	Self-Knowledge
1 st	10%	42%	19%	3%	26%
2 nd	26%	13%	22%	26%	13%
3 rd	10%	13%	16%	32%	29%
4 th	13%	16%	26%	26%	19%
5 th	44%	13%	13%	13%	17%

From a ranking first through fifth skill sets perspective, out of each category, students indicated that their organizational skills are the most important skill they need during development, followed by tied technical skills and critical thinking skills second. In third place, they indicate critical thinking skills; in fourth there was another tie of writing and critical thinking skills. Finally, current technical skills are last from the first to fifth categories in a ranking order.

Gained Skill Sets

Table 3: Gained Skill Sets represents the skill sets students believe they gained the most during e-portfolio development in ranking order.

Table 3: Gained Skill Sets

Skill Set Gained	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Technical	3%	10%	16%	58%	13%
Organizational	3%	13%	20%	61%	3%
Writing	3%	26%	42%	26%	3%
Critical Thinking	3%	16%	26%	52%	3%
Self-Knowledge	7%	10%	19%	45%	19%

Students believed that during e-portfolio development they gained additional organizational skills the most, followed by technical skills, critical thinking skills, self-knowledge skills and finally writing skills last in a non-ranking order. Meaning, these skill sets are what they believe they gained during e-portfolio development.

Comments

When students were asked if they celebrated upon e-portfolio completion 61% said yes. Finally, when students were asked to write open-ended comments in reference to during or after development of their e-portfolio did they learn anything new about themselves Table 4 Skill Set Comments below represents an interpretative analysis of these comments categorized into the skill set areas.

Table 4: Skill Set Comments

Skill Set	Comment
Technical	<p>"I learned that it's not as hard as it looks to put it together, or at least Wordpress is easy enough to understand."</p> <p>"I learned that I have Technical skills."</p> <p>"I just learned a new software and way to build a website."</p> <p>"Learned how to use Wordpress, the social networking site."</p>
Organizational	<p>"Yes, I learned that I need to be more organized and keep better track and records of important documents throughout my entire time at a school or business."</p> <p>"Learned I needed to be more organized and aware of what will be required of me."</p>
Writing	<p>"It was interesting looking back on the documents I wrote during my four years of college."</p> <p>"I learned about the certain type of professional format that should be put on the EP."</p>
Critical Thinking	<p>"During my EP I realized that I had a unique take on completing my EP. I wanted to show my experience from previous majors and catered my EP to what I specifically want to do after graduation."</p> <p>"I learned to present the work I completed in a professional manner. I also learned how my work relates to the professional environment."</p> <p>"Learned about what I can do to set myself up for future employers to look at my EP."</p> <p>"The only thing that I might have learned is to have longer thoughts about my future goals."</p> <p>"It allowed me to be more creative."</p>
Self-Knowledge	<p>"I've learned that procrastination is death. If you leave off something for too long, and you try to do the impossible "one night" ordeal, you're setting yourself up for failure. In my case, that's what happened to me."</p> <p>"I learned that I accomplished more than I realized. By doing an EP, you can actually see your growth from Freshman year to Senior year."</p> <p>"Yes, I did not notice how much I learned throughout the school year. I actually went back and was surprised at the good work I have accomplished."</p> <p>"When I looked at the final product I was surprised at how far I've come since my freshman year. I felt that these four years helped me grow as a person."</p> <p>"I was given a greater idea of the things I have accomplished over the past four years."</p> <p>"I learned that I am a lot more collected under pressure than I thought I would be, and I gained self-knowledge about how resourceful I can be as well."</p> <p>"I was able to reflect on my experiences here at Wentworth Institute of Technology and learn how much I have done over the years."</p>

The survey results discussed above represent the WIT BSM senior sample of student developers. The discussion, interpretation, and limitation of the survey results are discussed next.

Discussion

The research that was conducted during March 2011 is a great start for subsequent studies and contributions to the existing literature base on the value of e-portfolios. The findings do indicate an increased skill set overall. However, it is important to note several implications of the current study.

Implications

A primary implication is the fact that the research conducted included only student's perspectives and was self completed by the students. Many problems are inherent with self-reporting based surveys; including the possibility that students may have overstated their utilized skill set and overrated their gained skill set.

Second, another consideration is refining the definition and application of the heuristic patterns included in the e-portfolio formula. It is implied that heuristic patterns are inherent in the design and development of student e-portfolios and that the e-portfolio itself represents an educational method in which learning takes place through discoveries that result from investigations made by the student.

An assumption is that our description of e-portfolio net worth (NW) is the sum of human capital (HC) and social capital (SC). In other words, $NW = HC + SC$. Defining human capital, social capital, and net worth need further discussion and research and is addressed in the following section entitled future research.

4.1.1 *An Interesting Discovery*

Since our WIT management students need to develop leadership skills, during our research it was interesting to discover that gained leadership qualities applies to the net value of e-portfolio development and usage, as well. McCallum and O'Connell suggest that leadership skills can be gained through "development experiences that provide opportunity for learning" ([8]). Also, their research shows that leadership skills can be acquired through "personal orientation to learning including's one's abilities, skills, and motivation" ([8]). They also suggest that through rewards gained, leadership abilities are further developed ([8]). These researchers believe that increased human capital equals increased social capital ([8]). Thus, the net worth of a student developer's e-portfolio can ultimately be determined by the following equation: e-portfolio net worth = The sum of human capital plus the sum of social capital. Net worth includes learning outcomes, networking proficiency, and increased vocational opportunities. In addition, as a by-product, the net worth of a student developer's e-portfolio can enhance more effective leadership skills.

4.1.2 *The E-portfolio Model*

An e-portfolio model defines net worth as it relates solely to e-portfolios. The e-portfolio model, as previously discussed, defines e-portfolio net worth (NW) as the sum of human capital (HC) and social capital (SC); or simply $NW = HC + SC$.

In short, human capital represents technological skills, organizational skills, writing skills, critical thinking skills, and self-knowledge skills. These skills are either utilized or gained during the e-portfolio process from freshman to senior year.

Social capital represents the ability of students to communicate, work with others, including faculty members, and create and maintain networks as a result of their e-portfolio. Social capital is also considered a non-cognitive trait development and that these social capital skills are transferable skills in the workplace, in school, and in personal life-long learning.

Net worth or simply, the intended outcome of e-portfolios is for the student's to maximize measurable learning outcomes (curriculum based objectives), creating and utilizing effective networks (social networking based objectives), and increasing a student's marketability in terms of employment potential (vocational based objectives).

Future Research

A number of areas are recommended for future research. More specifically, the development of an assessment rubric as it applies to the e-portfolio model is an important area to address. Other areas include employer perspectives, both co-op employer and career employer, as well as faculty buy-in, free vs. fee based platforms, and transitions from academic to professional e-portfolios.

Assessment Rubric and the E-portfolio Model

A key factor for future research is to look beyond a checklist assessment of e-portfolios. A rubric will help quantify a final grade and its respective letter grade conversion. This takes the equation of $NW = HC + SC$

to another level, beyond simply “Satisfactory” (S) and “Unsatisfactory” (U), which is the current method for giving student’s a final grade on their e-portfolio.

Can heuristic patterns be sufficiently correlated with the e-portfolio net worth equation, which equals the sum of human capital and social capital? Therefore, defining human capital, social capital, and net worth as they apply to e-portfolios is a critical next step as e-portfolios continue to expand in academia. More specifically, the definition of human capital, based on human capital theory, social capital, including non-cognitive trait development, as well as leadership skills, are all in need of further qualification and, whenever feasible, quantification.

Future research would utilize a revised matrix based on current best practices regarding e-portfolios, input from faculty members who are trained in outcomes based assessment, as well as input from employers (both co-op and full-time career).

Employer Perspectives

Future research that would be vital for e-portfolios is to obtain information from co-op employers and career employers. Determining the net worth of an e-portfolio from the student’s perspective, from our own research and experiences, the data revealed quite interesting results. In order to strengthen the survey additional samples can be taken as well as the administration of interviews, focus groups, and questionnaires with hiring professionals. Given the rapid changes in the work environment and the continued impact of technology in academia, future research is needed from the perspective of the hiring institution. As Strohmeier suggests in his article, “Electronic Portfolios in Recruiting,” more empirical evidence-based research is needed from the recruiter’s perspective ([11]).

Faculty Mentoring & Buy-In

Future research involving faculty mentoring and buy-in is also important for continued progress in the e-portfolio endeavours at WIT. Our own faculty need to develop an e-portfolio just like WIT students. This accomplishment would not only help faculty understand this process better, but would also give them the ability to help our students more effectively.

Free vs. Fee-Based Web Hosting

The free versus paid sites and the direction of web sites and blogs is another area that will need to be addressed at WIT in the future. For now, we will continue to use WordPress.com but that could change for many reasons. As e-portfolio tools evolve and grow, the skill sets needed to develop an e-portfolio will increase. As IT evolves so will e-portfolio development and usage.

Transition from Educational Career Portfolio to Professional Career Portfolio

A final consideration for future research is the transition from an academic environment to a work environment and the migration of the e-portfolio between these environments.

Conclusion

In conclusion, the student e-portfolio will continue as part of the curriculum at Wentworth Institute of Technology. At least for the short term, WordPress.com will be the site and students will still be required to have the basic components including a student profile, resume, pictures, artifacts, and references.

Student artifacts will be broken down into a cross-section of a student’s human capital, including papers, projects, reports, and other academic and/or work-related artifacts; all of which attest to a student’s technical, organizational, writing, critical thinking, and self-knowledge skills. The social capital elements of the e-portfolio will also include a cross-section of proficiencies, with an emphasis on social networks, imbedded technology, external hyperlinks, and other measures of social-related skill sets.

Finally, the net worth of student e-portfolios is an evolving concept and requires future research and discussion on ways to capitalize on this useful and important technological tool from a variety of stakeholder perspectives. An emphasis on students is of paramount importance and empowering students as they reflect, select, and present their e-portfolios will continue to be the primary objective of the e-portfolio process.

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Google Sites ePortfolio for integrative learning and holistic development of trainee Operating Department Practitioners

(Work in Progress Paper)

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Introduction

This paper reports on the innovative use of Google Sites as a student owned, institution independent, online electronic Portfolio (ePortfolio) for reflective writing and dialogue with peers and tutors facilitating the integration of theory and practice to support learning and professional development in the 2-year Bucks Diploma in Higher Education in Operating Department Practice (Dip. HE in ODP) course. As they experience critical moments in their learning, they are supported and guided to make connections, express their responses, collect and organise information and plan their next steps, potentially within one integrated digital environment thus, enabling them to document and evidence the academic skills and professional competencies and abilities developed over time^{1,2}, in this case, from September 2011 to August 2013. Therefore, the Google Sites ePortfolio is the central and common online space for the trainee operating department practitioner's learning experience (Figure 1) comprising a purposeful aggregation of digital items – ideas, evidence, reflections, feedback etc, which “presents” a selected audience with evidence of the trainee's learning and/or ability³ and the achievement of the ODP programme learning outcomes defined by the accrediting institutions and professional bodies such as the HPC and the College of Operating Department Practitioners (COPD); it is a reflection of the trainee as a person undergoing continuous personal development, not just a store of evidence⁴.

The ODP is a relatively new profession regulated by the UK Health Professions Council (HPC) set up to protect the service users by keeping a register of health professionals who meet the standards for their training, professional skills, behaviour and health. The HPC expects its practitioners to evidence personal and continuing professional development (CPD) through the maintenance of a portfolio of evidence not only at undergraduate level but also at registrant level⁵ to remain on the register. The Bucks ODP curriculum has embedded the “spinal column”⁶ type ePortfolio to develop highly flexible, integrative and adaptive life-long learners⁷ who are capable of keeping pace with the rapidly changing demands of new knowledge, emerging work roles and changing work environments⁸ and is therefore, “projectional”^{9,10}, outward facing to employers and the economy rather than introjectional facing inwards to the discipline.

Aim

As the early adopters of the ePortfolio and the first professional course at Bucks to embed the ePortfolio, the stakeholders including the Head of School, the Department Manager, the Course Leader, the External Examiner and the Lead Mentors from the practice areas as well as the ePortfolio facilitator from the Learning Development Unit are keen to maximise the affordances of the Google Sites ePortfolio. With this in mind, we, the Course Leader and the ePortfolio facilitator, made a conscious effort to iteratively evaluate the efficacy of the ePortfolio supported learning experiences designed to lead the trainees to connect, integrate and synthesize their learning¹¹ in order to enable them to construct their personal, professional and intellectual identity and to become reflective practitioners and lifelong learners. We will also examine the extent to which ePortfolio based tasks contribute to the reduction of the theory – practice gap.

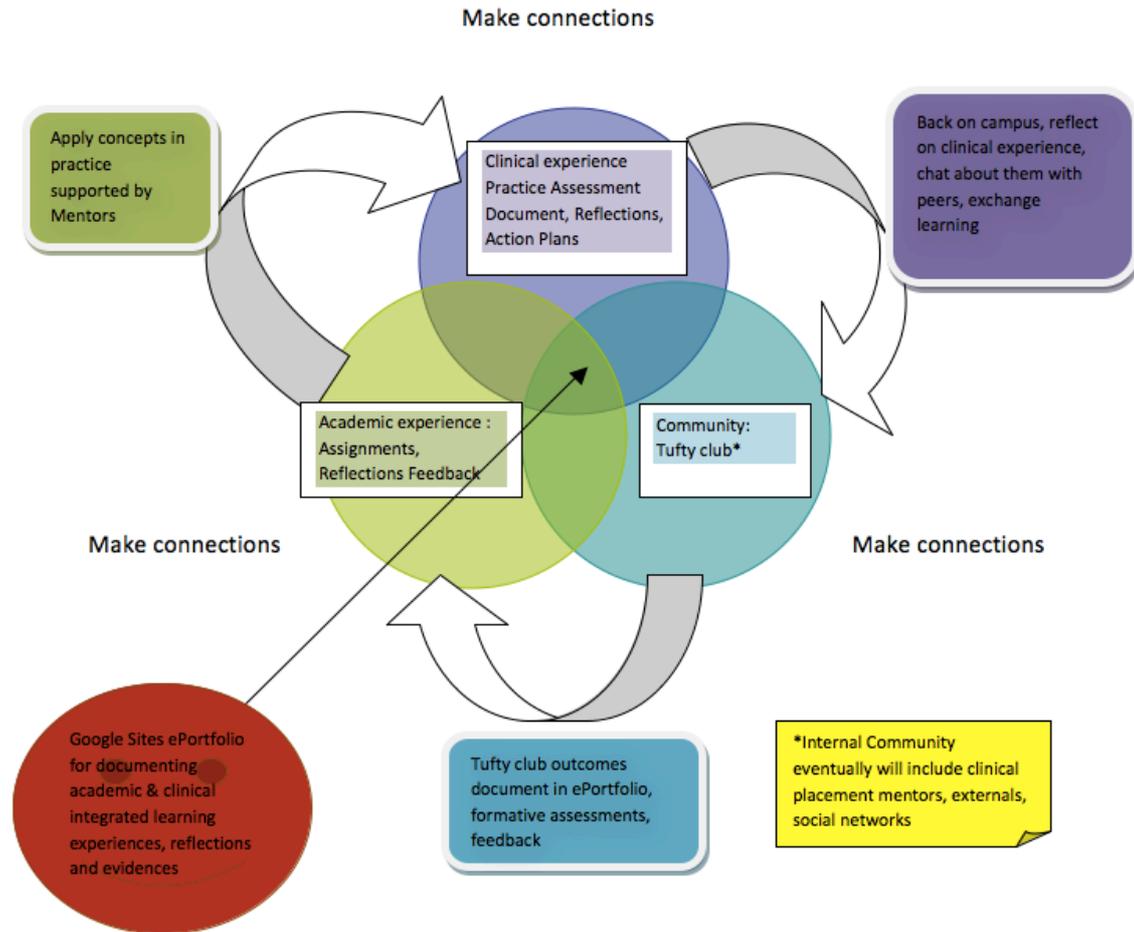


Figure 1 illustrates the Google Sites ePortfolio at the core of the Bucks ODP curriculum (An adaptation of the Learning Landscape¹²)

Designing the Bucks ODP Google Sites ePortfolio landscape

The development of the Google Sites ePortfolio learning landscape (Figure 1) is based on the Kolb experiential learning cycle, illustrating the process of continuous learning based around dialogue and collaborative activity with others⁴. It is underpinned by the Constructivist model of learning as it aims to foster learning and document growth¹³ with opportunities for authoring, editing. Formative assessment and feedback challenge the trainee operating department practitioner’s original insights prompting reflection and revision¹⁴. Mayer’s SOI (selection, organization and integration) model¹⁵ underpins the design of learning experiences in identifying evidence for documenting in the ePortfolio, understanding how the material fits together and helping them see how the material relates to prior knowledge or experience. This is relevant to the context of the ODP curriculum or the learning career¹⁶ (Figure 2) which incorporates 38% theory and 62% clinical practice experience in the learning process for the trainee ODPs to gain a better understanding of the link between theory and professional practice. The application of theory to practice takes place in a variety of clinical settings according to the three interconnected phases of perioperative care: anaesthetic phase, surgical phase and recovery phase highlighting the need for the integration of learning in these diverse contexts. Given the chance to observe and practice in situ the behavior of the members of the operating department team including surgeons, anaesthetists and theatre nurses, the trainees can pick up relevant jargon, imitate behavior, and gradually start to act in accordance with its norms. Acting in situations also facilitates learning as a continuous, lifelong process and is a means to discuss, reflect upon, evaluate and validate community procedures in a collaborative process.

Operating Department Practice Programme Learning Outcomes

Year 2	Level 5	CL 503	CL 504	ePortfolio presentation with achievement of course learning outcomes
Sem 2		Specialising in Perioperative Care Clinical Practice in Specialist Anaesthetics, Surgery	Developing Leadership Qualities in the Perioperative Care Environment Clinical Practice in Specialist Anaesthetics, Surgery	
Year 2	Level 5	CL 501	CL 502	ePortfolio progression
Sem 1		Advancing Perioperative Practice Clinical Practice in Complex Anaesthetics, Surgery	Applied Anatomy and Physiology Clinical Practice in Complex Anaesthetics, Surgery	
Year 1	Level 4	CL 403	CL 404	ePortfolio confidence building, making connections, reflection, self assessment
Sem 2		Developing Perioperative Practice Clinical Practice in Emergency Anaesthetics, Surgery	Anatomy & Physiology Clinical Practice in Emergency Anaesthetics, Surgery	Summary of learning in Y1
Year 1	Level 4	CL 401	CL 402	ePortfolio induction, familiarization, exploration, collection, selection of evidence
Sem 1		Fundamentals of Perioperative Practice Clinical Practice in Anaesthetics, Surgery	Principles & Practice of Anaesthetics & Surgery Clinical Practice in Anaesthetics, Surgery	

Figure 2 The Bucks Operating Department Practice curriculum

Reflective assignments related to module learning outcomes and clinical experiences enable reflection on practice and has been an effective way of structuring reflective activities. The concept of scaffolding has been applied for reflection which fosters lifelong learning because it encourages the ODP trainees to recognize gaps in their own knowledge and attend to their own learning needs¹⁷. The Tufty Club is one way when the trainees examine their ability to evaluate their own learning through reflection on action, a clinical learning episode which could be in surgical or anaesthetics –the context will vary and is an example of “personalization”. This practice is based on the work of Vygotsky and then Bruner who postulated that with an adult's assistance, children could perform tasks too complex for them to perform independently¹⁸. A scaffolding experience allows the trainees to move away from assistance, to become independent learners able to transfer the acquired understanding to new contexts.

Moreover, the ARCS model, a problem solving approach to designing the motivational aspects of the Google Sites learning environment contributes to stimulating and sustaining the trainees’ motivation to learn^{19,20,21}. This report will examine the scaffold provided to enable the trainee ODPs to integrate academic, clinical and community learning.

Participants

11 trainees enrolled on the Bucks Dip. in HE in ODP 2011 contribute to the evaluation of the Google Sites ePortfolio as part of the course requirement.

Data Collection

1. An initial assessment questionnaire created in Google Forms to establish the entry level of IT literacy, experience with ePortfolios, expectations
2. Focus Group interviews at the end of each semester
3. Observation of engagement on trainees’ ePortfolio sites

Data Analysis

Data will be analysed following a thematic approach: themes that contribute to extrinsic and intrinsic motivation to engage with the ePortfolio learning environment to document and reflect on integrated learning experiences.

Conclusion

This paper demonstrates how we, the Course Leader and the ePortfolio facilitator have mapped the module and programme learning outcomes to the learning, teaching activities and assessment methods to engage the trainees in an integrated and meaningful way. The learning experiences in Google Sites help the trainee ODPs to build a collection of assignments and artefacts which are accessible, viewable, editable by themselves as well as by the invited audience for comments and feedback. The findings will not only help improve the design of effective teaching, learning and assessment activities for the following semester but also ensure that the trainees are being supported and encouraged to make the necessary connections between theory and practice. Challenges such as time for reflection in action and documenting evidence during clinical placements need to be addressed in due course.

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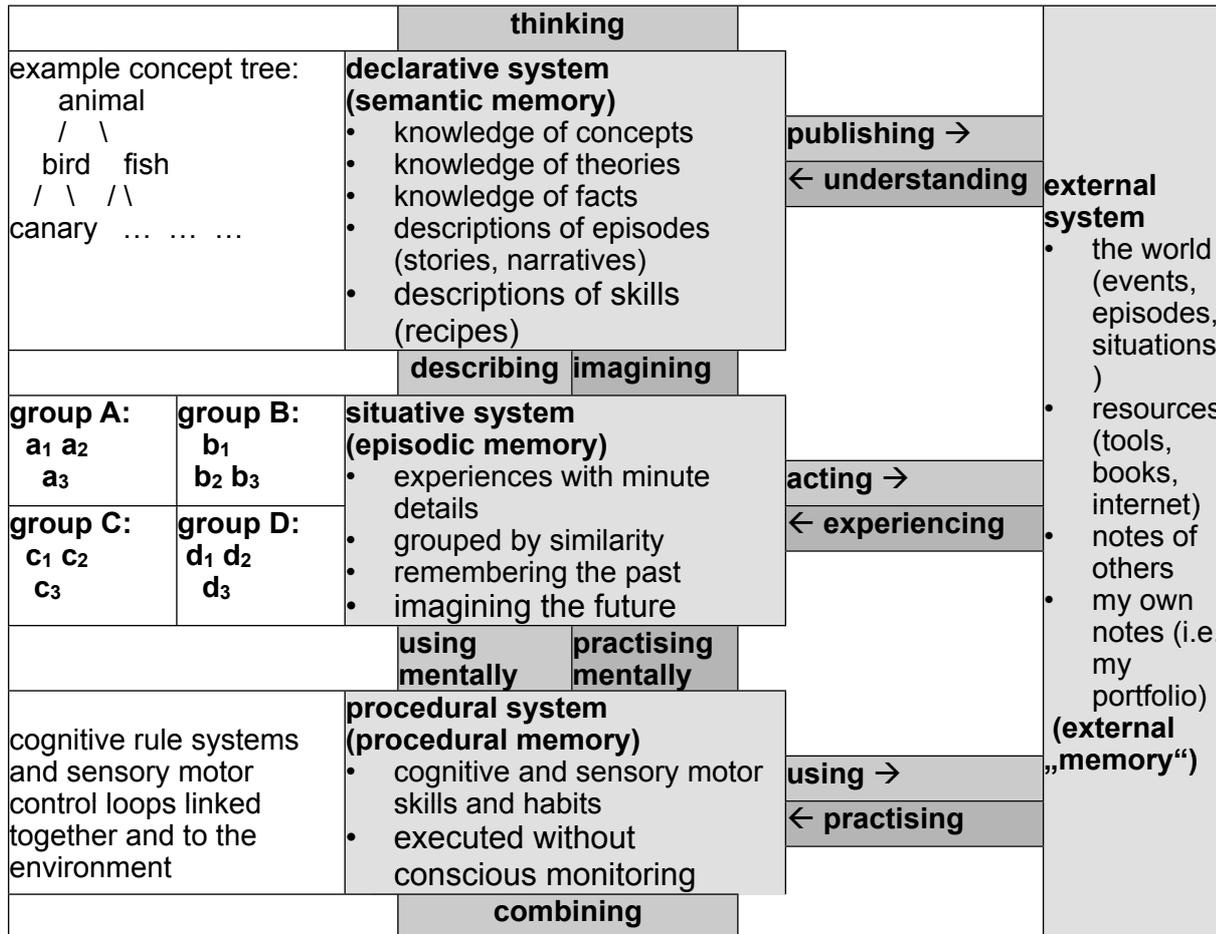
An ePortfolio as a general Learning Tool

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Introduction

Based on a theoretical model of learning and acting we propose an eportfolio as a general learning tool. This eportfolio is an elaborated note taking that publishes contents of our internal cognitive systems in an external system accessible to others.

Cognitive systems



Declarative system

The declarative system contains our knowledge in the form of concepts, theories and facts about the world (semantic descriptions of the «contents» of the external system). It also contains descriptions of experienced episodes in the form of stories, narratives. These stories constitute secondary representations of the contents of the situative system. We need them to communicate our experiences to others. Experiences cannot be communicated directly. They must be transformed into narratives. The declarative system corresponds roughly to the memory that is called «semantic» in the literature.

Situative system

The situative system stores our experiences with minute details, including experienced emotions. The experiences are grouped by the similarity of the experienced situations, episodes. If we encounter a new situation, traces of similar situations in the past are immediately and automatically activated. By constructing fictitious experiences, the situative system provides the ability to imagine future situations, episodes. The situative system corresponds roughly to the memory that is called «episodic» in the literature.

Procedural system

The procedural system contains our skills and habits as cognitive rule systems and sensory motor control loops linked together and to the environment. Skills and habits are automated routines that are executed

without conscious monitoring (our attention is free for other aspects of the situation). The procedural system corresponds roughly to the memory that is called «procedural» in the literature.

External system

The external system is the accessible world in which we live, act and experience episodes. It contains the external tools that we use to better cope with situations. It also contains «notes» in a broad sense: All written material, all published descriptions of content of declarative systems (others and my own). The external system can be seen as a (fourth) cognitive system in the sense of the extended cognition paradigm (i.e Clark, 2008) [1]. We do not completely agree with this paradigm. We agree with the critic put forward by Fodor (2009) [2]. Specifically with his distinction of «content» (of the declarative system) and «derived content» (descriptions of content of the declarative system in the external system).

Connections between contents of different systems

Contents of the declarative system (knowledge) and contents of the procedural system (skills) are linked to the groups of similar experiences. The links have the following meaning: This knowledge/skill is useful for successfully coping with situations in this group.

Transitions between systems

Contents of one system can be transformed into contents of an other system. These transitions between systems are the basic elements of learning and acting. They combine to more complex learning scenarios and acting scenarios (and teaching scenarios).

acting

Coping with a situation by putting a vision (of what we want to do) into action. The vision is based on experiences with similar situations and our normal course of action is to repeat former success. If we have no experiences with similar situations, we have to construct a vision based on a (declarative) plan by *imagining*. Putting a plan into action involves two steps: *imagining – acting*.

experiencing

Storing an experienced situation, episode, event in the situative system. One of the most basic learning scenarios is the detection of regularities and correlations in experienced events: the correlation between the ringing bell and the sausage (classical conditioning). The correlation between pressing a button and getting a candy (instrumental conditioning) involves already two steps: *acting – experiencing*.

using / practising

Skills are acquired by practising. Practising a skill means using the skill, either in a normal situation or in a situation explicitly arranged for practising. In the first case the skill is practised by using it as a resource to cope with aspects of the situation. In the second case the situation is specifically tailored for the purpose of practising.

using / practising mentally

Some skills can be used and practised mentally: Some people store phone numbers as movement patterns on a keyboard. Recalling the number is done by mentally executing the movement pattern and mentally reading off the digits.

describing

Producing a (mental) description of an experienced situation, episode, event in the form of a story, a narrative. This description is a secondary representation of the experience in the medium of language and thus suitable for communication (*publishing*). The descriptions of skills as recipes are also secondary representations and are produced by (at least mentally) *using* the skill and *experiencing* the resulting episode and then *describing* the experience as a recipe.

imagining

We have a powerful capacity for reconstructing experiences out of our stories. This capacity is responsible for the fact, that our episodic memories sometimes are embellished, producing a picture of the past that is more consistent than the past itself. The same capacity allows us to construct (fictitious) experiences out of stories of others, or to construct mental blueprints of actions out of (declarative) plans.

publishing

Declarative knowledge (the contents of the declarative system) can be transformed into a form suitable for storage in the external system for later use by oneself or by others. Only declarative knowledge can be published in this way. That is why we need secondary representations of the contents of the other systems (stories and recipes).

understanding

Publishing is only the first part of a communication. Understanding the published content is the second part. Understanding is necessary for the acquisition of new (declarative) knowledge from external (re)sources. And existing declarative knowledge is necessary for understanding. Therefore knowledge acquisition is always a slow and stepwise process, each step with the understanding of the parts that are understandable based on what has already been understood.

thinking

Thinking here means all uses of existing knowledge in the declarative system to derive new insights: concluding, inferencing, deducing, but also arguing, reasoning, rationalizing, planing. Thinking does not produce new knowledge, it only detects implied knowledge, i.e hidden parts of existing knowledge.

combining

The use of skills automatically creates more complex skills taking less complex skills as units. The same is true for habits. Very complex skills/habits that cope with complete routine situations are very rigid, inflexibel. Experts behave differently: In coping routinely with a situation they are very sensitive to small signs of variation that require a different course of action.

ePortfolio

The eportfolio contains four types of entries:

- Stories, narratives
- Encyclopedic entries
- Connections
- Reflections

Stories, narratives

Stories, narratives are published descriptions of experienced episodes, of situations and how we managed to cope successfully with them.

Encyclopedic entries

Encyclopedic entries are published descriptions of concepts, theories, facts («knowing that») and of skills and habits («knowing how»). They are descriptions of resources used in acting, in coping with situations.

Connections

Stories contain links to all encyclopedic entries that describe resources that helped in coping with the situation. Encyclopedic entries contain links to stories, where they helped in coping with the situation. If stories are collected in categories that represent groups of similar situations, the encyclopedic entries are best linked to the categories, not to the stories.

Reflections

Each entry in the portfolio (including reflections) can be annotated with comments by oneself (self-reflection) or by others (interactive reflection).

ePortfolio – where and what for?

We propose the eportfolio as a general learning (and development) tool with a very broad scope. It can be used to support the personal development by documenting the outcomes of informal learning as well as to promote the formal learning processes within a formal education setting.

Rather than listing all possible uses we want to emphasize some important general points:

- The eportfolio is the publication of descriptions of contents of the declarative system in the external system. It heavily depends on the «expressive power» of the learner. Thus it has to start with the

current skills that underly this expressive power. But these skills are practised by being used and they develop in parallel to the development documented in the content of the eportfolio. Reflecting is another skill that is best practised by being used. Portfoliowriting too.

- The eportfolio is metacognitive in a double sense: (1) Describing contents of a cognitive system is already a metacognitive activity. (2) Each entry (including reflections) in the eportfolio can be the object of a metacognitive process on the next level.
- We support the constructivist view of learning (and teaching): Learning is an individual **constructive** process. **In**structive processes cannot enforce but only foster this constructive process. The teacher is a learning coach. Adequate individual coaching is only possible based on a lot of diagnostic information about the individual learner. The eportfolio contains most of this diagnostic information.
- ePortfolio software: Garrett (2011) [3] identifies ownership, social learning and ease of use as three critical factors for user satisfaction with an eportfolio tool. His own software tries to maximize the values of these three factors. We think, the factor ownership or sense of ownership could be fostered even more, if learners would be allowed to choose the eportfolio tool that best fits their hands. Today there are a lot of handy tools available online. To just name a few: A gmail account, a space on tiddlyspace.com, an account on catch.com or evernote.com. And most of these tools are also available on smartphones.
- Entries in the eportfolio do not have to be written text. Anything goes: Recorded speech, videos, animated powerpoint presentations. The possibility to store multimedia content is one of the main advantages of eportfolios.

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ePortfolio in the context of developing learners autonomy and responsibility

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Introduction

Autonomous learning and responsibility are the very characteristic features and resources of a personality which ensure lifelong success. Autonomy is the asked-for quality of an employee on the labor market. From the psychological point of view autonomy is a new formation characteristic of the students' age.

In this respect a problem of pedagogical technologies for developing autonomy and responsibility at all the levels of professional training (Bachelor/Master programs) gains special importance. We consider ePortfolio to be a unique modern technology for developing learners' *autonomous learning* and responsibility for the quality result of educational activity; it helps in formation of the educational need. Institute of Education, Psychology and Sociology at Siberian Federal University has been carrying out the experiment on implementing ePortfolio technology in the academic process of training Bachelors/Masters of Education and Psychology for five years (2009-2012). The article presents the first results of this research.

This study accounts for the way to use ePortfolio technology as the instrument helping to develop autonomous learning, educational initiative based on the student's personal responsibility.

The following objectives were defined to investigate the mentioned above problem.

Define phenomenology of meaning of the terms "autonomy" and "responsibility" in the context of developmental pedagogy for professional education

Define the available resources of ePortfolio as an instrument of autonomous learning and responsibility development for the both levels of higher education (Bachelor and Master degree).

Distinguish which artifacts prove the increased learners autonomy

Carry out a survey among students of Master and Bachelor degree programs (of different years of studying) to define the dynamics of the transition of the academic ePortfolio into career ePortfolio.

Approaching the terms 'autonomy' and 'responsibility'

In our research different interpretations of autonomy in Russian and foreign psychological science are considered. According to J. Golovin (1998) *autonomy* is a generalized characteristic of a personality realized in the initiative, critical thinking, adequate self-evaluation and responsibility for the person's activity and conduct. Autonomy is closely connected to the active thinking process, feelings and will. Autonomy according to the leading psychologists E. Ericson, D. Levinson is a significant new formation of a personality characteristic of the student's age. D. Baume (1994) specified that "learner autonomy is the one of the key goals of higher education".

Professor Boris Elkonin (2012) says that autonomy is connected with constructing activity supports, while initiative is connected with challenge and overcoming barriers of the personal area of activity, with risking the supports. It should be investigated what may perform the role of the supports in the students' age from the point of view of higher professional education. For elementary school level B.D. Elkonin defined (2011) the condition of developing learner autonomy and initiative as "transition of control and assessment functions from an adult to a child" despite of their contradictory nature. Unfortunately most first year university students do not use this function instrumentally as they failed to develop it at school.

D. Baume (1994) relates the learner autonomy to self-efficacy, metacognition, self-regulation and proactive attitude. Thus according to unanimous opinion of Russian and foreign scientists, a self-dependent student decides himself what to study, manages his educational process and takes responsibility for the educational result. It is necessary to consider what the term 'learning outcome' means relating to higher education. How is learning outcome connected with the ability of a student to assess his resources and deficiency studying at different educational programmes?

The view presented in this research is based on the Vigotsky's methodology accepted in the developmental psychology by Vigotsky and Davidov and the necessity to develop the skills in "assessment for learning" and not only the necessity to get good examination marks.

We claim that the focus on leaning outcomes via adopting the new system of assessment connected with the formation of individual educational needs enables to develop students' *autonomy and responsibility* which are the necessary characteristics for the competitive labor market. We encourage a student to define educational needs by means of developing the students' authentic assessment skills, and motivating the student to perform activity (Figure 1). The reflexive analysis of the students' practical work launches the process of career development. Therefore learning outcomes are transformed into professional needs, the basic competences are supplemented with the professional and the student gets personally significant learning outcomes. B.D. Elkonin (2011) says that "the first and the fundamental result of any educational activity is not what the students does, but what he asks from the teacher. It is his sensible and voluntary initiative ... It is the educational need which appears". Student's ePortfolio makes the results of educational activity visible by means of the presented artifacts and reflexive materials, extends the university academic environment and constructs the assessment system significant for the student; ePortfolio serves to define educational need.

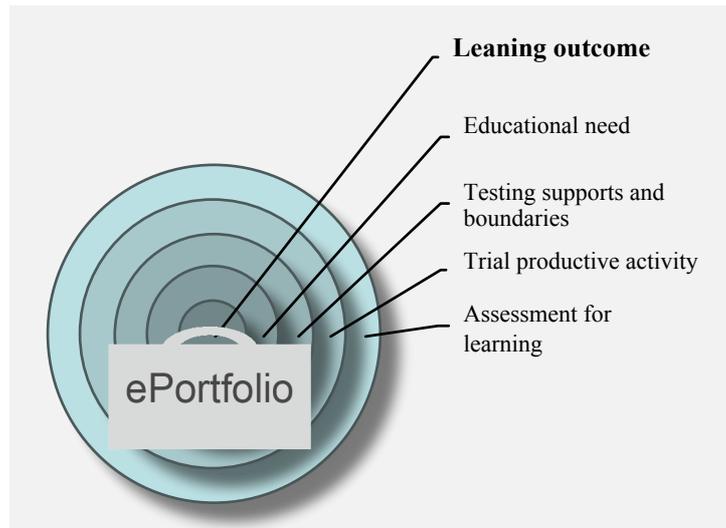


Figure 1. The scheme of learning outcome formation in the process of learner autonomy development

Traditional assessment system always tries to measure learning outcomes in grades. I.D. Froumin (2009) claimed that the dominating principle in education today is "the principle of similar action" when the teacher performs an action and the students follow the requirements or the sample and this what is considered to be the outcome, the result. The remote outcome is more important which is difficult to measure due to the insufficiently developed methodology of the research. ePortfolio technology allows to implement longitude measurements of leaning outcomes and present information to different subjects of assessment.

Summing up the mentioned above statements we get the following:

- The result of the higher educational system is an independent, reliable professional training aimed at satisfying the definite professional needs.
- Developing of the professional need is related to developing an educational need in specific professional competences.
- Developing educational need requires conscious assessment skills allowing a student to interpret his results, compare the results with the initial idea and plan further individual progress.
- Developing conscious assessment skills requires an experimental field, instruments for constructing activity supports, the methods to analyze and plan educational activity.

Students' ePortfolio may become a universal instrument for defining an educational need and developing assessment skills.

ePortfolio in the context of developing autonomy

There are different approaches towards the typology of autonomy in Russian and foreign psychological science. P. Hughes (2003) distinguishes the three main dimensions of educational autonomy: personal, rational (critical) and relational (social).

Russian psychological science (L.V. Vygotsky, A.N. Leontyev) distinguishes the three stages of autonomy a person undergoes in the process of developing any activity: reproduction, searching and creation.

K.E. Bezukladnikov (2008) stated the importance of developing all the stages of autonomy in professional education starting with the reproductive one as it is the basis of developing the quality of activity. N. Currant, P. Hughes, P. Rodway (2010) following K. Bezukladnikov (2008) and E. Polat (2007) admit that ePortfolio technology enables effective development of all the dimensions of the students' autonomy (personal, rational and relational) and all the stage types (reproduction, searching and creation).

It should be singled out that this article describes a pilot research project which should be further followed by a more extended and prolonged sampling.

ePortfolio method has been used at the Institute of education, Psychology and Sociology of the Siberian Federal University for five years at different educational levels:

- Bachelor programs: teacher training programs for developmental education (Elkonin-Davidiv method) (14);
- Master programs: manager training in the field of education and researcher;
- Professional development programs post-graduate students (students specializing in different areas acquiring additional qualification - teacher)

In the study the quantitative and qualitative research methods were used such as a survey among students and teachers, interviews with students and teachers, analysis of the students' portfolios.

Basic ideas and results of the investigation

At the beginning of our experiment we described the goal as implementing an integrated authentic assessment system for a block of IT disciplines: the students' knowledge and competences were presented in the ePortfolio in the form of the authentic products. We also faced the urgent problem of motivating the students and increasing their interest in the result of education. Among the objectives of the experiment there were the development of self-evaluation skills and the skills to deal with the external assessment, independent assessment by means of ePortfolio technology and the skills of assessing the co-students' works.

Within our project work at launching the mechanism of reflexion we worked out the organizational activity with the students of the 1st year. The students learn to analyze their educational resources and deficiency. The results of the activity are presented by the students in the form of essays in their ePortfolios: their reflexion on the pedagogical profession and pedagogical career, their plans for the future. The students also include in their ePortfolio the thesaurus – the basic terms of the Elkonoin-Davidov system: development, theoretical thinking, educational activity, educational cooperation, educational goal, modeling, etc.). This thesaurus (according to our vision) will be developed through all the years of study. Further on it will become the individual pedagogical instrument of a primary school teacher working in the system of developmental education. After completion of different disciplines of the curriculum the students accumulate the material in his ePortfolio: analysis of the basic theories laying the ground of the developmental education and the examples of practical work in Russian schools and the instruments used by teachers in their work.

It is important that ePortfolio allows a teacher to return the student's work as requiring improvement several times teaching a student to be responsible for the learning outcome. Every Bachelor program student within the four years of study collects his own pedagogical 'moneybox' he will take with him when he starts teaching at school.

On completion of the introductory practical training (after the second term) the students present in their ePortfolio the reflexive materials in the form of the observation diary. The students try to sort out and describe the main characteristics of the secondary school students' activity and its structure, consider learning outcomes, marks and effects of the developmental education. Students of the second year publish in their ePortfolios the reflexive reports on their pedagogical practical training, their thoughts of the developmental education, analysis of the mistakes made by the students during their first lessons as teachers.

ePortfolios Bachelor program students of the second year allow drawing conclusion on developing the three dimensions of autonomy. Concerning personal autonomy, more than the half of the students show high level of motivation, high level of self-evaluative, reflective and action planning skills. Among the Master program students and post graduate students the number of those who prove a developed level of personal autonomy is 70-80% (within their first year of study). This was the result we expected as the latter group consists of adult students who already got their first university degree.

ePortfolio for Master and post-graduate program students

ePortfolio is a modern pedagogical technology that promotes the students' autonomous activity, both in the educational process and in constructing further career. Selection of the ePortfolio artifacts, reflection of the educational and professional practical work develops the student's ability to perform reasonable activity, improve his results and overcome barriers. ePortfolio encourages the development of the volitional and thinking processes. Going back to the psychological grounds we regard autonomy from the point of view of S.L. Rubinstein (1946) as "a developed within the ontogenesis actual, subjective experience". ePortfolio as a pedagogical technology promotes development of professional experience and provides the mechanisms of its visualization in the virtual environment. Most often higher education tendency to be too 'theoretic' does not allow enough place for practical experience. ePortfolio technology allows creating 'trial projects' in the secure virtual environment. It is the virtual environment where Master program students get the opportunity to model trial forms of activities referred to real practice, artifacts presented in the ePortfolio testify to the level of the developed rational autonomy (analytical, critical, metacognitive, formulating own problem).

ePortfolio visualizes the formation of the educational need by means of constructing the action plan and the attitude toward the achieved result, planning practical work and evaluation of the available resources. Extending the borders of the educational environment is a significant factor in the professional self-determination. Analysis of the Master program students' ePortfolios allow concluding on the developed medium and high levels relational autonomy, which can be traced in the presented social achievements, in overcoming social and interdisciplinary contexts (Figure 2).

ePortfolios of that group of students often contain professional achievements proved by the presented certificates, awards, other documents proving the competences – they contain these documents two or three times more often than the students of the first group. Master program students and post-graduate students proposed including the section "Publications" into the ePortfolio to present scientific articles, thesis, patents, projects, etc. While interviewing this target group we found out that in the assessment procedures they underline such characteristics as openness, significance for future professional activity, clearness of the assessment criteria, accessibility of the results, integrated character of the work and the opportunity to improve the work. Post-graduate students stated that the assessment carried out by means of ePortfolio technology is the most important for professional growth and career development within and outside the university. We think this opinion proves the developed rational and relational autonomy of these respondents.

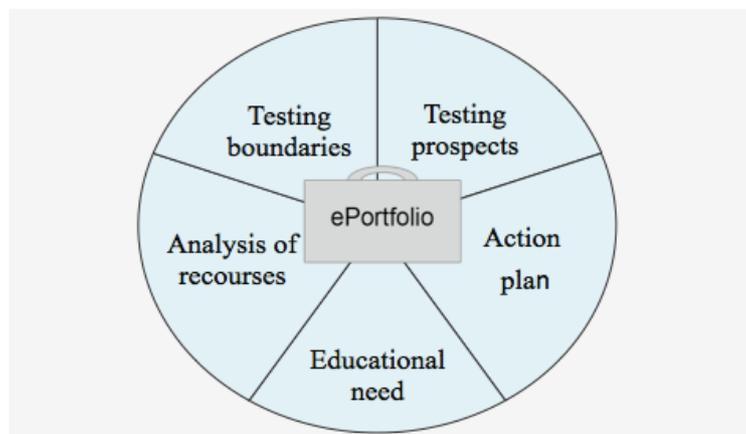


Figure 2. ePortfolio technology for developing rational and relational autonomy

ePortfolio is a modern technology for authentic assessment of educational and professional activity. It is an individual personally selected set of documents which on the one part presents learning outcomes in the form of a product, and on the other part contains information which characterizes the means of analysis and planning of the students' educational activity (H. Barret, 2007). According to E.S. Polat (2007) ePortfolio is an instrument for self-evaluating the student's cognitive creative activity, a documented result of the reflexive work.

The autonomy types

We may judge on the autonomy level analyzing the reflexive materials presented in the students' ePortfolios (the judgment is based on the expert assessment). In our investigation we considered students of different areas of specialization and years of study. The table below presents the examples of the artifacts which

according to the expert opinion were classified as indicators testifying to the type of the autonomy (personal, rational, relational).

We use the following abbreviations to define the target audience:

- HT – Higher School teacher
- ME – Master of Education,
- BE – student of the 1st year, Bachelor program in Education
- BEP2 – student of the 2nd year, Bachelor program in Education (primary school teacher in the constructive learning paradigm)

Table 1. The artifacts testifying to the different types of Autonomy presented in the students' ePortfolios, Institute of Education, Psychology and Sociology

Autonomy type	Indicator
Personal	"My plans for the nearest future: first, present myself at the university as a hard-working, creative and active person; second, I want to take an additional course in English to study abroad as an exchange student; third, I am a very communicative person and I want to get to know more people in the university" – BE1.
Personal	"After graduating the university (Bachelor program in Education) I will go to work. Then I plan to enroll a Master program for professional development. My plan for future is to become a school head-master. I have to work hard, practical work is very important. It is very difficult to work with children having no experience" – BE1
Personal	"What do I expect from the university? Minimum – a Master degree. It will help me in my career. It will help me on the labor market and flatter me. I think the content of education will help me to develop professional and basic competencies and my personality. I will make another step in the sphere of education" – ME
Personal	"For me as a pedagogue reflexion is an important part of professional activity and life in general. Without it one cannot evaluate his/her activity and plan further professional and personal development" – BEP2
Personal	"In my pedagogical activity I feel constant necessity to develop professional competences to make my work more productive and successful. To do so I take part in trainings, professional development courses – in the field of general pedagogy and in the field of my specialization. It helps me to plan and analyze my pedagogical activity" – ME
Personal	"During my study at the university I want to meet new friends, get new knowledge, become independent, realize my own educational ambitions, learn to implement the obtained knowledge in practical work" – BEP2
Rational Autonomy	"I assess my resources as follows: I plan to participate in the organizational activity games, trainings, additional courses for broadening the mind, deepen the knowledge in my professional sphere; extending the number of useful and interesting acquaintances. Useful and necessary information one may obtain from different sources, meet clever people, read various literature, articles, Internet editions" – BEP2
Rational	"ePortfolio is where <i>subjective</i> meanings of autonomy appear..."- ME
Rational	"ePortfolio allows planning career development , this is the place where all kinds of activity are welcome» ME
Rational	"ePortfolio is the field of intentions (goals, plans, purposes)..." BEP2
Rational	"Senior students often study a lot of compulsory courses. Why English and Physical training are compulsory? I am not against English; I think a student should choose a foreign language considering his/her professional and personal interests. It is necessary to study what you are interested in. Then you will never forget it! It is necessary to provoke a student to be proactive. Now the students are megapassive. One of the basic principles of my future pedagogical career is "Do not impose" – HT

Rational	"I am an active person. But my interests are not often taken into consideration within the Bachelor program". More often the knowledge is presented in the ready-made form. I think it is bad for both mastering the knowledge and developing the thinking processes. The students work little to obtain new knowledge" – HT
Relational	"When I was a student of the 3 rd and 4 th year I understood I needed some adjustment of the educational trajectory. I was specializing in Translating but I have always been interested in Education. I have been teaching a language in private schools for several years and I like this job. There is where I get space for creative activity, for thinking out something new. That is why I chose Master program in Education. Then I decided to specialize in Educational Management as it offers new opportunities. Then the career prospects become more of administrative level as we will know how to manage an educational institution and have the right to work with the staff" – ME
Relational	"Studying at the university is an important step in my personal development. Though the employers yet do not quite understand the difference between Bachelor and Master degree I do not regret the time I spent at the university. First, I learned to work with texts better and it is easier for me now to understand and analyze scientific articles in the field of humanitarian branch of study. Second, I developed an active position. Third, the organizational activity games I took part in as a student of the first and the third year influenced me a lot. My scientific advisor played an important role in my professional development" – BEP2
Relational	I decided to enter a Master degree program in Higher Education and defined my goals as further career development - I want to teach at a pedagogical college. My goals as a Master degree student are: <ul style="list-style-type: none"> • Mastering technologies and methods useful in teaching students; • Searching the ways of self-realization in the new professional activity; • Searching the opportunities of the Elkonin-Davidiv system of developmental learning for realizing the project "Applied Bachelor degree for training primary school teachers to work in the constructive learning paradigm" – ME

As we see from the above table personal autonomy is characteristic of the students of the first level of training (Bachelor program). The focus is on formation of the universal self-educating instruments which allow defining the students' personal educational goals. ePortfolio technology helps Bachelor program students to visualize their picture of themselves in the virtual university environment, define educational principles, expectations, assessing the existing deficits (after completion of the practical work). Bachelor program students of the second year demonstrate rational autonomy, and participation in the organizational activity games, analyses of the available resources - constructing individual learning educational paradigms and activating professional interests play an important role in it.

The examples of rational autonomy are more often presented in the ePortfolios of the students getting additional specialization "Teacher" and "Higher School Teacher". These students are usually older than average and have a certain life and work experience - they are able to carry out critical analyses of the academic disciplines and reflect on the practical and theoretical aspects of the educational practical work. Rational autonomy is more often characteristic of the Master program students: their ePortfolios include more artifacts aimed at demonstration of the professional competences and the quotations on the metacognitive styles of education, self-control and self-management.

In the ePortfolios of the Master program students of the second year we could find a few artifacts testifying to the relational autonomy. While interviewing the group mentioned above we found out that the students enrolled in the Master program have already had working experience and a definite educational need aimed at career development. That is why for this category of students it was easier to present a ePortfolio - they are aware of the university learning context and profession. The level of relational autonomy of the representatives of the younger students to our opinion may be connected with their individual social proactive position and high professional motivation (in our investigation these were the students coming from teacher dynasties).

On completion of the term we carried out the questionnaire poll among Master program graduates specializing in Education. The results of this work are presented in Fig 3. As we may conclude from these

data all the students admit the development of all the autonomy types by means of ePortfolio technology. Master program students pay attention to the important role of the ePortfolio technology in launching the reflexive processes on the basis of the students' practical work and academic study, the process of constructing individual educational paradigm and individual progress assessment. To our opinion it proves to the fact that the graduates develop professional needs, are able to coordinate academic contexts and their future professional practice, are aware of the available personal resources and existing barriers. Practically a senior student' ePortfolio is gradually transformed into a professional (career) ePortfolio.

Figure 3. Questionnaire poll among Master program graduates (area of specialization "Education") on the prospects and opportunities of the ePortfolio technology.

We studied the opinion of Master program and post-graduate students (52 respondents) of the ePortfolio technology and its prospects in the job placement process. 76% of the respondents consider ePortfolio useful in this context as it is described in Figure 4. From the above statement we may draw conclusion that these respondents have a developed professional need and career aspirations.

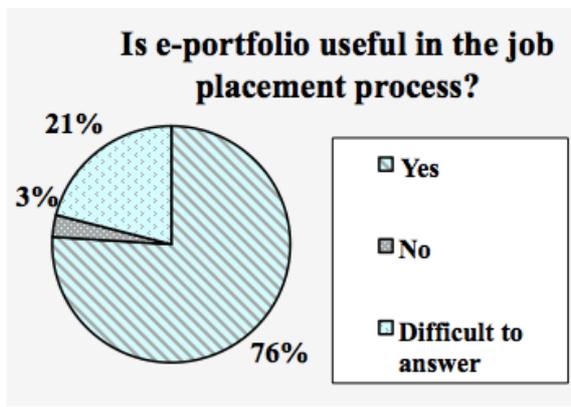


Figure 4. What master and post-graduate program students think of using ePortfolio in the job placement process.

We asked the students what changes may be introduced in the educational ePortfolio structure and if the ePortfolios may be used by the prospective employers. We present the results of the questionnaire in the diagram below.

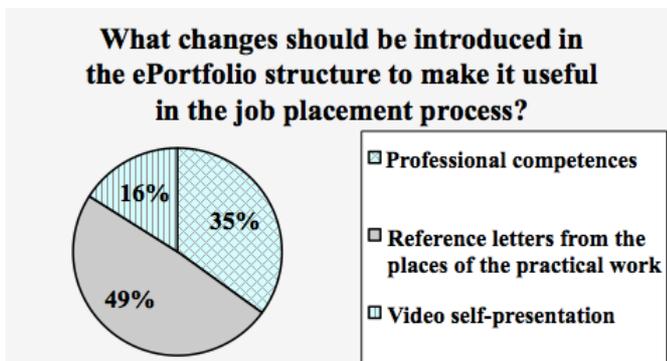


Figure 5. Master and post-graduate program students responses concerning the career portfolio

16% of the respondents consider important including a video resume into ePortfolio, 49% mention references from the previous places of work and places where the students had practical training while studying at the university. 35% of the respondents state that artifacts proving professional competences should be included in the ePortfolio. The materials presented in the ePortfolio and the five years of the research work show that Master program and post-graduate students more often than the bachelor program students aspire to manage educational resources presented in the ePortfolio, both in the local university network and in the Internet. They test different perspectives, differentiating their aspects with the view of the further influence on the career prospects. The students begin constructing supports for their professional ePortfolio within the university environment taking up responsibility for their education.

B. Elkonin says that a portfolio allows a student "to construct trial productive forms of activity related to the subject", i.e. to their practical work and their deficiency revealed in real-life context. Thus we may speak about 'the students challenging their prospects' by means of ePortfolio instruments as it stores reflexive

materials and the students' responds to the questions "Where do I go? Where have I arrived at? What resources do I lack? What is the result of the practical training? What challenges did I meet? What did I manage to do? What did I fail to do? Why? What do I need to improve?"

Conclusion

The five years of the experiment extended the goals including the following

It is necessary to work out a universal and flexible ePortfolio structure for every level of university education (Bachelor/Master programs, post graduate/professional development education) in accordance with the goals set by the subjects of education and the prospects of transforming an academic ePortfolio into professional ePortfolio.

In this respect it is necessary to train tutors - teachers helping to work with ePortfolio, the training may be carried out in the form of professional development courses. Thus we face a problem of working out methodology and the problem of validation the procedure and indicators used for assessing the students' academic and professional competencies by means of ePortfolio.

Nowadays a more extensive use of modern media and social contexts attractive for younger people, such as:

- integration of video interview into the students' ePortfolio for presenting oneself on the labor market;
- extending social contexts by means of including the resources available in the social networks in the students' ePortfolio;
- transition of the students' ePortfolio into career ePortfolio.

Currently there are problems still open for discussion. How to relate the ePortfolio artifacts to the specific types of educational and professional activity? Which productive prototypes of the professional activity retain the students' interests? How to encourage the students' initiative in developing ePortfolio available for its multifunctional use by different institutions? How to tie together social and educational environment and educational practical work by means of individual ePortfolio? How to make the initiative to develop professional competences urgent and record this dynamics in the ePortfolio?

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ePortfolio as a tool for reflexivity and skills' communication: learn how to communicate skills

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This paper aims to present an ePortfolio project led for two years in a multilingual and interdisciplinary Master's program in public discourse and communication analysis offered by the Faculty of Arts of the University of Lausanne (Switzerland). Globally, the project – named *Learn to communicate skills* – offers a reflection about academic skills and their transferability to the professional world. More precisely, the aim of the project is to make students aware of the importance of reflexive learning to make their skills transferable to other contexts.

In this respect, the team in charge of the project has chosen an ePortfolio approach because it is intended to facilitate the expression and documentation of individual skills developed by students as part of a complex program.

Context

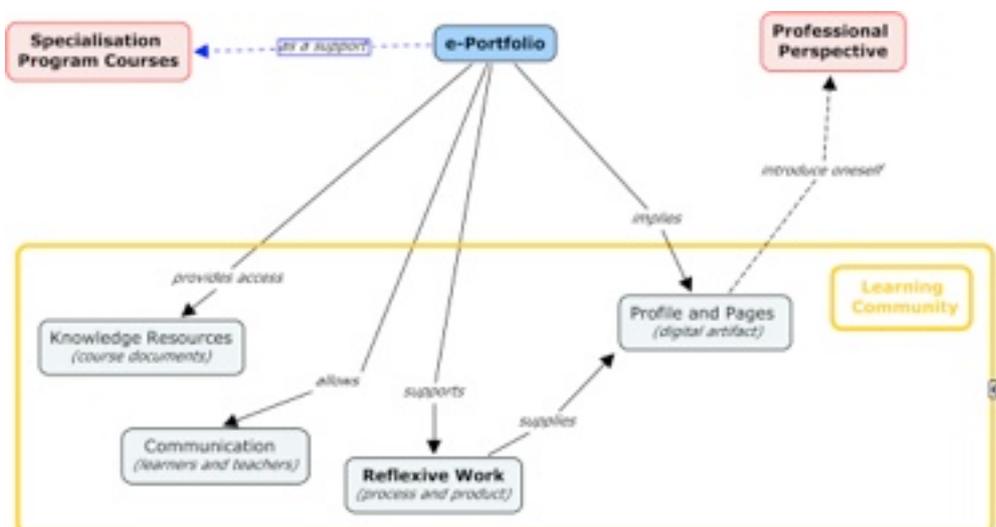
Designed as a multilingual and interdisciplinary specialisation in the field of public discourse analysis, the program is in partnership with two other Swiss Universities: Lugano, in the Italian speaking part, and Zurich, in the German speaking part. Offering a choice of courses in French, German, English and Italian, it gathers teachings in the areas of discourse and text analysis, verbal interactions, communication and media, and analysis of professional practices. Virtually, it consists of three core courses during a semester and of a personal activity (research or internship) made after the period of teaching.

The program has two main objectives. The first one is to acquire sharp knowledge of public discourse and communication analysis with the tools of communication sciences and languages sciences. The second one is to think about the complexity and the diversity of discourse and communicational cultures in a globalized world.

In addition to these main objectives, the program allows two different perspectives: either building a bridge between the Master and the PhD Thesis with a first research experience in research the field of public communication, or preparing the students at the working life with an internship in an institution or a corporate.

In such a context, the program has a lot of different aspects to piece together: partnerships with several institutions in Switzerland; multilingual and multicultural public communication as the object of study; an interdisciplinary analytical method, between communication sciences and language sciences; an important diversity of teaching's contents. All these aspects required the plasticity of an on line tool : the ePortfolio has allowed the creation of a learning community in order to facilitate the coordination of teaching contents and communication between the students engaged in the Master's program.

Besides a flexible structure, an anchorage in professional practices – the specialization opening to professional practices of communication through internships – has led to the necessity of a reflexive attitude about teaching contents, what is enabled by the ePortfolio approach.



With its reflective tone, the ePortfolio encourages students to reconsider their learning with regard to their skills and to consider their transferability and communicability in a professional perspective. In that respect, the ePortfolio is a tool that responds to the communication needs of students at endpoint.

Indeed, communicating one's own skills is a relevant issue for students trained in communication. As a matter of fact, one can assume that communicating about their skills reflects their skills to communicate. To deal with this specific issue, the research team has implemented some activities allowing the students to develop reflexive learning practices, become aware of their skills and learn to communicate them effectively. The team developed a processual device that combines various dimensions via the ePortfolio: learning awareness through the development of skills; the discursive construction of identity; the implementation in a specific mediated communicative activity.

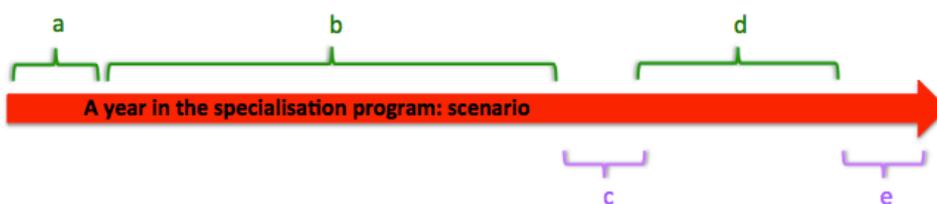
Learning goals

Learning how to communicate skills implies three steps: firstly, the identification of the skills, secondly, the verbalization of the skills, and thirdly the communication of the skills. The first step allows the students to avoid considering learning only in terms of knowledge and forces them to think also in terms of skills. Then, the second step helps the students formulate a lived but not necessarily conscious reality. In other words, it helps them express and explain their skills "for themselves". Eventually, the third step aims to help them consider their skills "for others" in an interactive and communicative way. That is, they learn to take into account the specificity of the medium, more precisely what is at stake with the communicative activity types committed by the medium. In this sense, they acquire the ability to manage the relationship between oneself and a broader audience.

These three learning goals – identify skills, verbalise skills and learn how to communicate skills – correspond to two types of learning activities in the ePortfolio approach that has been developed: the reflexive activities through which they document their skills, expressing and explaining their skills for themselves; the communicative activities through which they communicate their skills, saying and showing their skills to the others. Five ePortfolio activities are distributed over one year: three during the time of the courses (a, b and c) and two during the time of the personal activity (d et e). The two activities that occur during the time of personal work are a kind of repetition of activities that occurred during the courses to allow a better understanding among the students, this is why we focus our discussion in this paper on the first three activities.

Reflexive activities – document their skills

- a identify their skills and set learning goals
- b write a learning diary during the time of teachings
- d write a learning diary during the time of personal activity



Communicative activities – show their skills

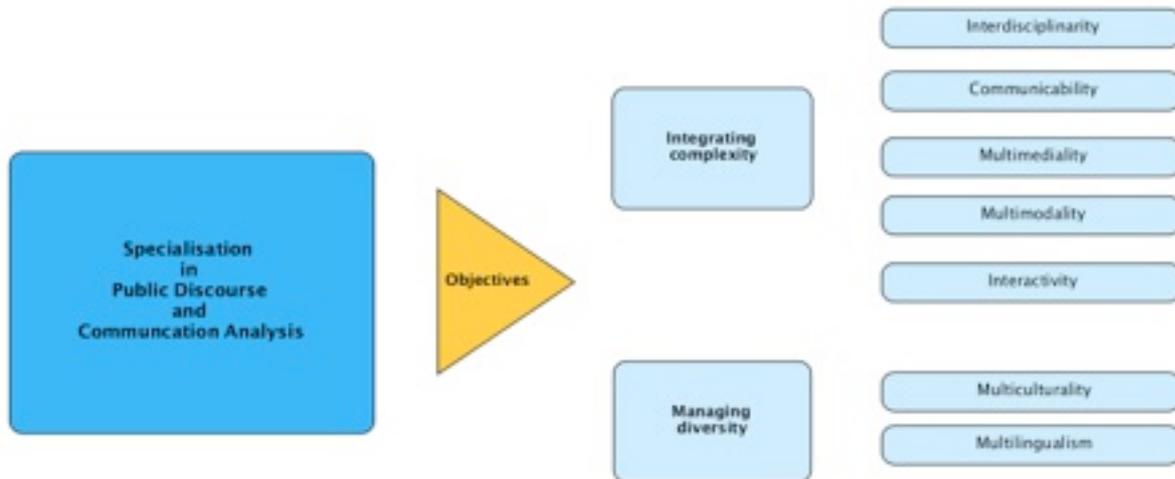
- c build and discuss a skills' presentation
- e improve and strengthen their choices of communication

Reflexive activities

The reflexive activities are used to identify and verbalise skills. For the first one (a), it means identifying skills and setting learning goals. The first step in the direction of reflexivity is to consider academic learning not only by the view of knowledge but also by the skills developed. This is why we produced for each courses a list of specific skills that the students can view in their ePortfolio.

However, we noticed that it was necessary to identify the skills not only by providing students with specific skills, but also by allowing the students to consider the whole program in a comprehensive manner. Specific skills were not enough to develop a real conscience and a personal thinking process about which skills they had developed. They have to go beyond the traditional list of skills by course to think in terms of skills

related to the entirety of the program. That's why we chose to present to the students what we call the skills' area.



It seems that a general description helps the student to see the whole logic of the program and to take the distance needed to a better development of a reflexive awareness. Thus, at the end of the presentation of the skills areas the students have to identify their skills and set learning goals in a place designed for this purpose in the ePortfolio.

This first activity helps them in the writing of their learning diary (b). As for this second activity, it consists of an exercise in two parts. Five times in the course semester, in addition to the core courses, the students have to follow a block of training on a specific issue in public communication. Before the lesson, they have to read a paper linked to each particular lesson and write a report of one page in which they summarize the main purpose of the paper, express their personal opinion and speak about their own context of understanding. After the lesson, the students have another report to write in which they come back to their previous report (in other words, on their first understanding) and speak about the transferability of the skills they have developed in this case (*How can they reuse this learning? In an other context? In a broader context?*). Each report receiving feedback from the teacher, the interactive aspect of the ePortfolio is particularly adapted for this activity in two times: it allows an online and continuous monitoring of students production.

Used for identifying and verbalising skills, these two activities (a and b) are closely related. By identifying skills, they allow one to take some distance from a framework that focuses only on the acquisition of knowledge for considering the learning in terms of skills: students become more widely aware of their learning outcomes. Supporting the specific work of verbalisation by putting words on learning processes, they encourage students to position themselves relatively to the skills they have developed.

Therefore, these activities allow students to distinguish their skills by expressing and explaining for themselves and considering them in new perspectives (Merminod 2012). In other words, their role is to be a skills assessment that increases steadily.

Communicative activities

The skills assessment allows gathering contents to communicate. But what is *communicating skills*? Communicating skills implies the articulation of three aspects: showing an identity by saying, establishing a relationship and managing communicative resources. The third activity (c) helps the students to learn how to communicate skills by asking them to construct an identity taking into account the relational process between themselves and others by using specific settings of a communication device.

In order to do this, at the end of the course semester, the students have to build a presentation of themselves with the products of all the reflections they have done in the previous activities but also with any other previous productions: their master's thesis for instance or a very good piece of work related to the identity they want to show.

In this manner, they learn how to communicate their skills by experiential learning. They try to communicate their skills by expressing themselves in a particular technological context using specific resources to make available the personal productions that demonstrate developed skills. Furthermore, to express their skills not just for themselves but also to take into account the look of others, they have to set explicitly the goals

of an image to be transmitted. In other words, they have to make strategic choices with regards to their communication objectives. Students are encouraged to develop, implement and evaluate several strategies of skills' communication in the context of the ePortfolio, being aware that their ways of communicating about their skills reflected the skill to communicate skills (which in fact is at stake in the field of communication).

Then, during a session that brings together all participants of the program, teachers and students analyse and criticise the choices of communication of each presentation. At that time, students have to reuse all the knowledge and the skills they have learned and developed about communication during the courses to defend their own choice of communication and criticise the choices of the others. This moment is extremely important in the development of reflexive capacities because it requires the entire learning community to report and to negotiate practices they have acquired through their interaction during the whole semester.

During this time of discussion, they learn how to communicate their skills by considering themselves communicating skills. They have to deploy a self-reflexive look on how to manage the image they give of their skills, explain why they made these particular choices of communication, provide solutions for improving the communication of developed skills and apply these proposals as best as possible, according to the other's feedback.

At the end of these three ePortfolio activities, the students are aware that communicating skills is a very strategic work requiring reflexive positioning. Then, the latter activities (d and e) are an opportunity to check how the students have integrated a reflexive attitude to their learning and communication practices.

Conclusion

Generally, the implementation of the research project with the ePortfolio tool in a Master's program has clearly helped improve the learning environment and allowed the consolidation of the program. The nature of the project (developing students' abilities to identify, verbalize and communicate the skills they have developed) has promoted a strong "involvement" of the students. One can assume that the "involvement" is motivated by a more explicit topicalisation of socio-professional issues. This dynamic has also enabled the teaching team to develop a sharper awareness of the educational issue of the program in which the students are involved.

Thus, the implementation of an ePortfolio has improved the transferability of skills through a better transmission of knowledge (with a reflection about the teachers' practices) and their uses (for students were better involved in their training). Such a device plays a part in the construction of the identity of the students as reflective and independent learners. It develops their ability to develop, manage and evaluate their own learning strategies. Autonomy and reflexivity are then called upon to reinforce the ability to transfer skills to another application domain, therefore facilitating the transition from university to the professional world.

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A Model for Embedding Reflective Learning in ePortfolios in Higher Education

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Abstract

Reflection is a common expectation of learners in higher education, both informally in the hope that learners will reflect and act upon feedback provided, but also in formal assessment tasks and ePortfolios. Despite the common (and often undefined) use of the term reflection, learners are not often taught how to reflect, which different types of reflection are possible, or how best to communicate their disciplinary knowledge through reflection. Indeed, attempts to include reflection in assessment tasks with little or no pedagogical scaffolding generally results in superficial reflections that have virtually no impact on learning or future practice. In addition there are obvious limits to how far an information system (such as an ePortfolio) can act to provide pedagogical scaffolding. This paper reports on the application of a theoretical model (TARL) around the teaching of reflection to undergraduate students through the selection of teaching activities from a multi-dimensional pedagogic field over time. A case study involving an ePortfolio submitted by a final year Education student who was taught using this model is analysed to show significant depth of reflective thinking along with transformative professional practice. The results support the contention that deliberative pedagogical scaffolding is a co-requisite for effective ePortfolio-based reflection.

Keywords: reflection, ePortfolio, pedagogy, higher education

Introduction

This paper is based on some early findings of a large ALTC project that sought to develop a cross-disciplinary approach to the teaching and assessing of reflective writing at the undergraduate level (Ryan and Ryan, 2010). A significant output of this research was a model for teaching and assessing reflective learning (TARL) that conceptualises pedagogical practice across courses (Ryan and Ryan, 2012). In the Faculty of Education, QUT, undergraduate students who have been taught using this model have started to apply their reflective thinking to assessment involving portfolios towards the end of their teacher education course. Here we report on preliminary findings based on a case study of these students and speculate on the relationships between academic reflection, pedagogical scaffolding and ePortfolio systems.

In the first part, we first examine the case for deliberative and staged pedagogical scaffolding that develops undergraduate student reflective capacities over time. This approach meets the critical need for the reflective writing as students assemble their ePortfolios as part of their course of study. Next, we analyse a case study to demonstrate how one student responded to an assessment task focused on the collection of a portfolio while engaged on field experience near the end of a teacher-preparation course. The connections between the TARL model and the student reflection provides cogent evidence of high-level and transformative learning. In the following discussion we speculate on the need for explicit teaching of reflection, in a coordinated way over undergraduate courses, as at the same time students organise artefacts into ePortfolios. We suggest that because of the complexity involved, it is not sufficient to offload such scaffolding onto an ePortfolio system.

A Model for Teaching and Assessing Reflective Learning

University assignments that ask students to "reflect" have a chequered history in higher education. There is evidence to suggest that reflective writing by higher education cohorts tends to be superficial unless it is approached in a consistent and systematic way (Orland-Barak, 2005). Thus, if students are not given much guidance, they tend to produce work composed of recount and response rather than making an authentic attempt to reflect on their experiences in a way that is framed within their discipline knowledge. This may be because students are not aware of what is meant by the term "reflection" within an academic setting, or it might be because they do not possess the linguistic resources to write in this genre. In short, the fundamental issue is in the teaching around reflection that they do, or do not receive. When a well-designed teaching episode is provided, students are better able to understand the nature of the task and can be scaffolded into producing high quality academic reflection.

Good pedagogic design (especially that targeting reflection) needs to account for many factors. To simplify the selection of possible designs around the teaching of reflection, Ryan and Ryan (2012) introduce a *pedagogic field*. It can be imagined as a two dimensional space where categories (or levels) of reflection are set against the development stages students experience, over time, throughout a course. Figure 1 shows the pedagogic field with these dimensions.

The dots represent specific teaching episodes (or *patterns*) that are relevant for students at a particular stage in their course and that target a specific level(s) of reflection. The trend indicated by the shaded area illustrates the expectation that increasingly higher levels of reflection are targeted as students progress through their course. For example, the Fishbowl Reflection pattern is seen as generally appropriate for students who have progressed past the foundation and onto to the mid-stage of a course and typically targets a mid-level of reflection. Of course, this is just an anticipated trend and some teaching approaches will lie outside this expectation.

Different scales have been proposed to characterise academic reflection, particularly in teacher education (Hatton and Smith, 1995; Kember, McKay, Sinclair and Wong, 2008). Ryan and Ryan (2012) chose to represent the levels of reflection as a simple scale, based on the work of Bain, Ballantyne, Packer, and Mills (1999) and Carrington & Selva (2010). Just four levels are used: a combined one of Reporting & Responding; Relating; Reasoning; and Reconstructing (the 4Rs). The levels increase in complexity and move from description of, and personal response to, an issue or situation; to the use of theory and experience to explain, interrogate, and ultimately transform practice. They suggest that the content or level of reflection should be determined by the problems and dilemmas of the individual in a particular context. At the broad level, reflection includes two key elements 1) making sense of experience; and importantly, 2) reimagining and/or planning future experience. This definition is based on the belief that reflection can operate at a number of levels, and suggests that to achieve the second element (reimagining), one must reach the higher, more abstract levels of critical or transformative reflection.

Figure 2 shows a student-orientated resource that identifies the different levels and provides general prompting questions that scaffold students into the type of thinking and expression at each level. The 4Rs is a general and accessible scale for students, with an easily remembered mnemonic.

The 4Rs provides the vertical axis for the pedagogic field which represents increasingly complex levels of higher-order thinking. Figure 3 shows an example of how other learning theories and professional standards can be optionally mapped alongside the 4Rs. The horizontal axis of the pedagogic field represent the phases of a course: foundation, theory and professional practice. The focus of reflection (what students are reflecting on) is likely to change over a course. Early in a course, students can readily reflect on their own understandings as well as surrounding social influences that they experience. Later in the course, students can reflect on other actors and events in their professional domain such as professional peers and clients. In concert with this more complex range, experiences typically change from ones that are simulated in the lecture- or tutorial-room to ones that are situated in real professional practice (such as an internship). Figure 3 shows just one instance of the whole TARK model (Ryan and Ryan, 2012) that may guide the selection of teaching methods across a course offered in a nursing school that used Kalantzis & Cope's knowledge processes as an organising framework.

Teaching patterns are abstract, formal descriptions of the steps involved in planning and executing a teaching episode. In the academic literature they are called pedagogical patterns (Goodyear, 2005) and their development in recent years can be traced from architectural design patterns pioneered by Alexander (1977). In short, they are recipe-like structured documents with descriptions based around the problem to be solved, contextual elements, planning steps, links to other patterns, etc. Ryan and Ryan (2012) collected teaching patterns associated with reflective teaching and assessment in undergraduate courses and organised them into a pedagogic field in order to assist selection. A sample pattern language with over 25 patterns was collected during 2010 and 2011 and is available at <http://edpatterns.net>.

Among these patterns were some associated with portfolio generation by students. For example, the Reflection as a Professional Activity during Service Learning (RPA) pattern is based on students keeping a portfolio of reflections as they engage in service learning experience. RPA is suitable for students in the capstone phase of their course and is scoped before, over, and after their field placement. It is worth noting that RPA and other patterns are based on the combination of an explicit teaching activity and of portfolio construction. Thus, support for, and development of, reflection has not just been "offloaded" to an ePortfolio system, but both components (pedagogy and system) are required.

Reflection and ePortfolios

Reflection has always been at the heart of ePortfolio student activity (Yancey, 2009). But what is the relationship between reflection and portfolios and where does responsibility lie for the support of student reflection? Yancey (2009) suggests that we should consider reflection both as a process and as a "text". So while reflection-as-a-process involves a wide range of mental operations, the writing of texts becomes an external manifestation of this thinking. This is an important distinction to make because it indicates that reflective writing is another genre to be mastered and that established pedagogic techniques for the teaching of writing can be brought to bear. The "texts" of an ePortfolio now include a wide array of modalities (image, video, conversation, etc), so the "writing" involves different skill sets than traditional

forms. In addition, a higher set of understandings that deal with the co-ordination of various multimodal elements becomes significant. However, this expansion increases, rather than diminishes the need for pedagogic intervention.

In an empirical study examining the relationship between ePortfolios and reflection with post-graduate students, Scott (2010) found that there was a strong correlation between portfolio use and reflection. Her definition of reflection closely matches the 4Rs framework (Ryan and Ryan, 2012) by including "... conscious awareness and questioning of personal experience, a search for alternative explanations and interpretations, and identification of areas for improvement." (p.430). She noted however, that with the experimental group, the level of reflection exhibited in the students' writing was not particularly high. She observes that this may have been because there was little opportunity for pedagogic intervention. Tellingly, Scott (2010) questions the perspective that the ePortfolio is a "tool" to engender reflection. In contrast, Mason (2009) while acknowledging the strong relationship between ePortfolios and reflection, frames a *technical question*, asking what "... kinds of tools might facilitate integrated reflection?" (p.73). Batson (2009) suggests a different metaphor for the relationship, arguing that rather than viewing ePortfolios as a repository, we should view them as a "place" for reflection. This debate is important, because if we ascribe pedagogic agency to a technical system like an ePortfolio in "facilitating" reflection, then technical issues can predominate. However, if ePortfolios are a "place" where human agents engage in pedagogic intervention to develop student reflection, then this framing suggests pedagogy should be the focus.

Orland-Barak (2005) identifies the problem when she asserts that we should worry less about the technical capabilities of a portfolio system, but concentrate on the quality of student reflection. And if student reflective "writing" is a genre to be mastered then pedagogic intervention should be the focus of research and development. When re-framed this way, the capabilities of an ePortfolio system can be measured against the degree to which they support the teaching and learning of reflection. For students, the development of ePortfolios cannot simply rely only on a "collection" of artefacts as evidence of particular achievements. It is in the responsible management and critical reflection of one's learning journey, that deep and sustainable learning can occur.

The Case Study

The purpose of this section is to demonstrate how one student responds to a portfolio building task where specific pedagogical intervention has been provided over an extended period of time. The aim is to illustrate an ideal relationship between a deliberative pedagogic approach to reflection and a collection of artefacts held in a portfolio system.

In this case, the student was a member of a large cohort (n=144) of teacher education students in the final year of the undergraduate study. Students were placed as trainee teachers in high schools for a four week block of field experience. During this time, in addition to teaching duties, the students were required to build a portfolio clustered around a self-selected theme, associated with the topic of school assessment. Following their field experience, the portfolio was submitted as a collection of electronic documents where the main part consisted of a reflective essay that drew upon artefacts that had been collected.

In earlier years of their teacher education course, the students were explicitly taught, and assessed on, reflective writing using the 4Rs scale. Pedagogic interventions were drawn from teaching patterns associated with the DRAW Project (Ryan and Ryan, 2010). Thus, by the time students were engaged in this portfolio task, they were well versed in the language of reflection, and had been assessed on their reflective writing ability when applied to field experiences.

The following paragraph, taken from one student (who had chosen the theme of "scaffolding"), demonstrates reflective writing associated with one portfolio artefact (a school-supplied model of scientific thinking):

After teaching an assignment focussed lesson I realised that the assignment task was too complex for my students to successfully interpret by themselves. I realized that I had assumed that students would be able to formulate a scientific argument naturally. I was unsure how to provide scaffolding, as I had never before had to do it for an assessment item. I raised the issue with my colleagues and was provided with a scaffolding model (Appendix 1) to use in the classroom.

In this text, the student is operating at the first level of the 4Rs (reporting and responding) since he is describing both an incident ("I realised that ...") and his response to it ("I was unsure ..."). He also describes an action and its result in the form of an attached artefact. This artefact was not authored by the student, but plays a key part in denoting and explaining an expansion in his teaching repertoire. This reflection is subjective (as is appropriate for reflection) but follows a clear line of explanation that is supported by evidence. The student employs specific linguistic devices of logical construction. So, while the artefact is

not "owned" by the student it provides a basis (or "place") for authentic reflection. Indeed, without this reflection, such an artefact would be of little value as a portfolio item.

A second fragment illustrates reflective writing at the second level of the 4Rs scale (relating):

Clearly some of the students in this class would have benefited from individually tailored scaffolding, however as identified by Li and Lim (2008) such an intervention would be too demanding on a classroom teacher. Instead I supplied additional materials to all students with the primary aim of assisting the students with lower literacy levels. This was done by incorporating the school wide approach to answering questions called QAR (Question Answer Relationship) (Appendix 2) into my classroom activities (Appendix 3)

Here, the student introduces discipline-related knowledge (the in-text citation) to explain and provide the basis for further professional action. By engaging in reflective "relating" this student is joining practical professional action with theoretical knowledge. Again, the text is structured as a subjective explanation that is supported by portfolio artefacts as evidence. In this case, one of these items is authored by the student. But both portfolio artefacts are really only meaningful when combined with the accompanying reflection.

A final fragment shows the student operating at the highest level on the 4Rs scale (reconstruction):

I now understand that individual students require different amounts [sic] scaffolding to complete the assessment tasks required of them but as for "How much scaffolding is enough?" I can now confidently say that many students require more scaffolding than I would have expected to complete an assessment item, but I have also seen that when too much is given it can be counterproductive and prevent students from engaging in higher order thinking.

The reflection appears in the conclusion and is preceded by a reasoned argument (third level of the 4Rs) intended to resolve a dilemma related to his topic of "scaffolding". Here he synthesises earlier reflections that were well supported by portfolio evidence. Significantly, this fragment is not linked to a portfolio item, but succinctly expresses the professional learning that took place.

All the students in this cohort construct portfolios prior to interviews with employing authorities. The reflective writing that they do in this context prepares them to speak authoritatively and authentically about their professional learning. Such "thick" descriptions, where their understandings are deeply connected to theoretical and policy frameworks as well as evidenced professional practice (the ePortfolio) are an excellent preparation for their selection interviews.

For students, the 4Rs scale provides an intellectual scaffolding for reflective expression in a way that complements the organisational features of an ePortfolio system. For university teachers, the 4Rs scale and the associated TARL model are instrumental in choosing and designing pedagogic intervention. For both university teachers and students, the scale is also useful in providing a basis for assessment by allowing students to structure their writing and for examiners to design assessment rubrics.

Discussion

The case study described here provides only fragmentary data to support the contention that deliberative pedagogic scaffolding in reflection is a co-requisite for effective ePortfolio reflection. There is clearly a need for longitudinal research that tracks the development of reflective capabilities of undergraduate students as they interact with ePortfolio systems over time. Such a study could well look at the effects of discipline settings, students from different backgrounds, as well as the influence of different teaching strategies that are coordinated across a course of study.

Nevertheless, it is worth imagining other ways this need (to develop high levels of critical reflection by emerging professionals) might be engendered. Some would argue that reflective thinking within discipline contexts emerges "naturally" and does not require any specific intervention. However the literature is strong on this point: when left to their own devices, most undergraduates tend to remain at the "descriptive" level of reflection (level 1 on the 4Rs scale). The sort of high level reflection demonstrated in this case study is unlikely to emerge "naturally". Others would attempt to offload the development of reflection onto an information system, by providing prompts or other sophisticated "tools" in an ePortfolio system. This approach conflates one need (management a collection of multimodal artefacts) with another (the development of critical reflection). Given that the latter involves teaching a complex genre of "writing", it falls firmly within the provence of good pedagogy.

The student examined in this case study was taught for some years using a consistent framework of reflection (the 4Rs). When engaged in field experience and portfolio construction, there was no new genre to be mastered, he already had a "language" of reflection and was able to insightfully choose critical incidents from his professional experience. Although this was demonstrable through his choice of artefacts to include in the portfolio, it was really only the reflective text that provided a window into his professional

learning. ePortfolios and reflective texts are both critical in providing this window, but they must work and develop together.

Conclusion

This paper theorises a new, transferable and customisable model for teaching and assessing reflective learning in higher education, which foregrounds and explains the pedagogic field of higher education as a multi-dimensional space. We have argued that explicit and strategic pedagogic intervention around reflection, supported by dynamic resources, is necessary for successful ePortfolio implementation in higher education. This is particularly the case for students during field experience where high levels of reflection may be needed to make sense of a complex new environment. The highlights the pedagogical balancing act of attending to different levels of reflection as a way to stimulate focused, thoughtful and reasoned reflections that show evidence of new ways of thinking and doing.

While the goal of academic or professional reflection is generally to move students to the highest level of reflection to transform their learning/practice, unless higher education teachers attend to every level of reflection, there are specific, observable gaps in the reflections that students produce. This approach has important implications for the pedagogic activity that prepares students as they construct their ePortfolios.

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Learning Scenarios with Integrated ePortfolios. EPortfolios are nice to have but do cause inconvenience...

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Abstract: Introduced by an analogy to Goldsworthy's reflection upon the line working with ePortfolios is strongly related to learning theories and basic assumptions of constructivism, constructionism (Papert), and social constructionism (Gergen). The implementation of ePortfolios, which are developed out of WordPress-based templates, in German university courses is described. EPortfolio-based learning is analysed in the context of the so-called knowledge society and bulimia-learning, so that motivational aspects and difficulties of the implementation of ePortfolios become obvious. Fromm's Being mode and self-directed learning are taken into account to widen up the discussion and strengthen a learner-oriented didactical perspective.

Introduction

The work of the British artist Andy Goldsworthy inspired us to reflect upon our work with ePortfolios. In his art landscape and the work of art are inextricably linked. This kind of art is created in nature, using natural materials such as soil, rock, stones, and organic media such as logs, branches, leaves, and so on. Sculptures in land art are not placed *in* the landscape; rather, the landscape is the means of their creation. In his permanent as well as in his ephemeral works, which are documented in photos, films and books, Goldsworthy takes great care of the places, their history and features. When he works with stones, leaves, wood, flowers (or whatever he finds on his walks), Goldsworthy often emphasizes structures and processes, growth and decay. So the *line* and its variations is one of his favoured forms.

"Searching out lines that already exist interests me more than imposing new ones. I have made lines that explore and follow the contours of a rock, the edge of a river, the growth of a bark, the junction between house and street ... The intention is not just to make a line, but to draw the change, movement, growth and decay that flow through a place" (Goldsworthy & Thompson 2000, 36).

Applying this idea by analogy with ePortfolios we would like to encourage students to draw their attention to development and growth that flow through their life. Discovering lines in their biography, and espying what is running through their life like a common thread is one of the core-elements in our work. And to follow Goldsworthy, who "like(s) things drawing themselves" (Goldsworthy & Thompson 2000, 13), and to underpin, "what is made visible in the piece itself" (Goldsworthy & Thompson 2000, 22) the art of ePortfolio in our opinion is to make competences and aspects of personality visible to oneself as well as to other people.

The 'poetry' of ePortfolios is the starting point of our didactical approach. We will strengthen these ideas by combining them with the constructionist learning theory (Papert 1987; Harel & Papert 1991; Han & Bhattacharya 2001; Gergen & Gergen 2009).

Constructivism, Constructionism, and Social Constructionism as basic elements of a learning theory for ePortfolios

The constructionist approach is based on the assumption that learning is a process of construction. The observation that children improve their ability to learn by doing very simple things is one of the core assumptions of constructionism (Papert 1987; Harel & Papert 1991). The basic idea is the parallelization of doing and learning. Learning is seen as the developing of corresponding knowledge structures by activities such as constructing, playing, solving problems...

The idea that our knowledge about our world and ourselves is made by processes of construction, do have both theories – the theory of social constructionism and radical constructivism – in common. What both directions distinguishes are different conceptions towards the character of knowledge and different answers to the question, how people create their common truth in context of corporate speech and action:

For constructivists each individual mentally constructs the world of experience, in other words: the process of world construction takes place 'in the head' (see Gergen 1999, 237). In this sense there could be as many realities as individuals, who interpreted and conceptualize. For social constructionist - in contrast -

what we take to be 'real' is an outcome of social relationships (see Gergen 1999, 237). This is not a small matter for our educational system.

Constructionists are critical of the individualist tradition, they search for relational alternatives to action and understanding the world. "Invited are generative discourses, that is, ways of talking and writing (and otherwise representing) that simultaneously challenge existing traditions of understanding, and offer new possibilities for action" (Gergen 1999, 49).

Constructions of the world itself can be proved by learners of their usefulness for problem solving. At the same time the learners prove their own construction in their head and the relation to the construction in the world. Thus the learners become an emancipated authority for examination and assessment of their own learning processes.

By implementing ePortfolios to degree-programs we contribute to this emancipation movement. Conceiving learning as a reconstruction rather than as a transmission of knowledge is one of the fundamental structures of ePortfolio work. The idea of creating meaningful artefacts as proofs and testimonies of learning and personal development is extended to the idea that learning is most effective when it is part of an activity. Our work with ePortfolios at university builds upon this learning theory and emphasizes self-directed learning.

Self-directed learning also encourages the "Being Mode" Erich Fromm describes as following: "Instead of being passive receptacles of words and ideas, they listen, they hear, and most important, they receive and they respond in an active, productive way. What they listen to stimulates their own thinking processes. New questions, new ideas, new perspectives arise" (Fromm 2007, 25). We will come back to this convergence of learning and developing later. At first we will explain three examples of learning scenarios and the ePortfolio-template we used in our work.

Implementation of ePortfolios within three learning scenarios at a German university

During university courses students were instructed in writing and constructing individual elements of their eportfolios which combine the functions of reflection, presentation and support of the learning process under one umbrella. The students developed those elements as authors of their own individual eportfolios and, as well, elaborated them as websites. There are two general aims in our work with ePortfolios: One aim is a web-based documentation of artifacts, which enables students to present their work to other people, not only the lecturer. The second aim as already explained by mentioning Goldsworthy's idea of a line is to encourage students to draw their attention to development and growth that flow through their life.

We prepared a WordPress based template (see Figure 1) for the students to put in their artifacts (essays, presentations...), thoughts, pictures, widgets... This template functions as a 'scaffold' (cf. Cotterill, Horner, Gill, McDonald, Drummond, Teasdale, Whitworth, Hammond 2007) so that students do not start with nothing. The students have to decide if they want to use this template/website only in one course or in further more or lifelong, and they can decide whom to invite to look or to blog at their ePortfolios or to be part of their ePortfolios.

The three learning scenarios are described by information about context (disciplines, target group, topics and ePortfolio-elements as well as kind of artifacts), support-forms, and experiences/feedback about the implementation and work with ePortfolios.

(1) Learning scenario 1 – context: Within the master degree-program at the University of Oldenburg 20 students from all disciplines can study a module called "Project-Management". Students work in smaller teams on individually chosen projects, for example managing an exhibition, publishing a reader, special events at school or in the zoo etc. All elements of project-management – public-relation, funding, time-scheduling, cooperation... – are represented and to be done by every team. All aspects should be collected and documented as an individual or team based ePortfolio.

(2) Learning scenario 2 – context: Within a Master-degree-program in economics at the University of Oldenburg 30 students have to create three artifacts for their ePortfolio: one essay about the main topic of the program, one paper for an empirical study, and one documentation of a seminar-moderation. Every student has to work on his own ePortfolio.

(3) Learning scenario 3 – context: Within the bachelor degree-program in education at the University of Oldenburg 10 students are trained in doing empirical research in cooperation with institutions that cooperate with the university. They could learn different skills, such as developing a research-question and a methodological design, analyzing and presenting data etc. Students in this course worked in smaller teams. They presented their results in individual ePortfolios.



Figure 1: WordPress based ePortfolio-Template

In all these contexts we worked together with the lecturers and carefully prepared the implementation of ePortfolios in their courses. Cooperation with lecturers was led by the constructionist attitude and the “celebration of reflexivity” (Gergen 1999, 50) as well: Suspending the obvious, listening to “alternative framings of reality, and to grapple with the comparative outcomes of multiple standpoints” (Gergen 1999, 50) is the core of our support-philosophy. We give the lecturers:

- didactical support in carefully listening to their thoughts, aims and methods and consulting them by presenting possible elements for ePortfolios and arguments for the benefit;
- support in implementation such as identifying steps in the implementation-procedure and dealing with the lecturers’ fears and stress, because of their new role in the teaching-process, and because of the cooperation with us;
- technical support such as a WordPress-based template (see Figure 1), we trained the lecturer and/or student-tutors in using the tool, and we deliver a service for technical problems on demand.

Implementing ePortfolios in degree programs are geared to three principles to be considered as general principles for implementing eLearning tools under a constructionist premise:

- (1) Technique follows content: Elearning tools are to be seen as tools in a stricter sense. Tools do have to support lectures and learners and should be adapted and customized to their needs and aims instead of vice-versa (cf. Cotterill, Horner, Hammond, McDonald, Drummond, Teasdale et al. 2005). Tools and learning forms carefully have to be reflected as consequences for the organization of learning arrangements and organization of seminars.
- (2) Cost-benefit analysis: Efforts and benefit of eLearning and ePortfolio tools must bring a return and yield a profit for teachers and learners. More teaching and learning opportunities should be introduced and opened up.
- (3) Respect of individual teaching method and learning strategies: Teachers’ peculiarity and their individual teaching method as well as students’ peculiarity and their individual learning strategies should be respected and esteemed.

In the past, the fast and furious development of new media and Information and Communication Technology (ICT) determined the hope of new and better ways of learning which should be more efficient, more effective, with better learning outcomes (Müller 2004; Kerres 2011). According to Kerres, these assumptions are only little supported by research: „In fact, it is assumed that learning success, considered on average, is to a large extent independent of the chosen media system“ (own translation by SB, Kerres 2005, 219). Evidently, not the media itself improve learning results, but the implementation of specific didactic concepts and learning scenarios (cf. Kerres 2011, 264; Issing 2011, 28).

Thus, eLearning tools should be regarded as tools in a strict sense – as they can support learning but do not revolutionize the learning process itself. This didactical view can be found not only in eLearning-centred research but also in other didactical approaches, cf. Oser and Baeriswyl's concept of Basis models of learning: “A basis model describes the learning sequences in regard to certain learning goals in a certain learning domain” (Baeriswyl 2001, 7). They distinguish the surface structure and the deep structure of learning: While the surface structure is something directly observable and includes all teaching methods as well as all social forms of learning, the deep structure “refers to the learning process as a psychological process” and can be only partly observable through the learner's actions (Baeriswyl 2001, 6). They state that the learning process is “somehow sequenced by every learner the same way” and assume “that for every important learning area, such sequences can be described” (ibid. 2001, 7). Oser and Baeriswyl postulate twelve basis models of which each consists of a certain number of learning sequences (cf. Oser & Baeriswyl 2001).

In his study, also Oser comes to the conclusion that “[t]he use of new methods and media still does not guarantee a better learning result” and that “[t]he goal is that every student understands his learning as a planned act and takes the necessary responsibility for it” (Baeriswyl 2001, 13).

Reflecting our experiences we focused on the question, how to merge the constructionist learning theory and one of the basic ideas of the portfolio work – not to learn for the school, but for life – on the one hand with the everyday life of German universities in the so-called “knowledge society”, which seems to be determined, among others, by the orientation on marks and credit points as well as a final degree which should be reached faster and faster on the other hand.

EPortfolio in a Knowledge Society

Today learning and teaching methods and styles are determined by the philosophy of the ‘knowledge society’ (also: ‘lifelong learning society’): “Knowledge production and development is readily recognized as one of the main drivers of economic development, and those who are able to make best use of knowledge will also be those who perform most effectively within globalized economic structures.” (Kirk 2011, 40) Learning is determined to have an output named knowledge, and this output is very important because of, among others, economic reasons (i.e. to be competitive capable). Because knowledge is so basic for a knowledge society, learning should be carried out according to the principle ‘as fast, as efficient, and as effective as possible’.

Ensuring that each student ‘possesses knowledge’, and that each individual mind has to master what is true seems to be part of every social discourse. “Students are thus confronted with curricula which have little intrinsic interest, and are subjected to frequent examinations of their capacity to repeat the truths as determined by the experts” (Gergen 1999, 179). This concept of competing and measuring has deep roots within our culture.

Constructivism is associated of individualist tradition in the West, in which the individual mind is the center of interest. Considering the ‘truth’ we have to keep in mind that there is “no simple relationship of reflection, imitation or one-in-one correspondence between language and the real world. The world is not accurately or otherwise reflected in the mirror of language” (Hall 1997, 28). Knowledge is produced through and at discourse. So relationships are prior to all that is intelligible (see Gergen 1999, 48).

The knowledge about the world is not universally valid. It depends on a certain historical context and is never finally fixed: “Meanings are born of coordination among persons – agreements, negotiations, affirmations [...]. Nothing exists for us – as an intelligible world of objects and persons – until there are relationships” (Gergen 1999, 48). The one and only truth does not exist.

From this point of view “relationship takes the priority over the individual self: selves are only realized as a byproduct of relatedness” (Gergen 1994, 249). The source of truth lies in society, it cannot be an individual matter, it is created in context of corporate speech and action. The dimension of the experts' opinions about the truth, which comes up and stays valid, does not depend on the empirical validity of view but on possibilities of social processes.

Since several years, the German society watches some of the consequences of this attitude: "Students suffer from burnout symptoms more and more" was the headline of an article on "Spiegel online", the online edition of a German political magazine [Spiegel ONLINE, 2012].

According to the article, a study reports that German students experience burnout symptoms because of the growing pressure which rises through the degree restructuring to a Bachelor/ Master system at the German Universities (following the Bologna Reform measures). Students would feel more and more pressure to perform and pressure of competition, and this would put an intractable strain on them.

Students seem to strive for being able to stand up for their profession later on as one of the primary outcomes of their studies - "functioning in a knowledge economy" (Siemens 2004). They worry about their future lives, they fear to stay unemployed after passing their degrees. The meaning of learning is reduced to a teleological view.

In Germany it is a common view that a fast completed degree is more valued and more respected later. Students "consume" knowledge in a passive way instead of acquiring it in an active way, because this seems to be the most efficient and the fastest way. Thus, the learning process gets more and more functional and is not anymore valuable because of itself.

In the past years, this attitude led to the neologism "bulimia learning". This notion means the mere memorization of facts ("bulimic swallowing") for the purpose of passing an assessment. After passing, the memorized facts quickly are forgotten as if they were „vomited". To demonstrate the significance of this development: When you search the term "bulimie-lernen bachelor" (bulimic learning bachelor) you will get 39.000 hits (Google, 01-06-2012).

We can already find a demonstration of these processes at Erich Fromm in 1976 within his distinction of two modes of existence: 'To have and to be':

"Our education generally tries to train people to have knowledge as a possession, by and large commensurate with the amount of property or social prestige they are likely to have in later life. The minimum they receive is the amount they will need in order to function properly in their work" (Fromm 2007, 34)

The Brazilian pedagogue Paulo Freire calls this traditional mode accurately "nutritionist"(see Gergen 1999, 180). In this model knowledge is treated as 'healthy food', students are defined as needy and educators are 'dispensers of the nutrients': "Ultimate authority in this case lies with those engaged in knowledge-production itself – for example, scientists and scholars. These experts 'dispense the truth' that students will ultimately be 'fed' [...]. Teachers enter only at the end, as instruments to dispense the educational nutrients to the students. Students are expected merely to consume the knowledge" (Gergen 1999, 180).

Who might benefit from this particular way of conceptualizing the world or selves, when students are treated as passive beings expected to absorb information? In this model creativity and innovation are drowned! But just innovation-power is one of the key competences we will need in future. Trend researchers are saying that required competences are changing: among others the initiative of changing, goal-oriented action and considerable vision (see Jánoszy 2012, 1). The world we will be living in is dominated by project work. Thus so-called informal competences become more and more important.

According to trend researchers the conventional mass culture with pursuit of attention involved disappearance for the benefit of the internet-logic, which impose more and more on our real world. In our world of one-to-one correspondence the economy of attention changes to an economy of acknowledgement. It becomes more and more important to be on a par with someone. The trend researcher predicts a decreasing importance of experts in the future (see Jánoszy 2012, 1). "At the same time, constructionism offers a bold invitation to transform social life, to build new futures. Transforming ourselves, our relationships, or our culture needs not await the intervention of some expert, a set of laws, public policies or the like. As we speak and write at this moment we participate in creating the future – for good or ill" (Gergen 1999, 49).

Discussion and Conclusions

The social constructionism does not claim truth but usefulness. The constructionists are attaching importance to the pluralism of constructions; they do not allow just one point of view. It becomes more important to focus on a critical view, which methods and materials or data are to be used? Students should be challenged more than impressed by the so-called truth, in order to explore and to deal with different perspectives and opinions.

In the internet-logic the information processing are tailored to particular, often customizable needs. This

logic should be broadcasts to our educational system. In the centre should be the student and his/her individual learning processes. Thinking about learning with ePortfolios, we assume that it meets the actual societal expectations of outcome orientation quite well. EPortfolios are useful for demonstrating how capable of high-performance and how suitable for certain employments the creator is. Indeed, as we understand the construction of an ePortfolio, this process should prioritize the "Being Mode" Erich Fromm describes. Learners "do not simply acquire knowledge that they can take home and memorize. Each student has been affected and has changed: each is different after the lecture than he or she was before it" (Fromm 2007, 25).

This way of learning, of course, causes inconvenience because of (at least) three reasons: Firstly, many students are unacquainted with this kind of learning anymore because of the above mentioned general conditions of their education design. Secondly, this way of learning demands to reflect one's own being in the world, it demands to combine, to interrelate and to be active, not passive. Thirdly, this way of learning takes its time and is not made for applying "bulimia learning". In spite of these inevitable inconveniences, the benefits of an ePortfolio are hidden until the learning culture changes fundamentally.

Until this fundamental change takes place it seems recommended to support students comprehensively in building their ePortfolios. Implementing ePortfolios should therefore esteem and value all the efforts that are linked to the learning activities. Students do need time and support in developing their ePortfolios within learning scenarios of modules. Intelligent solutions for combining scientific activities and ePortfolios in a more or less organic way seem promising. EPortfolios on the one hand may serve as a Trojan Horse for stimulating self-directed learning and implicit motivation. On the other hand there is some evidence that it could be useful to play out time, because working with ePortfolios creates growing interest and understanding of the capabilities, which are hidden on a first glance.

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Ten Key Ideas for ePortfolio Implementation in Higher Education.

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Introduction

L'approche « orientée compétences » s'inscrit dans les démarches impulsées dans l'espace européen de l'enseignement supérieur par le processus de Bologne. Dans ce contexte, la plupart des pays européens (et progressivement de l'ensemble de l'OCDE) organisent la valorisation et la promotion de la démarche ePortfolio. Cette démarche constitue un enjeu important pour le système universitaire. Elle renvoie à la fois aux problématiques de l'éducation et à celle de la formation « tout au long de la vie », au travers de la formalisation des parcours et des référentiels, de nouvelles modalités formelles et informelles d'acquisition ou encore de mise en exergue de compétences construites. En même temps, elle s'inscrit dans une logique de reconnaissance et de valorisation des acquis académiques et expérientiels, notamment dans la perspective de l'insertion professionnelle.

En France, de nouveaux textes réglementaires font référence de façon plus ou moins directe à la démarche ePortfolio. Pour exemple : concernant la certification Informatique et Internet (C2i), les principes et les modalités de certification reposent sur la constitution, par le candidat, d'un dossier numérique de compétences. Dans ce dossier, il doit faire état des savoirs qu'il a acquis ainsi que de la manière dont il a mobilisé et combiné ces acquis en situation, cela au regard des compétences requises pour l'obtention du certificat. D'une manière plus spécifique, « *ce dossier, constitué par le candidat, rassemble des éléments apportant la preuve des savoirs acquis, des aptitudes développées et des compétences maîtrisées en regard d'un référentiel C2i®. Ces éléments peuvent être des productions résultant des activités proposées au candidat et intégrées, autant que faire se peut, dans son cursus ; les résultats de contrôle de connaissances ; des productions externes commentées résultant d'activités du candidat en dehors de son cursus.* » (circulaire du 9 juin 2011).

Autre exemple : l'article 2 de l'arrêté du 1er août 2011, relatif à la Licence, précise que ce diplôme atteste l'acquisition d'un socle de connaissances et de compétences dans un champ disciplinaire ou pluridisciplinaires. Il annonce, dans son article 3, la production de référentiels de compétences définis pour une discipline ou un ensemble de disciplines. Actuellement, des référentiels sont en cours d'élaboration et seront prochainement publiés. *In fine*, dans l'article 13 de cet arrêté, il est précisé : « *Un processus dématérialisé de suivi des crédits acquis par chaque étudiant est mis en place* ».

Cette évolution majeure met en évidence la nécessité de s'interroger sur les dispositifs inhérents à cette démarche avec, en premier chef, l'accompagnement des étudiants et l'outillage supportant la démarche.

Afin d'apporter des réponses à nombre de questions liées à la démarche ePortfolio, un groupe de travail national (GTN) « ePortfolio » a été mis en place par la direction générale de l'enseignement supérieur (DGESIP), au cours du printemps 2011. Son but est de produire des éléments de clarification et des recommandations à l'attention des établissements d'enseignement supérieur français. Ce GTN est supporté par la mission numérique pour l'enseignement supérieur (MINES), au sein du service de la stratégie pour l'enseignement supérieur et l'insertion professionnelle.

Le GTN « ePortfolio » a pour objectifs spécifiques de :

- Dresser un état des lieux de la mise en œuvre de la démarche ePortfolio dans les établissements d'enseignement supérieur ;
- sensibiliser et informer la gouvernance des établissements, les services d'insertion professionnelle et les enseignants sur la démarche ePortfolio, tout en les outillant pour sa mise en œuvre notamment pour son pilotage politique et pédagogique ;
- proposer un cahier des charges fonctionnel afin d'aider à la mise en place des dispositifs de gestion de ePortfolios (SGeP) intégrés dans les systèmes d'information (SI) des établissements

d'enseignement supérieur¹². Ces dispositifs doivent donner la possibilité aux étudiants de disposer de ePortfolios sécurisés, pérennes, personnalisables, tout en leur permettant de présenter les données à partir de points de vue différents et des cibles visées au cours de leur formation initiale, en vue de leur insertion professionnelle comme de leur parcours professionnel tout au long de la vie.

Ces éléments seront rassemblés dans le livre blanc « La démarche ePortfolio dans l'enseignement supérieur français » à paraître au cours de l'automne 2012. Appelé à être révisé périodiquement en fonction de nouveaux besoins ou d'avancées technologiques majeures, ce document de clarification et de recommandation permettra également d'orienter d'éventuels développements :

- De standards (notamment processus de traduction d'échanges et de passerelles) ;
- d'applications informatiques (notamment de systèmes de gestion d'ePortfolios) ;
- de connecteurs entre différents systèmes d'information (système d'information d'organismes de formation et/ou système d'information d'employeurs...).
- Définition et clarification

Afin de faciliter les échanges entre l'ensemble des parties prenantes au sein des établissements, il est tout d'abord nécessaire de stabiliser les termes employés autour des propositions de clarification qui suivent.

Principes

Le ePortfolio est la propriété intellectuelle de son auteur, en l'occurrence de l'étudiant. Son contenu lui appartient et relève de sa vie privée. Il en a la maîtrise d'usage ; lui seul décide des données qu'il souhaite publier et avec qui il souhaite les partager.

L'établissement s'assure du pilotage de la globalité de la démarche ePortfolio ainsi que de la qualité du dispositif technique institutionnel, support à cette démarche. Intégré dans le système d'information de l'établissement, ce dispositif garantit l'interopérabilité : il prend en compte les normes et standards internationaux existants ou en cours d'élaboration, ainsi que la sécurité des données.

La démarche ePortfolio

Comme souligné précédemment, est considérée comme relevant d'une « démarche ePortfolio », toute démarche d'analyse réflexive d'un étudiant sur son parcours, ses apprentissages, ses expériences, ses compétences ou encore ses réalisations. La démarche vise à identifier, à expliciter et à formaliser l'ensemble de ces dimensions biographiques - tout en les valorisant et les capitalisant - dans un environnement numérique (le ePortfolio). Cet outil n'est que la partie visible d'une telle démarche dont l'enjeu est de développer l'agentivité et les compétences nécessaires pour cultiver (articuler « protection » et « projection ») de son identité numérique personnelle et professionnelle (Gauthier, 2008; Heutte & Caron, 2012; Kaplan, 2010).

Rappelons qu'il est souvent distingué quatre types de démarches¹³ pouvant, si besoin, s'articuler entre-elles :

- *Démarche ePortfolio d'apprentissage*, avec la visée d'identification de la progression dans les apprentissages et des acquis en termes de savoirs ;
- *démarche ePortfolio d'évaluation*, avec la visée d'évaluation de connaissances ou de compétences ;
- *démarche ePortfolio de présentation*, avec la visée de la mise en valeur des savoirs ou compétences acquises, du parcours, des expériences vécues, des productions ePortfolio de développement personnel avec la visée de construction réflexive de compétences ;
- *démarche ePortfolio de développement personnel*, avec la visée de construction réflexive de compétences.

Le dispositif technique ePortfolio à vocation à supporter, indépendamment ou en ensemble, ces quatre démarches.

¹² Le Cahier des charges fonctionnel « d'un dispositif technique support à la mise en œuvre d'une démarche ePortfolio » (CdCF « ePortfolio ») est disponible en téléchargement et peut être commenté *via* un formulaire en ligne : <http://www.enseignementsup-recherche.gouv.fr/eportfolio>.

¹³ ISO/IEC 20013 (PDTS2) : *Reference Model for e-Portfolio Information*, Technical Specification (PDTS2 Ballot).

Le pilotage de la démarche ePortfolio consiste à organiser et à maintenir un ensemble de dispositifs (notamment de formation et techniques) cohérents et coordonnés au sein de l'établissement, en vue d'accompagner les étudiants dans la démarche ePortfolio. La démarche prend tout son sens si l'étudiant l'associe à la question de son projet professionnel et personnel, garantissant ainsi que, quel que soit le moment où il entre ou quitte l'établissement, ses acquis soient capitalisés. Il revient à l'établissement d'inscrire cette démarche dans sa politique de mise en œuvre de la formation tout au long de la vie (FTLV) et, de fait, de s'interroger sur l'importation, l'exportation des données ainsi que la durée d'accès aux services numériques supportant la démarche ePortfolio et les dispositifs (pédagogiques et techniques) favorisant la construction de l'identité numérique des étudiants.

Le ePortfolio

S'inspirant de diverses définitions (Cloutier, Fortier, & Slade, 2006; De Rozario, 2005; Endrizzi, Gausssel, & Leclercq, 2005; Gauthier, 2008; Ravet, 2009a), Heutte et Jézégou (2012) définissent le ePortfolio comme est un ensemble évolutif de documents et de ressources électroniques capitalisés dans un environnement numérique décrivant et illustrant l'apprentissage, l'expérience, les compétences ou le parcours de son auteur. Accessible à distance via une technologie interopérable, un ePortfolio s'appuie sur une base de données personnelles (informations, documents ou liens accessibles via internet) et un (ou plusieurs) espace(s) collectif(s) de publication sélective.

L'auteur du ePortfolio doit pouvoir maîtriser le contenu et les services associés du ePortfolio qu'il veut partager, sous son contrôle, avec des tierces personnes, notamment pour :

- Capitaliser ses expériences tout en apportant les preuves de la maîtrise de compétences (scientifiques, d'ingénierie, sociales, etc.) ;
- permettre la validation, la certification ou la valorisation de ses acquis de l'éducation, de la formation ou de l'expérience ;
- favoriser l'autodétermination de son parcours de formation (initiale et continue) ;
- accompagner son insertion professionnelle ou son développement personnel et professionnel tout au long de la vie ;
- cultiver son identité numérique (obtenir une lisibilité professionnelle sur Internet) et se démarquer par la singularité de ses expériences, de son projet, de son parcours.

Le dispositif technique ePortfolio

Un dispositif technique support à la démarche ePortfolio doit être réfléchi en tenant compte trois niveaux d'organisation (Ravet, 2009a) :

- *Le système de gestion de ePortfolios (SGeP)* est un dispositif technique permettant à une organisation de gérer un ensemble de ePortfolios en adéquation avec le système d'information et la gestion du dispositif, telle qu'elle sera définie au préalable par l'organisation.
- *Le système ePortfolio (SeP)* est un ensemble de services numériques institutionnels permettant à une personne (ou une organisation) d'archiver les résultats de ses apprentissages, de les relier entre eux et à d'autres sources d'informations (autres documents, bases de données de compétences) et de publier des portfolios adaptés aux besoins d'audiences particulières. C'est également dans le SeP que s'organisent les échanges entre les acteurs (étudiants, enseignants, tuteurs, maîtres de stage, administration...).
- *Le ePortfolio (eP)* est un espace personnel de l'étudiant/apprenant avec un ensemble de services lui permettant d'organiser ses données.
- Ce dispositif technique comprend différents outils qu'il est nécessaire de distinguer (Ravet, 2009a), tout en soulignant l'importance de leurs articulations :
- *Une archive personnelle* contenant les preuves de compétences et acquis de l'éducation, de la formation, de l'expérience personnelle ou professionnelle (permettant notamment d'élaborer un dossier de compétences).

Exemple de fonctionnalités : Consultation du dossier scolaire, universitaire, du parcours professionnel et personnel.

- *Un système d'édition* permettant de sélectionner des éléments de cette archive, de les relier entre eux ou avec des sources extérieures (par exemple, lier une preuve de compétence avec un référentiel de compétences académique ou professionnel).

Exemple de fonctionnalités : Edition de CV, gestionnaire d'artefacts/de production, accès à un espace réflexif (blogs, wiki...), accès à des communautés d'appartenance, exportation des données et accès aux ressources externes dédiées à l'orientation et à l'insertion professionnelle (ONISEP, CIDJ, APEC, Organisations professionnelles...), import et exports de données, système de recherche multicritères.

- *Un système de publication* permettant de communiquer le résultat de ce travail d'édition, à un formateur ou un tuteur (dans le cadre d'une formation), à un évaluateur (dans le cadre d'une certification/diplomation), à un employeur potentiel (pour une recherche d'emploi), ou à toute autre personne ou entité à qui l'étudiant voudrait le communiquer.

Exemple de fonctionnalités : publication de CV, envoi de lien et de documents.

- *Un système de gestion* permettant à une organisation (une université ou un employeur) de gérer un ensemble de ePortfolio en fonction de l'objectif de l'organisation : suivi de l'évaluation, gestion des compétences, gestion des carrières.

Exemple de fonctionnalités : Saisie de notes, d'appréciation, d'évaluation, consultation du dossier scolaire et universitaire, du parcours professionnel.

Le dispositif technique support à la démarche ePortfolio doit permettre l'exploitation des flux de données et d'information entre les espaces personnels et les espaces institutionnels, selon les principes de porosité et de malléabilité (Caron & Varga, 2008).

L'enquête « état des lieux »

Une enquête en ligne lancée en début d'année 2012¹⁴ permet de dresser un premier état des lieux concernant les projets en cours. L'ensemble des données est en cours de traitement, nous souhaitons cependant en donner ici quelques premiers résultats (suite à une extraction réalisée le 1^{er} avril 2012).

Qualification des répondants

Parmi les 166 réponses, 157 étaient exploitables. Les répondants (pour ceux qui ont répondu à cette question) sont majoritairement des enseignants (52,7%), dont près des deux tiers sont enseignants-chercheurs, 24,5% sont des ingénieurs d'étude ou de recherche, 22,7% sont des gestionnaires ou des responsables administratifs.

Ces personnes décrivent des projets en cours dans 47 organisations, dont 35 sont des établissements de l'enseignement supérieur français.

Types de projets ePortfolio

Les projets ePortfolio sont majoritairement (81,1%) ciblés sur des étudiants en formation initiale, 18,9% en formation continue. Ces projets concernent pour 53,1% des étudiants inscrits en Licence, 38,8 % en Master et 8,2 % en Doctorat. Parmi les projets décrits, 19,6% concernent des formations en IUT, 17,4% la formation aux métiers de l'enseignement (majoritairement dans les IUFM) et 6,5% la formation des élèves ingénieurs.

Il n'y a généralement (86,2%) qu'un seul projet en cours dans les établissements. Cependant, 11,7% des établissements décrivent 2 projets distincts en cours et 2,1% en décrivent au moins 3. Dans les établissements où il y a plusieurs projets, les répondants insistent sur la nécessité d'une cohérence des dispositifs pédagogiques et d'une rationalisation des outils, sous peine de créer une incompréhension génératrice d'une démobilité massive des étudiants, comme des enseignants.

Pour les établissements ayant répondu à cette question, dans 55,1% des projets, il s'agit plutôt d'un ePortfolio de développement personnel (principalement lié au dispositif *Portefeuille d'expérience et de compétences (PEC)*), pour 27,5% d'un ePortfolio d'évaluation (principalement lié à l'évaluation du C2i), pour 13,0% d'un ePortfolio d'apprentissage, 4,3% d'un ePortfolio de présentation. Il est à noter que 13% des projets articulent plusieurs types.

¹⁴ Il est toujours possible de renseigner l'enquête « Démarche ePortfolio : État des lieux » pour signaler un nouveau projet : <http://www.enseignementsup-recherche.gouv.fr/eportfolio>.

La démarche ePortfolio concerne pour 49,0% l'insertion professionnelle, pour 25,5% elle fait partie de formations intégrées dans le curriculum (compétences "métier", alternance, projet professionnel de l'étudiant...), pour 23,5% elle concerne le C2i et 2,0% pour le CLES. De nombreux répondants soulignent que l'intégration au curriculum de la démarche ePortfolio (dans le cadre d'un dispositif pédagogique faisant partie intégrante d'un diplôme) est un gage d'efficacité et surtout d'une meilleure compréhension de l'intérêt de la démarche par les étudiants.

Pilotage de l'accompagnement et de la formation à la démarche ePortfolio

Ces projets sont majoritairement pilotés (56,1%) par les services en charge de l'orientation et de l'insertion professionnelle des étudiants. 17,1% le sont par des services TICE, 9,8% par des services en charge de la formation pédagogique des enseignants (du type service universitaire de pédagogie), 9,8% par des services en charge de la formation à distance, 7,3% par des services en charge de l'informatique et des systèmes d'information.

L'accompagnement et la formation des étudiants est une constante forte dans la plupart des établissements (92,2%), celle des enseignants ainsi que de l'ensemble des personnels en charge de l'accompagnement des étudiants se généralise (75,4 % des établissements). De nombreux répondants indiquent que ce n'est généralement pas la prise en main de l'outil qui pose problème, mais bien davantage la compréhension de la démarche ePortfolio et de son intérêt par les étudiants, comme par les enseignants.

Mutualisations inter universitaires

Les deux tiers des projets sont réalisés dans le cadre de collaborations inter universitaires.

Dans les réponses à l'enquête « état des lieux », il apparaît que 53,2% des projets s'inscrivent le dispositif *Portefeuille d'expérience et de compétences (PEC)* piloté par l'université Toulouse 3 – Paul Sabatier, 23,4% dans le consortium en charge du développement d'un *Environnement Malléable support à l'Évaluation des compétences (EMaEval)* piloté par l'université Lyon 1 – Claude Bernard, 14,9% œuvre au sein de la *communauté francophone de Mahara*, 4,3% utilisent le *Carnet de bord informatisé (Cbi)* soutenu par l'université de Reims Champagne Ardenne et 4,3% le *Module référentiel*.

Points de convergence des premiers retours d'expériences

Une synthèse partielle des éléments recueillis, entre avril 2011 et mars 2012, après consultations de près de 200 acteurs (réunions du groupe de travail national, appel à commentaires, enquête en ligne et entretiens individuels), complétée par une revue de littérature internationale (Dufour, 2011; Hallam et al., 2010; JISC, 2007, 2008; Janssen et al., 2011; Ravet, 2009b; Reese & Levy, 2009) permet de mettre en évidence et de conforter certains principes qui constituent des constantes prédictives des réussites (comme des échecs) de la démarche ePortfolio dans les établissements d'enseignement supérieur.

C'est autour de ces idées clés que s'organisent les orientations et propositions de pistes de mise en place d'une démarche ePortfolio qui seront préconisées dans le livre blanc à paraître au cours de l'automne 2012 et que nous souhaitons exposer brièvement, de façon hiérarchisée, dans les lignes suivantes, en nous focalisant plus particulièrement sur ce qui concerne le pilotage politique, les dispositifs pédagogiques et les dispositifs techniques.

À propos du pilotage politique

- 1) Les gouvernances des établissements s'assurent de la cohérence et de l'harmonisation des différents dispositifs s'intégrant dans la démarche ePortfolio (nouvelle licence, suppléments au diplôme, C2i, VAE, alternance, orientation, insertion professionnelle et mobilité européenne...).
- 2) La démarche ePortfolio permet une plus grande lisibilité des parcours individuel de l'étudiant et des parcours de formation, des acquis de l'éducation et de la formation, afin d'impliquer les employeurs potentiels et de comprendre leurs attentes et leurs besoins

À propos des dispositifs pédagogiques

- 3) Les données d'un ePortfolio relèvent d'activités réflexives intimes et complexes que l'étudiant mène dans un espace privé et confidentiel hébergé par l'institution. Les travaux partagés avec des tiers ou des pairs, en fonction des besoins académiques ou de démonstration d'employabilité, ne peuvent l'être que sous la responsabilité de l'étudiant.
- 4) La démarche ePortfolio s'intègre dans des dispositifs pédagogiques à la frontière des mondes académiques et professionnels dans une perspective de formation tout au long de la vie.

5) Un accompagnement humain fort est nécessaire pour initier la démarche et apprendre aux étudiants à être progressivement autonomes. Il se situe bien au-delà des contingences techniques liées à la prise en main d'un outil. La professionnalisation des acteurs de l'accompagnement est indispensable.

6) Le ePortfolio concerne l'identité numérique de l'étudiant. L'établissement a pour mission de faire acquérir les compétences nécessaires à la gestion de cette identité ainsi que de favoriser son enrichissement, notamment dans ses aspects académiques et professionnels

À propos des dispositifs techniques

7) La démarche ePortfolio repose sur un dispositif technique intégré au système d'informations de l'établissement, lequel garantit la cohérence et la globalité de la démarche. Toutes les données connues des services administratifs et pédagogiques de l'établissement, dont l'usage peut s'avérer utile, doivent être automatiquement et directement accessibles dans le dispositif ePortfolio grâce à une connexion aux applications métiers du Système d'information.

8) Le dispositif technique prévient toute lecture abusive et garantit le droit des intéressés dans la mesure où le contenu du ePortfolio appartient à l'étudiant et relève de la vie privée. C'est lui qui choisit, en fonction des publics, les informations qu'il veut donner à voir.

9) Le dispositif articule la description de l'offre de formation aux résultats et acquis de la formation. Il permet également l'édition, des documents académiques valorisant le curriculum de l'étudiant (diplômes, suppléments au diplôme, certificats, attestations...). Le dispositif vise à terme la mise en place d'un service d'authentification numérique de ces documents et sa pérennisation dans une perspective de formation tout au long de la vie.

10) Le dispositif garantit l'interopérabilité, en prenant en compte les normes et standards internationaux existants ou en cours d'élaboration, ainsi que la sécurité des données.

Conclusion

En guise de conclusion provisoire, nous souhaitons retenir que la démarche ePortfolio nécessite de développer et de maintenir de façon pérenne des dispositifs pédagogiques destinés à favoriser la création d'ePortfolios par les étudiants, notamment en vue de s'assurer qu'ils auront les compétences nécessaires pour cultiver leur identité numérique personnelle et professionnelle tout au long de la vie.

La mise en œuvre de la démarche ePortfolio repose en premier lieu sur une vision stratégique de la place de l'université française dans l'espace européen de l'enseignement supérieur, notamment dans ses compétences à valoriser les acquis de l'expérience, de l'éducation et de la formation tout au long de la vie des étudiants.

Tout en se préservant de la vision réductrice d'un pilotage par les contingences informatiques, les choix politiques et pédagogique induits par la démarche ePortfolio ne peuvent se concevoir sans une réflexion collégiale éclairée de l'ensemble des acteurs prenant effectivement et pleinement en compte la dimension technologique incontournable de cette démarche.

A l'évidence, la réussite de démarche ePortfolio nécessite une implication forte des gouvernances des établissements d'enseignement supérieur (présidents et vice-présidents, directeurs, responsables des services de formation ou en charge de l'insertion professionnelle), notamment afin de coordonner les actions de l'ensemble des communautés professionnelles à mobiliser :

- les praticiens — qui accompagnent les étudiants et les acteurs de cet accompagnement — et notamment les enseignants, les professionnels de l'accompagnement des Bureau d'aide à l'insertion professionnelle (BAIP), des Service universitaire d'information d'orientation (SUIO), des Services de formation continue universitaires ;
- les ingénieurs et informaticiens qui fournissent les services supports adaptés aux besoins de l'ensemble des acteurs et au bon fonctionnement des dispositifs ;
- les professionnels des ressources humaines, du recrutement, et les cadres chargés des démarches compétences désormais incontournables dans les entreprises privées et les services publics.
- Enfin, il ne faut pas manquer de mobiliser les chercheurs, dès la conception des dispositifs, afin qu'ils soient en mesure d'évaluer, de modéliser et de produire des connaissances sur les phénomènes induits par ces dispositifs dans les meilleures conditions méthodologiques possibles. Développer un lien organique étroit entre formation et recherche relatives à la pédagogie universitaire est à l'évidence le meilleur moyen de conjuguer ensemble excellence de la recherche

et excellence des formations, afin notamment de pouvoir en retour éclairer les pratiques des différents acteurs (Heutte, Lameul, & Bertrand, 2010).

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An Integrated ePortfolio Plan for a Large Research University

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ABSTRACT

An integrated ePortfolio tool being designed and developed at Brigham Young University (BYU) will greatly facilitate assessment of student learning as well as our university objectives. BYU serves over 30,000 students across 12 colleges and over 50 departments offering over 400 degree-granting programs.

Key components of the developing plan include:

- All applicants to BYU will be required to submit a portfolio of their best academic work, leadership, achievements and life goals. They may choose to begin a university-hosted ePortfolio years before their application date. University departments looking for gifted/talented applicants in their discipline can search portfolios at any time (with the applicant's permission). The ePortfolio tool will also facilitate applicants' ability to contact each other, blog, socialize, share insights/advice, and view each other's ePortfolio materials.
- After applicants are admitted, some university core and general education courses and majors will require the use of the ePortfolio as a portal for submitting peer-reviewed work, displaying assignments and developing a resume. The ePortfolio will also allow each artifact to be tagged and be viewable by different groups – friends, family, instructors, classmates, others within their major (at BYU and elsewhere), potential employers, or no one. Visitors may leave comments or reviews of items, but the student has ownership and the option to delete.
- The ePortfolio is integrated, sharing data via web services with the university admissions data base and the university learning management system (*BYU Learning Suite*). The BYU ePortfolio will be one of nine tabbed components in the *BYU Learning Suite* that also include: *Home, Content, Exams, Syllabus, Digital Dialog, Grades, and Schedule*. Data entered *once* in any component of the suite can be shared as needed with other components. Storing draft papers, getting peer reviews, revising and submitting assignments can be done from this tool.
- Students will be asked to record reflections on their own learning and development. Some university courses already require a "learning journal." The ePortfolio tool will facilitate such journals and blogs and allow students to determine viewership of each entry or thread. These student reflections, combined with a multi-year sequence of learning artifacts and standardized test scores, may be the *best direct evidence of learning*. These data would be of vital importance for external assessors, faculty, parents, administration, and the students themselves concerning what they have learned and where and how they learned it. We anticipate that a good sampling of students would choose to share these reflections with some of these stakeholders. These student reflections would make valuable supplements to program exit interviews.
- Although the ePortfolio is primarily intended as a student-centric, student-controlled tool, the artifacts and learning reflections that students share with their programs and the university will be evaluated with the resulting data rolled-up to determine how well the university is accomplishing its mission-related objectives. This process will work best with carefully scored assignments (using well-designed rubrics) over a multi-year period in university core courses. Both the assessments and a sampling of artifacts will be stored by the university outside of the student portfolios. The *BYU Learning Suite* already has a highly-integrated *Learning Outcomes* website with published outcomes for every course and program. Storing assessments and artifacts from ePortfolios is the next logical step in our overall university assessment plan.
- Our ePortfolio plan currently calls for students to keep their portfolios and university-templated resumes for at least three years post-graduation. During that time, we will encourage graduates to move memory-intensive materials to storage elsewhere, but allow them to link the items back to a university-designed template (with the university seal), verifying their BYU affiliation. Longer-term sponsorship and hosting of their portfolios is being considered. Allowing graduates to have the ability to continue to add materials and reflections to their portfolios would help the university evaluate one of our stated core themes – "lifelong learning and service."

Although the plan outlined above is largely still in the planning and construction phase, it is underway. Some BYU departments and colleges on campus currently utilize ePortfolios in some of their assessments. The ideas above represent the good work of many people, including the *BYU Center for Teaching and Learning*, students, and faculty. The determination and funding to complete this plan may soon be realized.

ePortfolio practice in companies (NL)

Dries Pruis, Lex Polman, Kenteq, the Netherlands

Context

In the past ten years ePortfolio used in the Netherlands on a large scale in education. Today we see a trend that the ePortfolio is increasingly used in companies and organizations for the professional development of the staff. Kenteq, The centre of expertise and advice for technical craftsmanship has an intermediary role between the vocational education and companies. They promote the use of ePortfolios, because they offer several eServices for employability goals.

Objectives

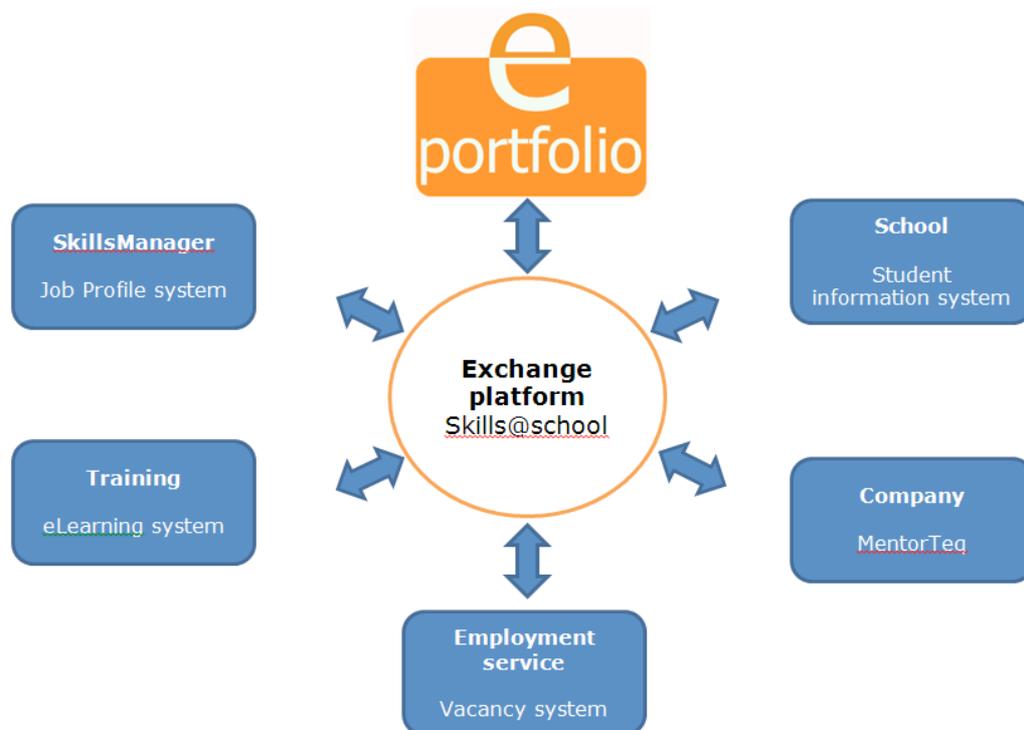
We want to give an overview of various initiatives in the Dutch business community. The examples refers to lifelong learning, work based learning and organisational learning.

Three ePortfolio project in companies

In our presentation we briefly show three projects in which the ePortfolio is a tool for professional development of the staff.

MentorTeq/Skills @ School

Students in vocational education must be performing a large part of their training in companies. The workplace coach of the company has access to an electronic instrument "MentorTeq", in which he can plan and assess the student during the practical part of the training. The school uses a different system for the progress of the theoretical part of the student. In the project we want to use the ePortfolio as a tool for the student to access his data from both the operating systems of the school and the company.



In the project we developed a exchange platform, which enables the transfer of data from other systems with an ePortfolio. This makes it possible for example that a teacher can view the results of the practical period of de student.

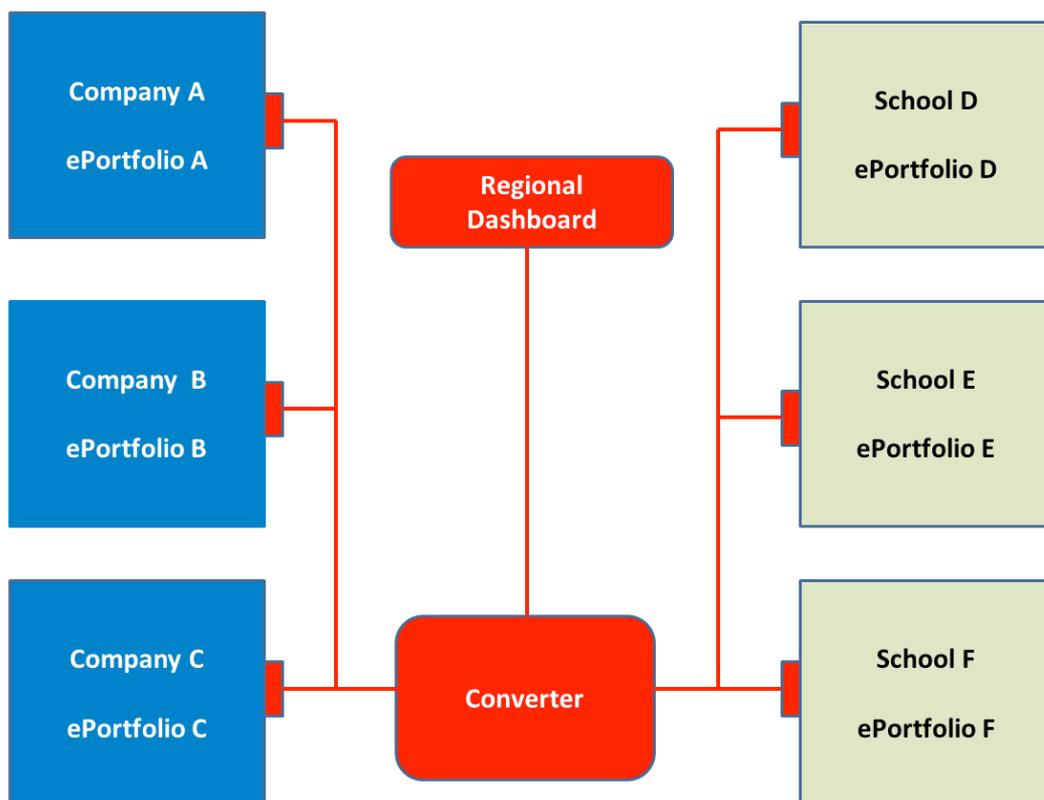
Let's Connect

The project Let's Connect is an innovative concept that helps companies systematically and decisively

in the quest for the right person at the right place at the right time with the right qualifications. In 9 pilot companies in the Southeast of the Netherlands we implement different ePortfolios for approximately 320 employees.

The pilot companies also get access to a business dashboard, in which they have more insight into the existing quality of the staff.

On a regional scale the same standard is used in terms of competencies and job profiles in Let's Connect and provides insight into the functioning of labour markets of Southeast Netherlands. Therefore a regional labour market dashboard is developed.



In the project we connect all different ePortfolios from both companies and schools to a converter. This converter translates all information according to a standard norm. That makes it possible that the dashboard can show information about the present competences in the regional labour market.

SME ePortfolio

The SME ePortfolio project involves the value of an ePortfolio in the mid-sized companies. We show the success of the implementation of ePortfolios at "IJssel Technologie". In this company, all employees have access to an ePortfolio in which their profile and also their competencies are recorded. The company has access to an organization portfolio, which is a representation of all portfolios of the employees. The company has so understanding of all existing competencies and can therefore plan their projects much better.



The company IJSsel Technologie provides maintenance engineers to other companies. If necessary the employees are trained in their own academy for their task. All relevant information of the employees is stored in the ePortfolio. The maintenance engineers can use their ePortfolio to present them self at the company.

Conclusions

The presented examples of the ePortfolio implementation within the companies show that an instrument such as an ePortfolio certainly added value to companies.

Developments of Social Recognition System by e-Portfolio and e-Passport to Promote Social Participation

Yamanishi, Junichi (University of Toyama)

Saku, Tomio (Civic Learning Community by Internet)

Tatsuta, Yoshihiro(National Institute for Educational policy of Japan)

- I. Introduction: Outline of This Research
- II. Development of e-Portfolio and e-Passport system
- III. Experiments of high school student, graduate and adult learner
- IV. From Assessment To Evaluation and Recognition
- V. Conclusion

I.Outline of This Research

1. What is Civic Learning Community

- 1) Lifelong Learning Platform where a variety of generations learn
- 2) Learners can be community leader through social participation
- 3) Social platform to stock learning activities and learning experiences

2. Task

- 1) A deficiency of any system to use individual learning outcome to society.
- 2) A deficiency of any suitable educational system to use individual learning outcome to society.
- 3) The necessity of evidence based study to use individual learning outcome to society.
- 4) The necessity of evidence based study of purpose not only career support but on social participation

3. Purpose of Research

- 1) To verify educational effect of showcase which learner thinks social relation and social contribution reflecting himself of herself and present oneself to the others by assessments quantitatively and qualitatively
- 2) Development of social participation system with social recognition of human resources for communities through granting e-Passport after evaluating personal showcases.

II.Development of e-Portfolio and e-Passport system

1.Extension of e-Portfolio system

- 1) Devices for keeping to memorize such as using smartphone or face book
- 2) Implementation those devices to learning platform

2. Fulfillment of functions to assess and evaluate in showcase

- 1) Self-assessments by 7 steps
- 2) Presentation of statements of learning outcomes in the terms of activity, competency, and vision.
- 3) Formative assessments and evaluation by some kinds of advisor.
- 4) Use of electronic presentation devices

3. Development of social recognition system

- 1) Social recognition system to use human resources in community as social capital.
- 2) Social recognition system organizing with regional governments, industries and academic communities.
- 3) Social recognition by online system

III. Experiments of high school student, graduate and adult learner

1. High school student
2. Graduate
3. Adult learner to promote community learning

IV. From Assessment To Evaluation and Recognition

1. Assessment and evaluation of showcase
 - 1) Formative assessment and performance assessment
 - 2) Self-check of key competencies
 - 3) Assessment of training to use showcase
2. Social recognition system
 - 1) Social recognition valued to adult learners who have a variety of experiences and expect any social roles.
 - 2) Summative assessments and new findings over personal e-Portfolio.
 - 3) Evaluation of community human resources based on quantitative and qualitative evidences.

V. Conclusion

1. The importance of supporting system for social participation and the issues.
2. The importance of key competency as a stock.
3. In line with the variety of community.
4. Goal to accumulated social capital and development of social community.

Collecting, Selecting and Reflecting – Supporting student judgements in the portfolio process?

Romy J Lawson, James Cook University, Darrall G Thompson, University of Technology Sydney

Abstract

ePortfolios allow students to demonstrate competencies and reflect upon experiences, documenting academic preparation and career readiness. Creating ePortfolios is said to enable students to enhance their learning by giving them a better understanding of their skills and attributes, as well as where and how they need to improve to meet academic and career goals (Yancey, 1999). The collection involves student participation in selecting contents; the criteria for selection; the criteria for judging merit, and evidence of their self-reflection (Barret, 2000). Yorke (2008) discusses that this approach poses questions about how students judge their achievements and requires the student to make a case that they merit the award or job in question. This presumes an ability to make sound judgements about their work in relation to criteria and expected standards.

One of the core purposes of higher education is to develop the capacity for students to make judgements about their own work (Boud and Falchikov, 2007). If a graduate is not able to do this adequately they will be ill equipped for most professional or even non-professional roles. The development of the capacity to make self-judgements about performance tends to be an assumed outcome of higher education. That is, it is taken to be part of any course without the need for specific engagement in self-assessment; however this is rarely evident in curricula through learning activities or assessment processes (O'Donovan, Price & Rust, 2008). Research on student self-assessment has suggested that explicit opportunities need to be included for the skill of self-assessing to be developed (eg. Boud, 1995). Building the capacity to make judgements needs to be an overt part of any curriculum and one that needs to be fostered (Boud and Falchikov, 2007). A skill that the authors propose is vital to optimise the educational benefits and validity of ePortfolios.

This paper introduces web-based marking system, REVIEWTM, which facilitates the development of self-assessment in learning processes, by engaging academics and students in a deeper understanding of assessment criteria in relation to graduate attributes, and providing a mechanism to guide students through making judgements about their work using these criteria. It should be noted that REVIEWTM is not an ePortfolio but a marking tool used by academics to deliver feedback on assessment tasks. Students make judgements on their performance in relation to the assessment criteria for each of the criteria using a sliding grading scale. Academics mark assessments directly online using REVIEWTM's data sliders in a similar fashion to the student self-assessment process. After entering their assessments, the academics are able to see how students self-assessed their work. Where there is a large variation between a student's self-assessment and the academics' grading, the academics are able to use this difference between the student's assessment and their own as a guide for feedback. Students are then able to view the academics' gradings for each criterion and overall, as well as the written feedback for the assessment task together with a display of their progress in attribute categories that each criterion is coded to. Thereby REVIEWTM facilitates their reflection about the academics' assessment of their work in comparison to their own self-assessment.

Boud, Brew, Lawson & Thompson (2010) found that when students were introduced to self-assessing using REVIEWTM, initially students tended to overestimate in criteria-based judgements about their own work. However over time, students' judgements did converge with those of tutors when given further self-assessment opportunities, which indicates that students improved their understanding of the standards applied by the academics as a result of the self-assessment and feedback system.

The authors propose that in order to support students in their ePortfolio collections, selections and reflections it is vital to develop their ability to judge their own work against criteria and standards as part of the normal assessment process in their courses of study.

Keywords: Self-assessment; Judgement of criteria and standards.

Background

What is an ePortfolio?

ePortfolios can be a collection of artefacts to provide evidence of ability, a series of reflections on experiences or a combination of both. The literature contains many definitions of ePortfolios and categorisations of how they can be used (Butler, 2006). This example captures the essential features:

‘A digital collection of authentic and diverse evidence drawn from a larger archive that represents what a person has learned over time, on which a person has reflected, designed for presentation to one or more audiences for a particular rhetorical purpose’. (NLII, 2003).

How does an ePortfolio foster learning?

The institutional application of ePortfolios could include a teacher-initiated assessment requirement within a single course. For example, a teacher might adapt an existing assessment activity, such as a group project, to provide an opportunity for students to reflect on their participation within a group as a way of contributing to the development of their teamwork skills. A student could use an ePortfolio to showcase their contribution to the team, and to describe what they have learnt about teamwork during the project. The teacher’s framing of the assessment activity will largely determine what latitude, if any, the student has in personalising their ePortfolio component.

ePortfolios can provide an approach that:

- encourages students to reflect on and recognise their own progress and achievement, thus increasing their confidence;
- promotes and supports informed student self-assessment, peer assessment and dialogue, about learning and achievement between students, tutors/lecturers, and potential employers;
- enables planned learning pathways and evidence of achievement;
- promotes good practice in teaching, learning and assessment;
- enhances education providers’ quality assurance and improvement practices.
- develops students’ critical self-evaluation skills

According to Housego and Parker (2009) the format of ePortfolios also allows for academics to promote learning through:

- **Structured Criteria Assessments:** outlining the criteria for assessment tasks, prompting for each of these criteria to provide a description of the expected standards for the criteria, for example a description of what work would “exceed expectations” or “meet expectations”.
- **Provision of Student Feedback:** assessments are marked using the criteria developed for each task. Teaching staff have the opportunity to add further feedback for each criteria but when no additional feedback is given the student will still have access the description of the performance level they have achieved and this description will outline areas that they need to develop as well as elements that they were competent in.
- **Evidence for program accreditation:** this requires the development across a degree program of evidence by the course team engaged in its delivery, that teaching and learning practices are achieving the outcomes described when the program was accredited.

The onus of collecting, selecting and reflecting is left largely to the students themselves and requires them to weave a story rather than just list subjects completed and marks obtained. Students need to gain confidence in engaging with criteria-based assessment of their own performance for a broad range of future requirements in both education and industry. For example students collating an ePortfolio presentation targeting employment will need to vary this in both content and ‘look and feel’ from company to company according to the companies selection criteria. Opportunities for self-assessment against criteria are difficult to administer in an educational context but the authors’ previous research has found this to have a significant impact on the student’s recognition of the quality of their own work.

Self-Assessment

What is Self-Assessment?

Self-assessment is increasingly used in higher education as a strategy for both student learning and assessment. According to Boud (1995), all assessment including self-assessment comprises two main elements: making decisions about the standards of performance expected and then making judgments about the quality of the performance in relation to these standards. When self-assessment is introduced, it should ideally involve students in both of these aspects. Andrade and Du (2007) provide a helpful definition of self-assessment that focuses on the formative learning that it can promote:

‘Self-assessment is a process of formative assessment during which students reflect on and evaluate the quality of their work and their learning, judge the degree to which they reflect explicitly stated goals or criteria, identify strengths and weaknesses in their work, and revise accordingly’ (2007, p.160).

How does Self-Assessment foster learning?

Self-assessment begins to shift the culture from a prevalent one in which students undertake assessment tasks solely in the spirit of pleasing the lecturer (Boud, 1995). Focus shifts away from satisfying the lecturer and more towards the quality of the learning. Boud (1995), writing about the origins of his long interest in self-assessment, invokes a picture of the way in which so many student assessment endeavours are misdirected, when he comments there was “a slow dawning that it was not others I should be satisfying in my learning endeavours, but myself” (p. 3). Self-assessment with its emphasis on student responsibility and making judgments is “a necessary skill for lifelong learning” (Boud, 1995, p.11).

This paper describes one way of developing judgment-making through students’ self-assessment of their performance with respect to each criterion for each assessment task throughout an undergraduate degree program. It proposes that opportunities for self-assessment over time helps students develop the capacity to make better judgements about their work and describes a tool that can provide developmental charts of attribute development useful as verified evidence in an ePortfolio context.

Making judgments about the progress of one’s own learning is integral to the learning process.

- Teaching strategies that encouraging self-evaluation build on a natural tendency for students’ interest in the progress of their own learning.
- Further learning is much more possible after the recognition of what needs to be learned.
- If a student can identify his/her learning progress, this may motivate further learning.
- Self-evaluation strategies encourage students’ reflection on their own learning.
- Student self-assessment can promote learner responsibility and independence.
- Student self-assessment tasks encourage student ownership of the learning.
- Student self-assessment tasks shift the focus from something imposed by someone else to a potential partnership.
- Student self-assessment emphasizes the formative aspects of assessment.
- Student self-assessment encourages a focus on reflective process as a learning activity.
- Student self-assessment can accommodate diversity of learners’ readiness, experience and backgrounds.
- Student self-assessment practices align well with the shift in the higher education literature from a focus on teacher performance to an emphasis on student learning.

There have been many studies of student self-assessment over the years and considerable advocacy for the effectiveness of practices in which students review their own work (eg. Dochy et al 1999). It has been well argued that students need to develop the capacity to make judgements about their own work if they are to be effective learners both in their present courses and following graduation.

The development of the ability to make judgements about their own work needs multiple opportunities over time. We suggest that learners’ judgements need to be calibrated against the judgements of others who have a more sophisticated understanding of the type of work being assessed in order to promote the skill and for students to become aware that their judgments have improved. Through such a process of

scaffolding, students can move progressively towards the kinds of quasi-independent judgements about self-performance needed for effective lifelong learning (Boud and Falchikov 2007).

Arranging opportunities for self-assessment and motivating students to do it on an ongoing basis is problematic for a number of reasons. For example, if students are obliged to self-assess or penalised for not doing so there is an increased likelihood of surface approaches related to extrinsic motivation; if the collection and collation of data and delivery of feedback is onerous for staff or students it is unlikely to be sustained over time, and if the assessment criteria are not clear or explicit students are likely to disengage from the process. However, if the assessment can be done online with an easy to use visual interface that saves time, and gives progressive feedback that can be tracked over semesters and across subject boundaries, then there is a possibility for self-assessment to become a regular feature of the assessment landscape. This problem led to the design and development of the REVIEW™ criteria-based assessment system at UTS together with a process that linked assessment criteria with graduate attribute categories and learning goals.

Enabling Self Assessment - REVIEW™

What is REVIEW™?

REVIEW™ is a UTS developed system for criterion based online feedback that has been designed to facilitate marking and provide feedback to students that is focused around descriptive assessment criteria. It facilitates students' self-assessment of their submission against criteria, which can then be viewed and compared with the marker's assessment for each criterion. This assists their understanding of those criteria with the aim of improving their performance for the next assessment. REVIEW™

How does REVIEW™ promote accurate judgement of criteria and standards and so foster learning?

Students can view rich descriptive criteria for tasks before they hand in assignments and engage in iterative self-assessment up until the feedback from tutors is published. This allows an important process in which clarification of the criteria due to student comments and feedback occurs prior to the actual submission deadline.

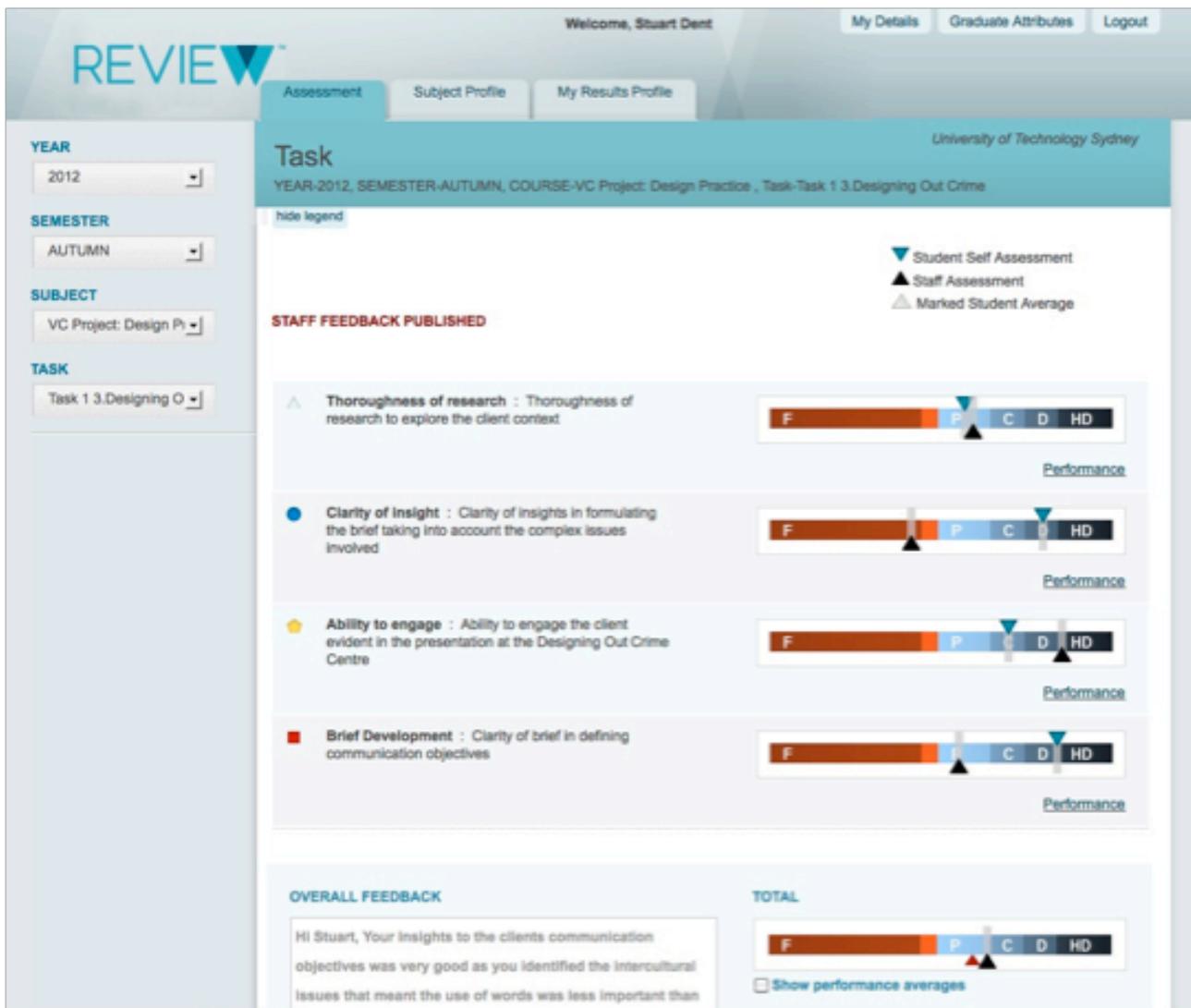


Figure 1 – Student feedback screen showing Tutors assessment (below the grading slider) in comparison with student self-assessment (above the grading slider) with attribute coded assessment criteria.

REVIEW™ allows students to:

- be involved in the refinement of assessment criteria on which their work is assessed
- self-assess their work according to descriptive criteria that identify the subtle and specific aspects of their work being assessed by tutors
- compare their self-assessment of each criterion with the assessment of the tutor/lecturer
- receive feedback on their work (desktop or mobile) with comments against each criterion where appropriate that can be exported as pdf or excel files.
- monitor their ongoing development of graduate attributes throughout their course of study with exportable graphs for inclusion in ePortfolios.

Reasons teachers use REVIEW™ include:

- To encourage Students to focus on criteria-based feedback rather than the mark
- Online access and record for everyone (students, all tutors, coordinator)
- Coordinate large teaching teams – facilitates an assessment ‘community’
- Moderate/ benchmark marking across teaching team
- Development of students’ self-evaluation and assessment awareness & skills
- Export assurance of learning reports and output pdf’s of marking sheets and results

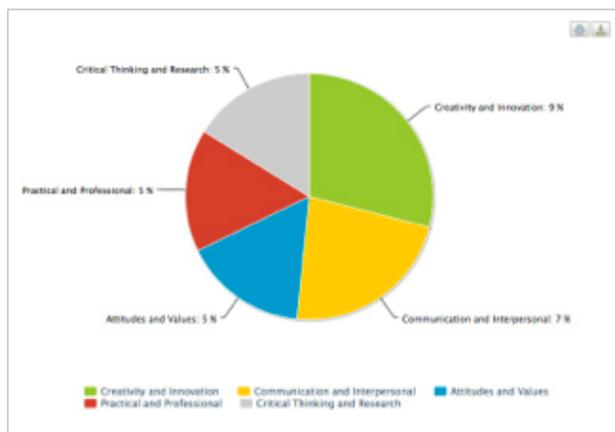


Figure 2 – Pie chart subject profile showing categories of attributes assessed in a subject through colour-coded criteria



Figure 3 – Student Results profile screen showing criteria assessment results for a subject in terms of attribute categories being developed

Whilst REVIEW™ is not an ePortfolio system its embedding of student self-assessment and graduate attributes in the day-to-day assessment framework provides a great deal of valid data and supportive evidence for students developing their ePortfolios.

Conclusion

The authors propose that in order to support students in their ePortfolio collections, selections and reflections it is vital to develop their ability to judge their own work against criteria and standards as part of the normal assessment process in their courses of study. However, encouraging a deep engagement is the key to genuine ePortfolio adoption and large complex online systems with poor interfaces are unlikely to be effective. There are many subtle dynamics involved in encouraging both students and staff to engage with such teaching and learning initiatives and the ease of use / availability / stability of online systems is always an issue. The evidence to date is that assessment is the fulcrum of engagement for both staff and students and the refinement of descriptive assessment criteria the main vehicle for improving students' judgements of their own work. REVIEW™ focuses on a visual and interactive approach to assessment that saves time and has documented evidence of improving student judgement through non-obligatory student self-assessment over time.

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A 4-phase-model for the long-term use of e-portfolios

Klaus Himpsl-Gutermann

Abstract

The paper centres on an empirical study concluding a three-year action research project, in which a digital portfolio was conceived, implemented and evaluated as an integral component of an extra-occupational continued education course. In the final study, which is based on interviews with alumni, the student's perspective was the main focus. What were the e-portfolio's and the embedded digital media's benefits during studies and beyond? Which problems arose in using them, and how did the learners cope? The case study based on Grounded Theory methodology shows that an ideal-typical development can be described in four phases, in which students orientate, position, identify and present themselves. For a better understanding of the model, the first part of the paper presents the study's context as well as the main aspects of e-portfolio implementation – a detailed description of the concept, the research design as well as empirical documentation are available in Himpsl-Gutermann's (2012) doctoral thesis.

1 Background and problem statement

Digital portfolios are an instrument promising to unite many aspects of promoting life-long learning (McAllister, Hallam, & Harper, 2010). Despite being widely used in the Anglo-Saxon world since the 1990ies, the e-portfolio was only more generally received in Europe, and in particular in the German-speaking countries, through the 2003 campaign “ePortfolio for all” (Ravet, 2007). The e-portfolio represents the digital counterpart to a portfolio file, a form of presenting academic achievement which originated in reform-pedagogic approaches and was first mentioned in a pedagogical context in 1974 (Häcker, 2008, p. 28). Because of diverging pedagogical traditions, a transfer of e-portfolio concepts to universities in German-speaking countries should be approached carefully, considering specific conditions as well as current academic-didactic developments within the Bologna reform process (Baumgartner, Himpsl & Zauchner, 2009). This is especially important as, in spite of the noble pedagogical goal of improving the culture of assessing learning and performance, implementations risk being executed at the expense of students, as for example a meta-study by Ayala (2006) states. An important objection is that, although the e-portfolio is integrated into the curriculum, its didactic integration into teaching is neglected. Therefore, when the e-portfolio was implemented into an extra-occupational master course at the Danube University Krems, we particularly focused on its didactic integration into the blended learning concept of the degree course and on the creation of a favourable benefit-cost ratio for students.

2 Context of the case study and research method

The action research project, the e-portfolio implementation and the final case study are anchored in the academic course eEducation, an extra-occupational continued education course available at the Danube University Krems since 2007. Students are mostly working and study part-time, so they have more or less restricted resources for their studies. They deliberately chose a course of studies which deals with the possibilities of computer and internet technologies for learning and teaching, which means they usually work in a pedagogical field themselves (schools, universities, adult education, in-house continued training) and have an affinity to digital media. Here, previous technological knowledge is of less importance than a readiness to engage with digital media characterised by openness, curiosity and some scepticism. The profile of the target group directly influences the training offer, as “e-learning” is not only the subject of the course, but is also reflected in the methodology leading to a blended learning concept.

The e-portfolio concept I will outline below has been developed in several cycles during an action research project (cf. Coghlan & Brannick, 2010), the chronology overview of which I present in figure 1.

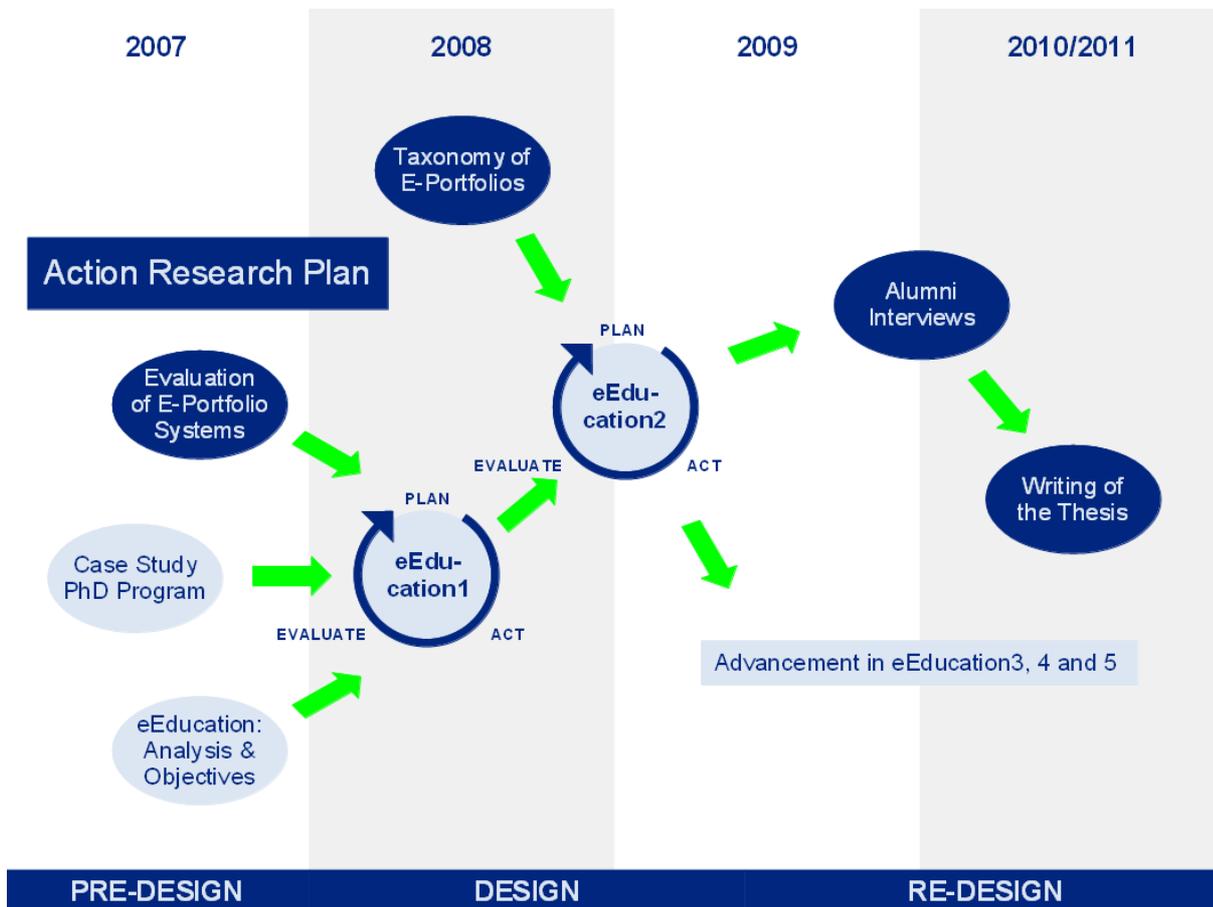


Fig. 1: Overview of the action research project on the e-portfolio implementation at the master course eEducation (Himpsl-Gutermann, 2012, p. 47)

After preparations in 2007 (cf. Baumgartner, 2008; Zwiauer & Kopp, 2008; Himpsl & Baumgartner, 2009), the implementation was planned in two main cycles:

1. *First Cycle*: In the first class, *eEducation1*, the e-portfolio was introduced within a single course on „advanced education technologies“ at the end of the second term. In the following courses, when writing their master theses and outside their studies, students were able to continue using the e-portfolio *on a voluntary basis*.
2. *Second Cycle*: Based on the positive evaluation of the first cycle, the e-portfolio was introduced as an obligatory element in the next class, *eEducation2*, from the start, and integrated into the blended learning mode in such a way that it was an *inherent part* of the virtual learning environment *in all modules* and embedded into individual lecturers' didactic scenarios.

For the evaluation of the project, I chose a combination of formative and summative approaches. While in formative evaluation, different individual methods were used, the final summative evaluation was based on interviews with students which were analysed with qualitative methodology. Following Grounded Theory methodology, sampling, data collection, encoding and analysis were conducted in a cyclical alternating procedure (Przyborski & Wohlrab-Sahr, 2008, p. 194). Within the action research project, the course director of eEducation had multiple roles as a course director, lecturer, examiner, interviewer and researcher. The interviews were held about one year after the students had finished their degree course in order to avoid a possible conflict of roles, but also to allow for a distanced view on e-portfolio use. This was directly confirmed in one interview (s3, paragraph 88).

3 Concept of the e-portfolio solution

For a better understanding of the final case study, this section gives an overview on the e-portfolio implementation – further details on the concept are available in Himpsl-Gutermann (2012).

3.1 Goal of the modular curriculum: Reflective Practitioners

The curriculum of the course eEducation has a modular structure, in which individual modules cover between three and six ECTS points. While the modules are self-contained units, they cannot be completed in an arbitrary order, but are coordinated with each other. Some modules refer to each other and some are

based on others. There is a common theme which runs through the modular organisation and which has several lines of development. The central theme of the course is teaching and learning with new media. As it is an extra-occupational further training, transfer of newly acquired knowledge to the students' own professional praxis is paramount. Students should have the possibility to use new knowledge and new competencies in their professional lives as directly as possible. Inversely, they are asked to contribute their practical expert knowledge to the course. This presupposes a certain readiness and openness to question and to reflect upon one's own knowledge which is based on tradition and experience in order to create a feedback between praxis and theory. This refers to the image of "reflective practitioners" according to Schön (1983), with the focus on "reflection on action" rather than "reflection in action", i.e. reflection after the act. The e-portfolio's aim is not least to promote an ability for reflection which is important in two respects: firstly regarding one's own ability to learn in the form of meta-cognitive skills, and secondly regarding one's knowledge gained from experience in a professional field which should be expanded, but also critically challenged and transformed if necessary (Mezirow, 1991).

3.2 The design of the virtual learning environment

One important line of development within our master course is the use of diverse education technologies. These are not only examined in content, but also tested – according to individually suitable application scenarios - across all modules. Different individual methods and software types like e.g. online mind mapping, social bookmarking or reference management software are integrated into the virtual learning environment of the course, which consists of three main pillars, the *triple M* (see figure 2).

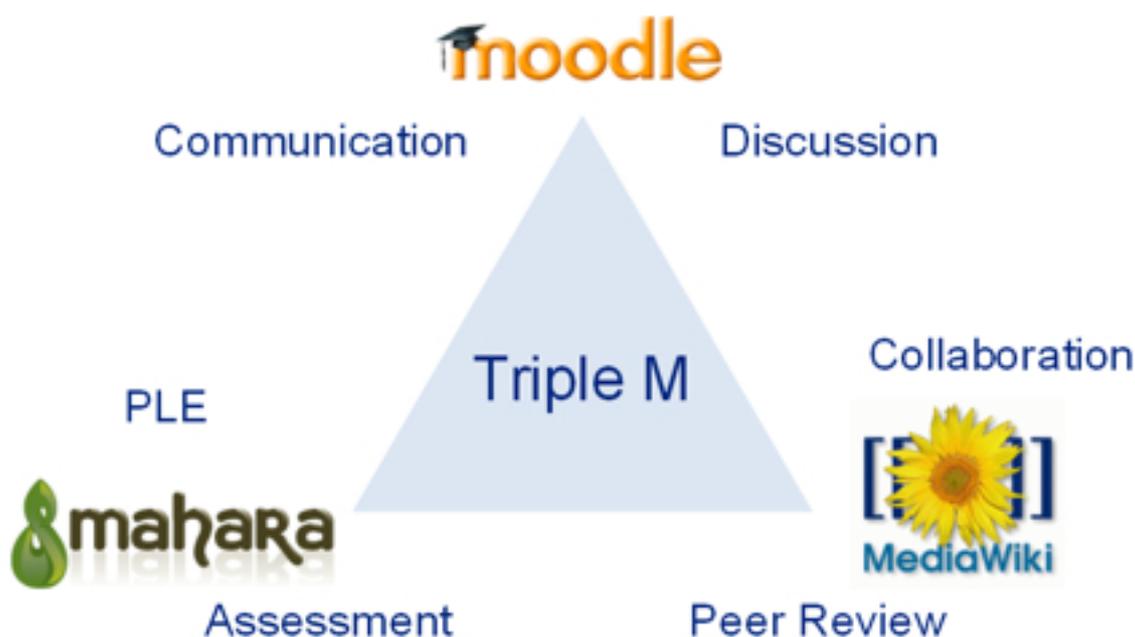


Fig. 2: Triple M – the virtual learning environment of the master course eEducation (Himpsl-Gutermann, 2012, p. 98)

The three pillars are formed by the LMS/LCMS Moodle, the e-portfolio software Mahara and the collaborative platform MediaWiki – this combination covers the functions of a portal solution which e.g. Kerres, Ojstersek, Preussler & Stratmann (2009) suggest. The “control centre” of the course is Moodle, which is used as an LMS¹⁵ by the course management and serves as an LCMS¹⁶ for individual lecturers who use it for their course design. Thus, Moodle is mainly a tool for course management and lecturers, which is indicated by the abbreviation “T” for “teacher” in the top corner of the triangle. The students interact with the course offer on the learning platform, though the type of learning activity may differ strongly in individual modules, according to the chosen didactic scenario. All modules, however, have a strong focus on communicating with and within the learning group, mainly a-synchronously in discussion forums. The second pillar, the e-portfolio software Mahara, is more learner-centred (abbreviation “L” for “learner”). Students document and reflect their personal learning activities in individual portfolio views on each module, and simultaneously present their learning results. Mahara may thus be seen first as an

¹⁵ LMS = Learning Management System (cf. Baumgartner, Häfele & Maier-Häfele, 2002)

¹⁶ LCMS = Learning Content Management System (cf. Baumgartner et al., 2002)

important mainstay of the personal learning environment (PLE), while those parts of the portfolio accessible to others are primarily used for assessment. Finally, the Wiki platform is used in some modules when direct collaborations within the group are planned (abbreviation “G” for “group”). In contrast to the e-portfolio, personal authorship has little relevance in the Wiki (Himpsl-Gutermann & Schnabl, 2012).

3.3 Didactic integration of the e-portfolio

Following the basic e-portfolio types according to Baumgartner et al. (2009), the e-portfolio has a threefold purpose:

1. *Learning portfolio*: It serves to acquire knowledge and competencies as well as for individual reflection on one’s learning progress in individual modules of the curriculum (more process-orientated).
2. *Assessment portfolio*: It serves the assessment of knowledge and competency acquirement in the modules, and thus as a replacement for examination requirements (more product-orientated).
3. *Presentation portfolio*: It serves to present one’s own products and competencies and can also be used outside the course (more product-orientated).

The modular design of the curriculum and the premise of its tight didactic integration already give rise to a basic decision for the e-portfolio: Because of the aim of using the e-portfolio as a learning and assessment portfolio, it is bound to follow the modular structure of the curriculum, which means that the students create sub-portfolios as part of individual modules which are submitted to an assessment by the examiners after the module is completed. Independent of the individually diverse detail design of the modules there is a prototypical concept for the didactic integration of the e-portfolio into the blended learning mode, which will be described below. Figure 3 sketches a typical sequence for a 3 ECTS module with one attendance day which takes place in the middle of the module period.

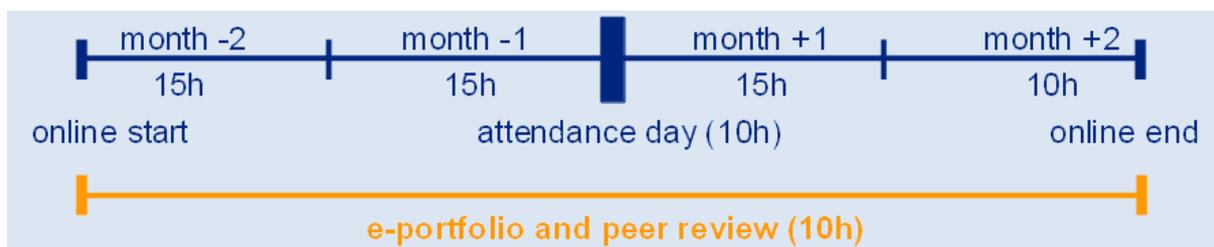


Fig. 3: Prototypical sequence of a module with 3 ECTS points (corresponds to about 75h learning time¹⁷)

The online phases before and after the attendance day are supervised via the learning platform Moodle. Here course material is made available, as well as the description of the module, which serves as a starting point for the portfolio work. In the first two months, previous knowledge is activated and the attendance day is prepared, e.g. with literature research (15h) and an online forum discussion (15h). On the attendance day itself (10h), lectures, discussions and exercises in teamwork ensure a diversity of methods. In the final phase, the focus lies on application, advanced studies and the transfer of newly acquired knowledge, e.g. in an online teamwork in the Wiki (15h) and an individual paper (10h). The portfolio design is organised by the students themselves and created alongside the moderated module activities. After finishing the last learning activity – in this case after finishing the term paper – there is a first deadline for the portfolio view. After this, there is a peer review loop along three meta-categories (Himpsl, 2010) before the portfolio view is finally submitted for assessment. The students administer the access of others to their portfolio view themselves – they are encouraged to enable access as soon as possible during the process of development in order to guarantee mutual support.

3.4 Introduction to e-portfolio use

The students’ introduction to e-portfolio use stands at the start of the master course, where the complete triple M learning environment is presented successively. This introduction into methodology and software handling is integrated into the starter module on education technologies covering 6 ECTS points. During this module, the students are closely supported by their tutor and receive intermediate feedback at different points in order to avoid insecurities in the first portfolio design of the course as much as possible. In this process, an “assessment for learning” stands on a par with an “assessment of learning” (Biggs, 2003). A criteria-orientated feedback pointing out potential for improvement paves the way for the future use of the e-portfolio in the following modules. Finally, the e-portfolio serves as an accompanying collection of

¹⁷ In Austria, 1 ECTS point is calculated with about 25 learning hours.

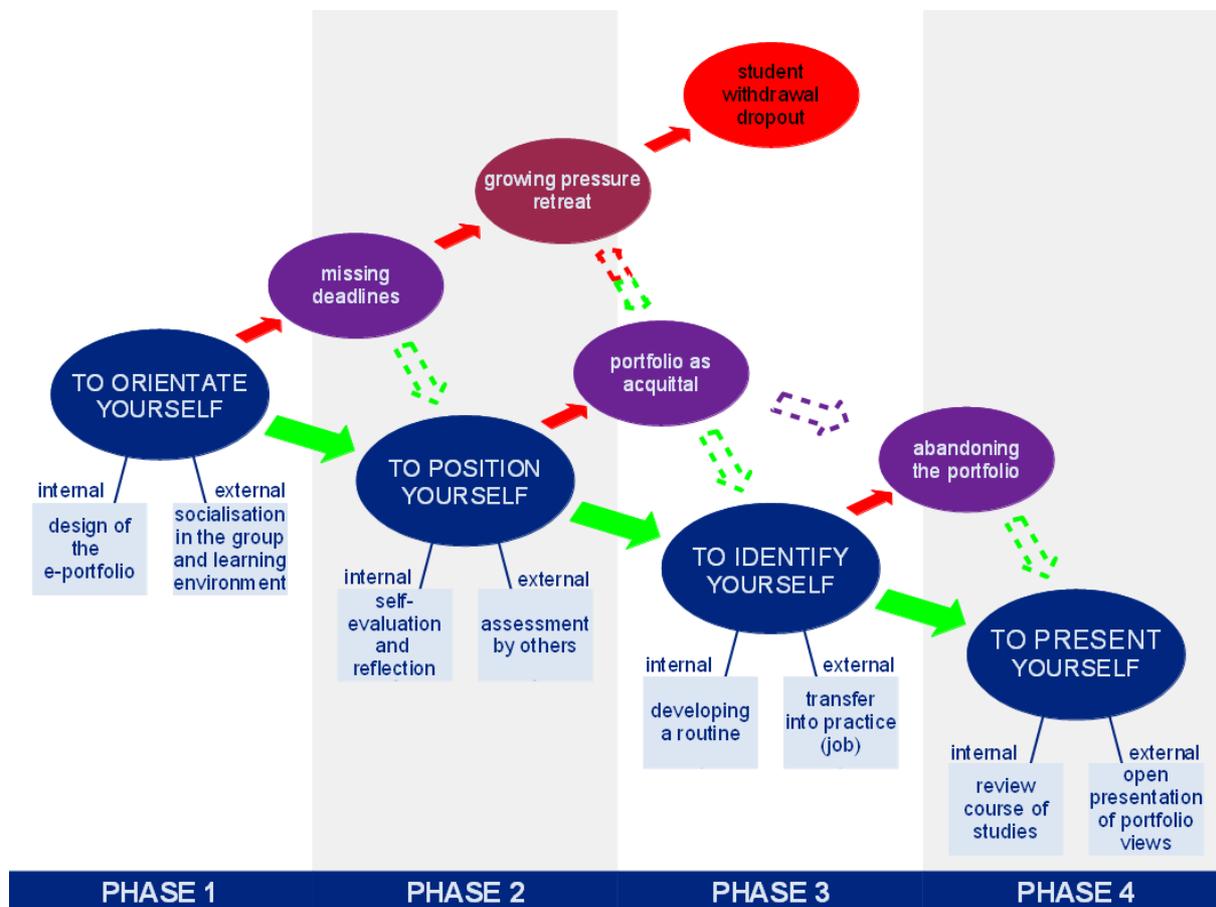
resources, as a pool of ideas and as a research diary alongside the master thesis, which is also used for communicating with the supervising tutor.

4 The 4-phase model of portfolio use

An analysis of the alumni interviews quickly showed that change is a central category for the e-portfolio in the master course eEducation. The e-portfolio was important for the students during their studies, and continues to have some importance for the alumni afterwards. However, over the course of time, there are remarkable changes: changes in the use of the portfolio itself, changes relating to what is seen as important, changes in the attitudes towards the portfolio. An in-depth analysis based on Grounded Theory methodology resulted in four key categories which also form the headlines of four consecutive phases:

1. Orientate yourself
2. Position yourself
3. Identify yourself
4. Present yourself

On these key categories, the interview data yielded main codes, which express what was most important for the students in the respective phase. These codes show a universal pattern: They can be classified by two dimensions stressing the internal perspective (self-reference) and the external perspective (environmental reference) of students respectively, which is expressed at the same time in or by the e-portfolio. Self-reference is reflected in each phase headline by the word “yourself” – while each verb only makes sense when there is a counterpart. While reflection in the e-portfolio centres on one’s own learning, the students do not revolve around themselves, but keep looking outwards¹⁸. This not only shows one of the characteristics of the portfolio, but also what the “process of education” is about: the search for, and forging and formation of identity. This 4-phase sequence shows what Lenz (2011, p. 147) calls “to transform yourself by learning”. In an e-portfolio in academic continued education, “digital identity” and “career identity” merge into each other: The e-portfolio can become the expression of one’s digital professional identity. Figure 4 shows the 4-phase model for e-portfolio use in the master course eEducation, which inductively arose from interview data.



¹⁸ Looking outwards avoids the danger of „over-reflecting“, as termed by Reinmann & Sippel (2011, p. 193).

Fig. 4: An overview of the 4-phase sequence of e-portfolio use in eEducation, ideal-typical sequence and deviations (Himpsl-Gutermann, 2012, p. 130)

The chart illustrates the ideal-typical sequence along the green arrows as well as possible deviations from it in critical phases of portfolio work – in its description I will first follow the ideal-typical sequence.

At the start of the master course, the main challenge is to orientate yourself, to get to know the team and to find one's way around the learning environment (external perspective). Thus, important socialisation processes take place in this phase. The attitude towards the e-portfolio in the starting phase is rather sceptical, mostly because of anxieties relating to the expected workload. In portfolio work, basic questions of portfolio design and software operation are central (internal perspective). When these are solved, a critical examination of the portfolio concept may take place during the transition to phase 2. Here, one by one known portfolio dilemmas come to the fore: How do I handle reflection (self-reference), especially when my portfolio will be graded for my studies as a test performance (environmental reference)? The following excerpt from an interview clearly expresses pertinent thoughts and conclusions in a rather tactical course of action:

"[...] as soon as you know in such a case that you will publish this at some point, then there is, let's say, self-critical thinking is restrained, of course, because you don't say this is simply my diary that no-one will see, where I am writing things down for myself. It's not that, you would have to somehow separate that, you would have to say, ok, I can do one part for myself, reflecting for myself alone, but I don't really want to show this to the public, right. This is, I see some tension there [...] So probably I have, let's say, I tended to write for a reader, not really for myself. That's, well, looking back honestly right now, this is like a rather automatic and unconscious process, that you tell yourself, ok, this is going to be looked at, graded, so you will write what somehow, well, will give a good impression on the whole. And everything else, well, I can think about that for myself. So, well, it does have this tendency, doesn't it." (s1, para. 68-70)

What exactly are the criteria for assessment, how much creative freedom is possible? What are the rules for the peer review? In phase 2, positioning yourself is necessary, one the one hand towards the portfolio itself (self-reference), and on the other hand towards the learning group and the authority (environmental reference). At the same time, this is the most critical phase within the whole portfolio process, which has a decisive influence on whether the learner succeeds in identifying him-/herself with his/her portfolio and the method during the transition to phase 3:

"And over and above this, there is this additional investment and the creation of a suitable portfolio. At least it seems to be an additional investment at first. And possibly many will only see when looking back that this investment actually pays or has paid. I don't know whether this is always the case from the start. I was rather sceptical at the beginning. Or rather, I didn't know this method e-portfolio at all, and it took some time until I was actually able to identify with it, and before I really used it, actually used it with more and more pleasure." (s3, para. 48)

Besides an expert handling of one's own portfolio and the realisation of the possible value of the e-portfolio for one's life (internal perspective), this shows mainly in a transfer into one's professional practice (external presentation). The students achieve a change of perspective towards the authority, develop their own ideas for using the e-portfolio and implement these step by step. This third phase also seems to be critically decisive for whether the e-portfolio continues to be used after the end of the course.

After finishing their studies, students mainly use the portfolio to *present themselves*, in two senses: in order to present themselves to others via the portfolio (external presentation) and to present the portfolio to themselves, in order to draw new motivation from their achievements (internal perspective). Besides this, the portfolio is valued as a personal learning archive, and time and again alumni resort to parts of it. The e-portfolio is actively continued when there is a concrete occasion in new learning communities.

The sketched sequence is ideal-typical – along the red arrows in the chart, the critical sequence of portfolio work can also be followed. When problems arise during the course of studies, these quickly become apparent insofar as (group) access to portfolio views is delayed and *deadlines are missed*. Missing portfolios have to be submitted later – when students succeed to do this quickly, a return to the "road to success" is possible. When shortfalls accumulate, *pressure* on the students *mounts* because work for new modules is due as well. The workload rises. At the same time, concerned students often *retreat*, from the learning group as well as the course management. When modules to be made up get out of hand, the continued high workload can lead to overburdening and an inability to cope. In some cases, extreme commitment succeeds in a return to the planned course sequence, but in most cases, the only option is to *interrupt the course* for some time, or to *drop out* completely. In eEducation, this rarely happens at the beginning right after the orientation phase, after only a few months. My observations seem to suggest that phase 2 is more critical. When the student does not succeed in positioning him-/herself towards the

portfolio appropriately, i.e. to find his/her own method of self-reflection and at the same time to cope with outside assessment, there is a danger that the portfolio becomes a simple *acquittal*. In the views, this becomes apparent in several aspects: The choice of artefacts is restricted to the mere minimum requirement, reflections refer more to the teaching context than to one's own learning process, and instead of creative design, the views become more and more alike. In this case the probability of a transfer of the portfolio method into the student's own professional practice is low, and *portfolio use* usually ends with the last obligatory module that has to be completed for the master course.

5 Summary and perspectives

The case study has shown that e-portfolio use by students can be described in its ideal-typical sequence *in four phases*: to orientate yourself, to position yourself, to identify yourself, to present yourself. The four phases may be structured in two *dimensions*, which respectively stress the *internal perspective (self-reference)* or the *external perspective (environmental reference)* of the learners, which are simultaneously expressed by or in the e-portfolio. The most critical phase in e-portfolio use seems to be the transition between phase 2 and phase 3: When we succeed in convincing students of the benefits of the e-portfolio in an intense and critical examination of the e-portfolio method, their identification with the e-portfolio will last beyond the course of studies. It is clear that, because of the study's context and its limitation to "one case" with a limited sample, the 4-phase model of e-portfolio use is to be understood as a first suggestion, which we hope will inspire further studies with a longer-term perspective in different contexts in order to question the central categories of the model and to allow for conclusions about problems and critical factors in the successful implementation of integrative e-portfolios.

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Note:

Sections from interviews with students of eEducation were quoted with s1 to s7 – bibliographical data as well as interview transcripts (in German) and codes are available in Himplsl-Gutermann's (2012) dissertation. The quoted sections were translated freely, with the aim to convey the impression of the spoken word as well as the content.

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An Integrated ePortfolio Plan for a Large Research University

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ABSTRACT

An integrated ePortfolio tool being designed and developed at Brigham Young University (BYU) will greatly facilitate assessment of student learning as well as our university objectives. BYU serves over 30,000 students across 12 colleges and over 50 departments offering over 400 degree-granting programs. Key components of the developing plan include:

- All applicants to BYU will be required to submit a portfolio of their best academic work, leadership, achievements and life goals. They may choose to begin a university-hosted ePortfolio years before their application date. University departments looking for gifted/talented applicants in their discipline can search portfolios at any time (with the applicant's permission). The ePortfolio tool will also facilitate applicants' ability to contact each other, blog, socialize, share insights/advice, and view each other's ePortfolio materials.
- After applicants are admitted, some university core and general education courses and majors will require the use of the ePortfolio as a portal for submitting peer-reviewed work, displaying assignments and developing a resume. The ePortfolio will also allow each artifact to be tagged and be viewable by different groups – friends, family, instructors, classmates, others within their major (at BYU and elsewhere), potential employers, or no one. Visitors may leave comments or reviews of items, but the student has ownership and the option to delete.
- The ePortfolio is integrated, sharing data via web services with the university admissions data base and the university learning management system (*BYU Learning Suite*). The BYU ePortfolio will be one of nine tabbed components in the *BYU Learning Suite* that also include: *Home, Content, Exams, Syllabus, Digital Dialog, Grades, and Schedule*. Data entered *once* in any component of the suite can be shared as needed with other components. Storing draft papers, getting peer reviews, revising and submitting assignments can be done from this tool.
- Students will be asked to record reflections on their own learning and development. Some university courses already require a "learning journal." The ePortfolio tool will facilitate such journals and blogs and allow students to determine viewership of each entry or thread. These student reflections, combined with a multi-year sequence of learning artifacts and standardized test scores, may be the *best direct evidence of learning*. These data would be of vital importance for external assessors, faculty, parents, administration, and the students themselves concerning what they have learned and where and how they learned it. We anticipate that a good sampling of students would choose to share these reflections with some of these stakeholders. These student reflections would make valuable supplements to program exit interviews.
- Although the ePortfolio is primarily intended as a student-centric, student-controlled tool, the artifacts and learning reflections that students share with their programs and the university will be evaluated with the resulting data rolled-up to determine how well the university is accomplishing its mission-related objectives. This process will work best with carefully scored assignments (using well-designed rubrics) over a multi-year period in university core courses. Both the assessments and a sampling of artifacts will be stored by the university outside of the student portfolios. The *BYU Learning Suite* already has a highly-integrated *Learning Outcomes* website with published outcomes for every course and program. Storing assessments and artifacts from ePortfolios is the next logical step in our overall university assessment plan.
- Our ePortfolio plan currently calls for students to keep their portfolios and university-templated resumes for at least three years post-graduation. During that time, we will encourage graduates to move memory-intensive materials to storage elsewhere, but allow them to link the items back to a university-designed template (with the university seal), verifying their BYU affiliation. Longer-term sponsorship and hosting of their portfolios is being considered. Allowing graduates to have the ability to continue to add materials and reflections to their portfolios would help the university evaluate one of our stated core themes – "lifelong learning and service."

Although the plan outlined above is largely still in the planning and construction phase, it is underway. Some BYU departments and colleges on campus currently utilize ePortfolios in some of their assessments. The ideas above represent the good work of many people, including the *BYU Center for Teaching and Learning*, students, and faculty. The determination and funding to complete this plan may soon be realized.

Mahara in secondary school. The introduction of an ePortfolio to foster oral skills and socialization.

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Introduction

Adoption of educational ePortfolios in Italian schools is still not widespread, both for a lack of knowledge of the portfolio and for teachers' low trust on technology and applications that use the Internet. Many schools, moreover, suffer from outdated technology infrastructure, lack of updated computers and a reduced presence of the Internet connection only in laboratories rooms, but not in classrooms. Under these conditions, the adoption of the ePortfolio, an application that requires a systematic use of the network and a stable and performing connection, is difficult to sustain.

However, the features of the ePortfolios, in particular its use to promote active and reflective learning (Becta, 2007), are considered extremely interesting and useful. For this reason its gradual adoption by different types of school is often recommended by researchers.

In particular, in secondary schools, it seems important to focus on some features that ePortfolio construction highlights. As recalled by Zubizarreta (2006), the portfolio work covers three areas of activity: documentation, reflection, collaboration. Through the collection and revision of the artifacts powerful processes of knowledge construction are put in place and creation of meaning is empowered. The motivational power of ePortfolios is being promoted and enhanced thanks to collaboration and sharing, allowed by the "social" features inserted in it.. According to Millis, "Because portfolios get students into a rich and deep knowledge base focused on their own learning experiences, portfolios are highly motivating. Collaboration with others deepens these individual experiences by allowing probing questions, socially constructed knowledge, and alternative viewpoints. Such approaches often lead to significant critical thinking as part and parcel of the deep processing" (Millis, 2006, pp. XX, in Zubizarreta, 2006).

The present paper intends to present an experience carried out in a secondary school during the current school year, where the adoption of an open source ePortfolio system, Mahara, was proposed. The research aim was to promote the use of the instrument for the three year of duration of the course. At the end of the first year of testing, we plan to document the influence that this tool has had in the life of the class with respect to three main dimensions: (a) the attitude that students had with the disciplines, (b) the way students change their study methods within the portfolio, (c) the relationships and the climate inside the classroom.

To detect changes in the attitude of students in the discipline the research is based on observations made by researchers and teachers involved in the experiment, the working methods used were detected by analyzing the tracking of the activities within the platform, while to evaluate the relationships and perceptions of students and the classroom climate was used the Classroom Life Measure questionnaire (Johnson & Johnson, 1983, 1986) in its Italian version (Chiari, 2003).

The Classroom Life Measure was designed by Johnson and Johnson (1983) to assess students' perceptions of 16 aspects of classroom climate, such as cooperative learning, resource interdependence, competitive learning, teacher academic support, teacher personal support, peer academic support, peer personal support, fairness of grading, and so forth. The original questionnaire contains a total of 91 items on a 5-point Likert-type scale, ranging from strongly agree to disagree with a choice of neutral.

Of the 91 questionnaire items in the Classroom Life Measure, only 9 pertaining to peer support were used in this study: peer academic support (5 items), and peer personal support (4 items).

Items on peer academic support focused on students' perceptions of the extent to which their peers cared about how much they learned and wanted to help them learn. Questions on peer personal support were designed to explore students' perceptions of how much their classmates cared about and liked them as individuals. Sample questions included: "Other students in this class want me to come to class every day" and "Other students in this class care about my feelings".

Background and context

The research was conducted within a secondary school, in particular within the Institute Vincenzo Monti of Pollenza, Macerata (Italy). The group that took part in the experience consists of 58 subjects, belonging to

the three classes existing in the institute (classes I A, I B, I C). The 20 children attending the class 1 C, which did not use the ePortfolio, were used as a control group. The three groups can be considered comparable because the kids included in the study belong to the same social context, they share many teachers and follow the same curriculum. The classes also had a similar level of problematic situations, due to the presence of some pupils with learning difficulties and to the presence of foreign students. All students attend the first year of secondary school. The choice to work with children of this age was not casual. In the previous school year, in fact, within the same institution, was conducted a similar research, during the last grade of primary school. Among the students involved in the research of this school year, therefore, there are also some individuals who had already used the ePortfolio last year.

The two classes we interacted with, have a sufficient computer literacy. The intervention of researchers at the school was carried out both in ordinary classrooms, thanks to the use of the laptop of the same researchers, both in the computer lab, for a total of about 20 hours. The interventions were intended to present the tool to the class and to introduce the use of Mahara, to provide a support for any technical problems, to monitor the progress of the situation. The construction of their ePortfolio by students, in fact, did not happened at school, but it was made mainly outside school hours, at home, individually.

The structure of the experience

The research was conducted during the school year 2011/2012, from October until May. Before starting to interact with students, the researchers conducted several illustrative meetings in order to present the main characteristics of the project, first of all with the School Director and later on with the teachers of the college professors who could take part in the trial. During this initial phase emerged the first problems. Among all the teachers in the school, in fact, just two of them accepted to join the project. The biggest doubts among the others, who chose not to participate, are related to the fear associated with the use of a new technology and to the introduction of a new tool that could generate a different way of approaching their own disciplines. Finally, the researchers could rely on the support of just two teachers, for the disciplines of history, geography and religion. Consequently, the amount of time to exploit directly into the school environment was reduced, due to the limited time provided by the two teachers, that, of course, were already worried about all the works to be carried out in the classroom.

The research was conducted by following several steps:

1. Introducing ePortfolio

During the first meeting that researchers organized with the boys, that took place in mid-October, they present the main characteristics of the project, trying to identify all together its meaning. Therefore, they discussed collectively about the nature of ePortfolio in general, what it is and what it does, and about some particular aspects linked to the use of a specific ePortfolio, built through Mahara. The presentation took place in the computer lab, in a period of about thirty minutes per class, between a lesson and the next. Despite the limited time available, some interesting issues emerged, related, primarily, to the ingenuous knowledge that the boys had about portfolio. They answered to the question "What is a portfolio?" in different ways. These are the most interesting comments: "It is a piece of paper where we can write our name, our sport, our hobbies"; "It is it is a collection of our work". They answered to the question " Why can we use a portfolio?" in different ways. This is the most interesting comment: "We can use it in order to show Mom how good I am!". They answered to the question "Why could we collect our worst works?" in different ways. This is the most interesting comment: "We can do it in order to understand what we did wrong and what we need to improve!". From these interventions, it is possible to infer that, despite the use of the portfolio in the Italian context is not yet a standard practice, the students seem to have different correct interpretations about the meaning of its use.

Talking about the more technological aspects of the project, we can notice that the teacher was worried about the fact that the boys did not know how to use the computer and that they are not able to independently manage the situation because of the difficulties linked to the informatics aspects that the ePortfolio would involve. Analyzing the responses of some of them, we can say that the doubt of the teacher is not entirely justified. For example, they individually found the solution to this problem: "How can I do in order to get in my computer an hand-written work?". Same guys suggested several solutions ("We can use a camera, a web cam, a scanner, we can copy the work through the computer). In general, all the boys said that they know how to use computers and that they own at home a personal computer connected to the Net, even though some of them claimed that they need to get permission from their parents for navigation. Within a few days, with a very long time and in a non-homogeneous way, the boys started to open and customize their own profiles, giving themselves a nickname, establishing friendships and building groups.

2. Uploading the first materials

One week later, the researchers used an hour of time in the computer lab to illustrate concretely how to put files in Mahara. To facilitate this task, we created a specific tutorial, that was uploaded on the platform in order to be examined by students. At this point, it was proposed the first task to be performed independently by the boys: they had to choose materials from those produced at school and they had to put them in Mahara. The delivery was found to be too generic and it was perceived by students as "not mandatory", with the result of having only a few materials placed after two weeks. Together with the teacher, the researchers decided to direct students toward a different kind of work, providing a more detailed request. So they asked the students to put in their ePortfolio, as a first document, a search conducted some time before on greenhouse effect. Many of them had developed it in the wrong way, so they were forced to do it again. This task was performed by all students, although some of them have reported difficulties with the scanning of documents and their traceability to the computer, while they found no particular problems related to the upload of the materials into the platform. In the opinion of researchers, however, the problems they have found are not linked to technological factors. In particular, researchers noted a general lack of autonomy among students, that were not able to manage individually an open task.

3. The stimulation of "competition notices"

During the month of January, to encourage a more assiduous participation in the project, the researchers opted for a new mode of approach. Considering that one of the problems was the lack of autonomy we noticed among students, we organized some competition notices, proposing students to choose and upload a series of works, the type of which was suggested by the researchers and by their teacher. At the end of the competition the winners would be published. In this way we could stimulate a motivational factor. In order to choose the winners the researchers followed some guidelines: they would appreciate coherence related to the task, originality, personalization and respect of deadlines. The competitions organized were three, distributed over three months.

First contest: guided work linked to a particular argument of study.

The first contest was launched in January. Students were asked to choose one of the works carried out in relation to the last topic discussed in history (the fall of the Roman Empire). The choice has to be motivated by filling out the description field.

Second contest: guided work linked to a tool for studying.

The second contest was announced in February. Students were asked to choose a map prepared by themselves. They have also to specify the motivation of that choice and also their perception about the usefulness of the instrument of maps.

Third contest: a more individual work.

The third contest was launched in March. Students were asked to choose a work of history and a work of geography among those developed from the beginning of the year, specifying the reasons of the choice in the description field.

4. Realizing the first views.

Considering that thanks to the creation of competitions in the phase described above, students had begun to interact closely with Mahara, researchers have proposed the construction of the first views. As usual, before to propose a new task, researchers organized a new meeting in the computer lab, which lasts about an hour, in order to illustrate the technical steps necessary to do so. Specific objective of the task in question was to prepare some views that should have as central theme the topics covered during the year in the course of activities carried out in the disciplines of history and geography.

5. Discussing the first views.

After reading the first view made by students, the teacher involved in the project proposed to use Mahara as a tool to enhance traditional methods of assessment, based on the oral exposure of the lesson studied. So, over 4 hours, spread over 2 weeks, we organized some class discussions that were aimed to show to the rest of the group the work done by each student and placed in the portfolio as a view. For each match has been made an audio recording for later analysis.

6. The submission of the questionnaire

During the develop of the research we have noted some interesting aspects of the path that we were monitoring. First of all, the ePortfolio was used by children as an instrument of social contact, exchanging various information and communicating in new ways with their teachers. So, we decided, at the end of the

experience, to analyze whether this kind of work and this new type of on line relationship with the classmates could change the quality of the social environment in the class. For this reason, we proposed to detect the perception of the students about the social aspects in the class. This questionnaire was completed both by students in the two experimental groups, and by the students of the control group, that did not use the ePortfolio.

Findings and results

Talking about the three variables of the research described above (the attitude that students had in relation of the single discipline, the way of studying and working performed within the ePortfolio, the relationships that have been created inside the classroom and the dynamics that have changed the climate of the class) we used different methods.

Regarding the first variable, the attitude of students towards subjects, we collected many data from the observations of researchers and from two semi-structured interviews with the class teacher. Through the analysis of the discussions made thanks to the view produced, we can notice the persistence of a vision of the discipline as a body of "atomic" knowledge. Each topic is perceived as a unity of meaning and it is studied as a whole, without enlarging the vision to a wider context. The possibility to use multimedia contents for the construction of views has certainly allowed a deeper exploration of concepts and the growth of motivation in carrying out assigned works: even the students with learning difficulties have produced works rich in terms of multimedia and they have enriched the text portion with audio and video materials, sometimes original and made directly by the student, other times downloaded from the Internet. The richness of the works produced has become, in some cases, a valuable resource for the retention, especially for individuals who had specific difficulties in this area. Despite this positive aspects, it does not seem to be reached the target we had set at the beginning of the experience: to gain a better understanding of the complexity of the general framework of the discipline.

For the second dimension analysed, the way of studying and working performed during the school year, we collected some quantitative data related to tracking, which showed how the features mainly used by the classes were those related to social and relational issues of Mahara.

During the year, 137 groups have been created and 465 views have been developed. On average, each user has had about 20 friend requests that were answered positively, he/she has built about 5 views, he/she has joined more than 11 groups (but there are users who are members of 68 groups).

These data show that students appreciates much the social aspects of the tool, using it as a social networking environment, to exchange messages and materials within the group of friends, leaving in second order the scholastic focus on the contents and learning paths.

Despite the disparity between the amount of messages of social support than cognitive support, we can notice different comments related to the view created that can be considered as a sign of the fact that the interest and the ability to use the tool is moving, at the end of the year, to more mature forms of discussion and consultation.

It is not uncommon to find messages of feedback on the work of others like these ones: "In my opinion, you could engage a little bit more", "In my opinion, you had to put some photos or a video", "You made it by yourself? If yes you are very good! ". These comments show that the activity within the ePortfolio was not confined to the construction of artifacts and to the reflection on their materials, but that much space was occupied by the reading of the work of others and by consulting each other to improve the quality of products and of learning.

Another important element is the care with which each student has prepared its own profile and put the message presentation. Besides the establishment of the text fields, in fact, the boys have done a lot of attention to the appearance of pages, the colors, the pictures chosen, using the profile space to pass on to classmates and teachers a clear image of himself/herself focused on those who were perceived as key elements for his/her identity. Even in the choice of nicknames we can underline a certain taste for the fantastic and for the presence of an identifying element.

Regarding the third area of investigation, the change in classroom climate, it was used the CLM questionnaire described above.

Cronbach's alpha reliability coefficient for the Classroom Life Measure was calculated to determine the reliability of this questionnaire. To analyze the data, the T- Test has been used.

With regard to reliability, for the Classroom Life Measure, Cronbach's alpha reliability coefficient for the two subscales related to personal support and academic support was .81 and .71. These coefficients suggested that the two sub scales of the Classroom Life Measure were reliable measures.

The results regarding the perception of personal social support received from colleagues showed significant differences.

In particular, the classes that have used Mahara (M = 3.37 ES = 0.30, M = 3.16 ES = 0.49) showed a greater perception of being supported personally by friends compared to the control class (M = 2, 46 ES = 0.30), while there were also differences regarding gender and the interaction between gender and use of ePortfolio.

Groups	Media	Sd	
ePortfolio I A	3.37	0.30	
ePortfolio I B	3.16	0.49	
No ePortfolio I C	2.46	0.30	

From this data it can be concluded that there is a difference not far from the statistical significance between the group who used ePortfolio and the other one (T = 0.64)

These data are further confirmed through empirical observations and messages posted by the students on their wall and in views' comments.

During the research, in fact, boys and girls have used Mahara as a powerful new communication tool, both between peers and between students and teacher. Also the teacher would like to emphasize this situation, telling us how she used the ePortfolio as a kind of alternative repository of information, different from the traditional ones. Students, for example, contacted her using the messaging system or writing in her personal wall in order to know the tasks or works that they were supposed to prepare. In particular, this aspect of communication of ePortfolio emerged during the month of February, when the school was closed for several days because of heavy snowfalls that have hit the area where the school is located. In this case, Mahara was perceived as the only way to keep in touch despite the physical distance that prevented both students and the teacher to interact directly.

Another consideration on the social impact of the use of Mahara in the classes concerns the way the students have showed to be able to support each another. In fact, they told that they helped each other, creating working groups in the afternoon. In this way they managed to overcome easily some technical problems that prevented them to use the instrument. From the technical point of view, therefore, there was a deep collaboration between the kids, who continued to work individually with respect to the choice of content to be explored in their view or to the selection of materials to be included in their respective folders. That fact has remained unchanged throughout the course of the research, even when the tasks that students had to carry out was introduced in a predominantly competitive context.

Conclusions and recommendations

At the end of the project, researchers and teachers who participated in the research discussed the quality of the experience made. In relation to the objectives the study was designed for, it was found that some points have been reached, while others do not yet.

The most evident results are those related to the classroom climate and socialization: the questionnaire, shows a significant difference in the perception of social and academic support perceived by students. In conclusion, therefore, we can say that the kids, as well as the teacher, were attracted by the communicative and social aspects of Mahara, and the use of the tool produced an improvement in the classroom climate. Probably, this circumstance is due in part to the fact that Mahara has a very friendly look and feel and its structure is similar to that of many social networks.

Unfortunately, we cannot compare the final measure with an initial base line test, so our comparison is only related to the final situation of the two different groups of students at the end of the course.

Talking about the attitude towards the subjects and the motivation of students, we could notice only modest improvements, especially related to their way of work and study. Researchers, however, believe that these changes are just began, so now we can't consider them very significant. We can think about some explanations for this situation. First of all, the fact that not all the teachers participated to the project. The experience, in fact, was limited only to two discipline, and this could be considered as an obstacle. This disciplinary division, moreover, is clearly present in the Italian secondary school, where materials are discussed and studied separately, with only occasional points of contact. In second place, the introduction

of ePortfolio occurred in a school environment that offers a well-defined study approach, based mainly on instructivist patterns. In such a situation, the instrument itself has found difficulties as a promoter of significant changes. Very positive, finally, the growth of the teacher involved, who seems much more aware and willing to use the tool for the future. Initially dubious, in fact, at the end of the path she has admitted that during the first weeks of work she found all the project a little bit difficult, but she also stated at the end that she finally managed to understand the meaning of the entire project. These are just some of her words about the usefulness of ePortfolio: "Utility? Yes it has ... select the materials, write why you selected them. The students make a general discourse, but choose what is important to them". Thanks to the collection of all the work cataloged is more evident the overall project, both for the teacher and for the students. The teacher has added to these observations that she retains that such an experience could be useful to give students an appropriate education about new media and about the Internet.

The implementation of an ePortfolio in secondary school suffers from organizational and logistical difficulties associated with the complexity of the organization of this kind of school. It seems crucial to focus on organizational factor (time and space) for a process of sustainability in higher levels of school. However, copying with the difficulties, teachers and students involved in the experience gain a better awareness of their learning journey, and experienced a tool for critical reflection and for peer feedback that lead them to reach a better relationship among peers and to improve the classroom climate.

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Learning from the Open: Web 3.0 ePortfolios

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The uses of eportfolios at institutions of higher education are proliferating. In the United States, 40% of campuses are now utilizing eportfolios (Rhodes, 2011). Participation in eportfolio learning enhances unique student engagement, critical reflection and analysis, and collaborative teaching-learning environments (Cambridge, 2010; Cambridge et al., 2009; Rhodes, 2011; Light et al., 2011, Stefanakis, 2011). Participation in eportfolios fosters communities of learning and of practice, extending classroom learning into the community and through both formal and informal pathways (Barrett, 2011; Batson, 2002; Cambridge, 2010; Cambridge et al., 2009, Oliver et al., 2009). From university system-wide implementation to individually owned sites built from publicly available web tools and platforms, ePortfolios are changing learning and assessment processes and structures in educational institutions.

Eportfolios cannot be defined either as product or process, or even as both – but rather as an integrative approach that harnesses the learner as co-creator in knowledge generation, in what Jenkins (2009) refers to as “distributed cognition” or “the ability to interact meaningfully with tools that expand mental capacities” (37). This new media literacy, or “collective intelligence” (Jenkins, 2009) fosters the ability to pool knowledge and compare notes with others toward a common goal or, in other words, makes 21st century learning visible. Eportfolios which incorporate social media capitalize on the social networking behaviors of entering students, and in support and enhancement of curricular and co-curricular meaning-making, and multi-modal communication and interaction (Oliver et al., 2009). Increasingly, eportfolio initiatives have used the tools of the open and social web to allow students and faculty to shape their own approaches and multiple interpretations to the eportfolios for visible, shared, socially constructed learning.

This paper profiles two such approaches, from two disparate US institutions of higher education (a large public research institution and a small honors college within a large urban university system).

The University of Oregon, the first of these institutions, is part of a larger network of professional schools engaged in developing eportfolio learning processes, and a member of the fifth cohort of the Inter/National Coalition of Electronic Portfolio Research (I/NCEPR). What began as a small showcase eportfolio initiative in the Arts and Administration Program in order to connect professional practice and information management, grew to an interdisciplinary learning eportfolio initiative in three professional programs (Architecture, Business, and Arts and Administration).

The vision of the AAD ePortfolio system is a comprehensive learning system that serves as a hub for the generation of dynamic learning communities among faculty, students and professionals, and centers the integration of demonstrations of excellence in academic objectives, participatory learning and professional development through digital communications.

All entering AAD graduate students are required to create learning eportfolios in a customized WordPress blogging platform. Students are provided with eportfolio templates in WordPress, which they then modify and update as they progress through the program, and which become increasingly reflective of their personal learning journey. Students post their overall learning objectives and two-year academic plan, and for each class they post learning objectives that connect the course to their larger academic and career goals. Throughout the term students post artifacts and reflections that provide a narrative and evidence for their learning and how it connects with their overall learning objectives. Eportfolios also assist students in connecting with potential internship sites and with future employers, and serve as a repository for research and work conducted during the course of their academic careers.

As an eportfolio system in a blogging environment, students have the ability to aggregate multiple web 2.0/3.0 tools that enhance their learning experience. The design of the system allows for a robust aggregation of faculty and student use, and includes instructional blogs, project blogs, and a hub that provides a point of entry to course information, faculty and student information, tutorials and eportfolio guidance. Through aggregating learning eportfolios, program resource blogs, instructional blogs, faculty and student professional portfolios in a hub or “digital commons,” a community of practice is generated that supports multi-modal learning and application of communication technologies in a distributed cognition approach.

Emergent findings from our eportfolio initiative demonstrate that participation in eportfolios leads to student-centered learning and pedagogical change, while applying real world technology to the ways that student and faculty engage in learning (Bramhall et. al., 2011).

Students self-report that the value of participating in eportfolio learning in an open blogging platform includes: sharing and viewing each other's work; aggregating and archiving their own work leading to greater self-reporting of growth over time; and that the unique value of the public and visible nature of system provided unique opportunities for peer to peer learning and self-efficacy.

The ways that faculty are embedding eportfolios in their courses are hugely varied. Faculty may aggregate all their courses and instructional materials on a single instructional blog, or create a different one for each class. Participating faculty also include in their instructional blogs external resources, such as websites and web resources, diigo groups, and other web 3.0 tools – modeling the application of web 3.0 learning tools and strategies.

As part of a learning community, students are helping to guide their own educational growth and development. Because of the visible nature of the platform, students have the option to designate themselves what work they will make fully public, which has increased the peer to peer engagement. Students are able to view each other's work in the same class, and across classes. Faculty can designate that the instructional blog be viewable by just the students in the course, by all users in the system, or completely publicly available. Students and faculty maintain the greatest degree of control over visibility. So, the choice of what to make visible, or private, becomes an intentional choice with implications that become opportunities for discussion and analysis.

Students use their eportfolios in vastly different ways depending on their career and degree emphasis, which the system and the project allows and encourages. Some students focus on the extension of their professional networks, utilizing the blog feature to publish their work in the public domain. As a result, several students have been invited to be professional and guest bloggers with international associations and organizations; increasingly students are being invited to participate in a growing number of professional networks. Implications for lifelong learning are also suggested in such student self-reporting as perception of the value of engaging in learning eportfolios in a WordPress environment: importance of its use as a marketing tool and branding, personal expression, information collection, communication and distribution of work, and for job advancement. Said one student "I blog for other organizations already, and the entries can serve as writing samples for potential jobs. I use a variety of social media for research and making professional connections."

At Macaulay Honors College of the City University of New York, the eportfolio initiative (<http://macaulay.cuny.edu/eportfolios> begun in 2008 and now including over 2,400 sites) has been designed from the start as a student-driven initiative, with the broadest possible range of decisions about content, function and design left to students' discretion. Eportfolios are not required, and specific templates are primarily presented as options for students to choose from (with "other" always included as an intentional option). Eportfolios, like at the University of Oregon, take a wide range of forms and serve a wide range of purposes. In addition to professional/career oriented eportfolios and class eportfolios, students have created eportfolios including sites documenting their travel and study abroad experiences, science and health research, cultural and artistic explorations and honors theses or capstone projects. The variety and strength of the student eportfolios is evident in the collections of awardees in the two (to date) annual Eportfolio Expos Macaulay has held (<http://tinyurl.com/74gqzu9/> and <http://tinyurl.com/6vx5tt>)

As the Macaulay eportfolio community has grown and developed, we have also been able to incorporate the BuddyPress suite of social networking plugins in the basic WordPress multi-site framework. BuddyPress allows our students to connect with other students across campuses, classes, and years, sharing interests and intellectual pursuits. BuddyPress gives each student a profile, and linked to her profile, a list of every eportfolio for which she is a creator or one of a group of authors. Classwork, personal reflections, comments and responses all appear in the overall activity stream. In this way, the social and sharing functions, the co-authoring and interactive responses that students expect from their experiences with non-academic communities are foregrounded and valued in our academic community.

Beyond this Macaulay-specific social networking layer, the Macaulay eportfolio community also presents students with a variety of plug-ins to provide simple links to their lives and communities outside of school. Flickr photo galleries and YouTube videos are embedded into eportfolio posts, and eportfolios can include Facebook "like" buttons, as well as links to share eportfolio items on diigo, twitter, and other social networking applications.

As students have shared more of their work online with their informal social circles, with professional circles, and with academic evaluators and peers, we have seen an increase in collaboration, engagement, and serious critical attention to their work as students and as developing individuals. Since there is no formal evaluation or assessment process for these eportfolios, the main motivations which have impelled students to create, develop and continue the eportfolios have been intrinsic. The extrinsic motivations

derived from social connections and peer commenting, have served to feed and expand the students' intrinsic motivations.

Starting with the dual metaphors of “The Museum of Me” and “The Cabinet of Curiosities,” the Macaulay eportfolio community has asked students to decide for themselves what should be included in the eportfolios, what forms the eportfolios should take, and which parts should be made public at which times. Over time, we have been promoting an approach that, when describing it to students, we call “your work is your badge.” The concept here is that we want to couple the intrinsic motivation with the extrinsic, pushing students to see their own demonstration of their abilities (and their reflections on those abilities) as being in itself a reward, and also a formal recognition or certification. Applause from peers, positive comments or responses from outside audiences, or awards from our Expo, as badges of external recognition, provide positive extrinsic motivation. What we are beginning to see, especially through the Expo as an event, is that the extrinsic motivation can serve as a tipping point for students who are not yet fully motivated by the intrinsic factors, and can potentiate the intrinsic factors for students who are already responding to them.

The Eportfolio Expo, a spring evening when students (who have nominated themselves or been nominated by their peers) gather for cupcakes and eportfolio show and tell, was originally conceived (by the Macaulay administration) as mainly an awards ceremony—a recognition, with prizes and certificates—of the “best” of the eportfolio community. However, in even the first instance of the Expo, students immediately began using the event as a bridge between the online social interaction they had already been engaged in and the face-to-face interaction of the night itself. Students posted about the event on facebook, sending links to their eportfolios and asking classmates and friends (from all over the world) to visit their sites and to leave comments and rate them or to vote for them in the “people’s choice” award competition.

On the night itself, students who had not been nominated, students who were nominated, and even a few incoming students who had not even yet started their college careers joined in the discussion, constructive critique, and sharing of ideas. After each year’s expo, we have seen an increase in connections and comments among the eportfolios, and a surge in the creation of new eportfolios, and the development of existing eportfolios. Culinary/recipe eportfolios, self-challenging writing eportfolios (“demand a story of me” in which a student requested that her readers present a topic or criterion or demand, and she would write a story based on that, writing as many stories as were demanded over the course of a summer), and film criticism eportfolios were all examples of new types of work that were invented, developed and shared as a result of the Expos. Because these open eportfolios link the social and the formal, the informal and the individual, the academic and the personal, students invent new forms, get responses to those forms, and engage with a pride of ownership and self-satisfaction which sustains the eportfolios beyond the scope of assignments or school.

The convergence of formal and informal learning processes through social networking tools, and blended learning environments, however, raises unique challenges. Students demonstrate a degree of discomfort when asked to transfer skills and tools employed in informal learning to formal learning contexts- these are domains that they have traditionally kept separate, and affects how they assert their digital selves and identities in different contexts. Yet these challenges have provided a critical opportunity to engage students in discussions around managing their digital identities and digital citizenship, which has implications for a broad array of professional practices. These eportfolio projects have become a stage on which issues of privacy, control, intellectual property, resource allocation and policy issues around information technology and the future of learning generally are played out.

At Macaulay Honors College, questions of the definition of “commercial use” (which the university prohibits) have become very tangled. As students, for example, have used their eportfolios to raise funds through kickstarter to support their community service work in Nicaragua (a use which was ultimately allowed), or to install Google AdWords to make extra pocket money for themselves (a use which was disallowed), we have needed, as a community, to examine, discuss and evaluate the shifting landscape of the commercial and financial implications of the open web. When a student posted on her study abroad eportfolio a video (surreptitiously recorded) of a professor behaving abusively towards her on a train from Italy to Switzerland, we had the opportunity to discuss the ethics of surreptitious video recording, appropriate professional and academic behavior and channels for remedying abuses. In all cases, however, what was most important was the discussion. We did not (and always try not to) remove or edit or control any of the content on students’ eportfolios unilaterally. Instead when a problem arises, we contact the student and open a discussion, and then open the discussion to the wider eportfolio community, so that even the issues and challenges can become learning opportunities and opportunities to develop new understanding and new policies.

At the University of Oregon, the eportfolio project received initial central support from the college’s

Information Technology department, but this was pulled after a short pilot phase. The question of responsibility for resource allocation for this initiative which crossed so many boundaries and worked on so many levels was a complex one. At one point, the project at University of Oregon was almost eliminated as the university sought to manage changing student privacy policies in response to the widespread use of open source social media. As a result, an eportfolio privacy policy was adopted which is now used for the institution-wide edublogs installation. One of the most attractive features of the WordPress installation is that it gave students the greatest degree of privacy control over their digital presence; this became a critical response to a student privacy crisis that erupted on our campus.

Intellectual property and copyright are also a common issue. How to copyright these eportfolio sites, who owns instructional sites, and the kinds of information that could be shared through the public domain, are all issues that continue to be contested. Open source access and open source representation of information resulted in the administration at University of Oregon shutting down faculty advising sites and some other sites that did not “promote” or represent the officially sanctioned programmatic information. At Macaulay Honors College, a professor was not invited back to teach a seminar a second time. She requested that the class eportfolio she had used be deleted, even though she and the students had previously agreed that it should be publicly visible, because it was “painful” to see it when she was not teaching the course anymore. After extensive discussions, the professor found that her students preferred to be able to continue to see and refer to what they had learned and accomplished in the course, and she compromised by substituting her initials for her name throughout the course.

The integration of the open, social web with eportfolios, and the building of eportfolio platforms which can make use of social connections and fine-grained decisions about privacy and publicity have enabled, at the University of Oregon and Macaulay Honors College of the City University of New York, new discussions and new directions in the power of eportfolios and the role and function of eportfolios in higher education. Systems of this type allow us to see and use eportfolios as product and process, intrinsically and extrinsically motivated, connected and independent.

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On personal web log publication tool under IMS e-Portfolio standard

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Introduction

Traditional portfolios encountered the problem of many limitations, such as data storage, search and management in practice. With the rapid progress of information technology, Using Information

technology to generate or save the students' portfolios has become a universal solution.

Early electronic portfolios are mostly exist in static pages, there is no accepted standard, so e-the Portfolio can't share in the different systems and the problems of inefficiency and duplication of investment in software system integration, IMS Global Learning Consortium published the IMS ePortfolio Version 1.0 in Final Specification of e-Portfolio standards laid a milestone. The main purpose of the standard is to provide common standards to create a e-portfolio and shows anywhere.

The network information has been transferred from a specific media to the common users in Web 2.0 era, everyone can write what they seeing, listening and thinking to a blog. Therefore, the information in the blog have strong unique personal style, This environment provides a personal learning record and feedback mechanisms, We believe that according to the functional aspects, technical, user groups and market, blogs are very suitable starting point for development as of e-Portfolio in reflection dimension.

In considering the implementation of e-Portfolio, we also found that the learning management systems and blogs do not have a unified data reference model corresponding to each other. That learners and teachers must be collaboration between the two different systems. Therefore, application of blogs as e-Portfolio software system for e-Learning, we should consider the integration of system information to enable teachers and learners can take advantage of the different characteristics of the system for teaching and learning activities, In the present study, we discuss the current development status of the blog and user motivation based on the IMS ePortfolio standard. Explore e-Portfolio standards are directions applied to the blog by the way of system implementation.

Objective

e-Portfolio has the characteristics of assessment, presentation, reflection and achievements accumulated. Organizations usually use the e-Portfolio for learner self-assessment and reflection on the breadth and depth of learning and reference to the continuing education as a lack of self or directions to do in the future. In the enterprise, e-Portfolio can be used as the appointment of the individual employee, performance appraisal and promotion of reference with the certified standard. These requests bring the portability and interoperability of the e-Portfolio is very important to be able to exchange information in a variety of organizations.

According to domestic study, users do not have to spend a lot of time to use the blog when writing articles, and spending a lot of time to read other people's blog, that's indicates reading blogs has become one of the user's habits to access internet. The purpose of most users intends using the blog's is to record life, to express their emotions and sharing of information and compilation of the blog as a personal information management platform.

Table 1. Comparison of web publication tool

Term	Blog	Personal Website	Wiki
Article author	Individual or group	Individual	Group
Article sort	Time-series	Personal preference	themed
Technical aspects	Low	High	Medium
Update rate depends on	Individual	Individual	Group
Personal Description	High	High	Low
Knowledge representation	Unlimited	Unlimited	Specific
Secutiry	High	Medium	High

Publishing format	RSS, Atom, RDF	None	None
Feedback mechanism	Depend on settings	Depend on design	public

In particular, the blog can present a wide range of digital content can be fully demonstrated personal professional work and learning experiences. It allows the reader feedback mechanism to improve the traditional computer-assisted instruction, lack of peer interaction, lack of social situations, so the blog can have a computer cooperative learning characteristics of software systems.

In this study, we provide a general blog standard file format for RSS-based, Allowing users does not change the existing publishing model to re-package the content of blogs to IMS e-Portfolio format and sharing with other learners in a standards-compliant learning management system.

Assumptions and limitations

This study assumes that the motivation of bloggers post on the platform in order to tend to record personal learning process-based and using blog as the main tool to record lifelong learning process. The user must have the ability to use the blog for knowledge management and application. In addition, the personal motivation of using the blog may lead to this study and cannot be applied in some cases.

Summary of results

Application of RSS document format

RSS is a family of web feed formats used to publish frequently updated works—such as blog entries, news headlines, audio, and video—in a standardized format. An RSS document includes full or summarized text, plus metadata such as publishing dates and authorship. RSS feeds benefit publishers by letting them syndicate content automatically. A standardized XML file format allows the information to be published once and viewed by many different programs. They benefit readers who want to subscribe to timely updates from favorite websites or to aggregate feeds from many sites into one place.

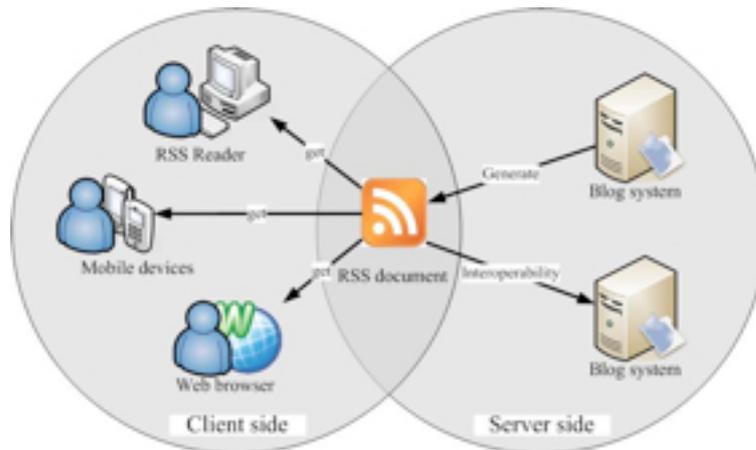


Figure 1: General RSS application model

Blogs use RSS technology to make articles published not only easy to retrieve the content by computer program, but also makes the blog with a cross-platform interactive capabilities. Our system implements an RSS-ePortfolio file conversion packaging system (hereinafter referred to RSSeP) for data acquisition, analysis, storage and reuse mechanisms in accordance with the RSS 2.0 specification.

System Requirement

In the first place, we create a blog system to send the full text of the RSS file to allow the program to retrieve the required content; Users can enter basic personal information and the RSS URL during e-Portfolio packaging. And then RSSeP can export into the IMS ePortfolio specification of the zip packaged file. This file allows user to import into the SCORM standard platform which depend on the different needs of e-Portfolio.



Figure 2: RSSeP System architecture

System design architecture is based on a web site with remote RSS reader functionality, we analyze RSS tags to map the IMS ePortfolio specification label according to the characteristics of data and the use of RSSeP system packaging, so the content can be applied to other systems. Both of RSS and the IMS ePortfolio are belong to the file distribution and preservation standards, so we have to understand the standard operating processes and the use of labels and then mapping their own design data access model before the system implementation.

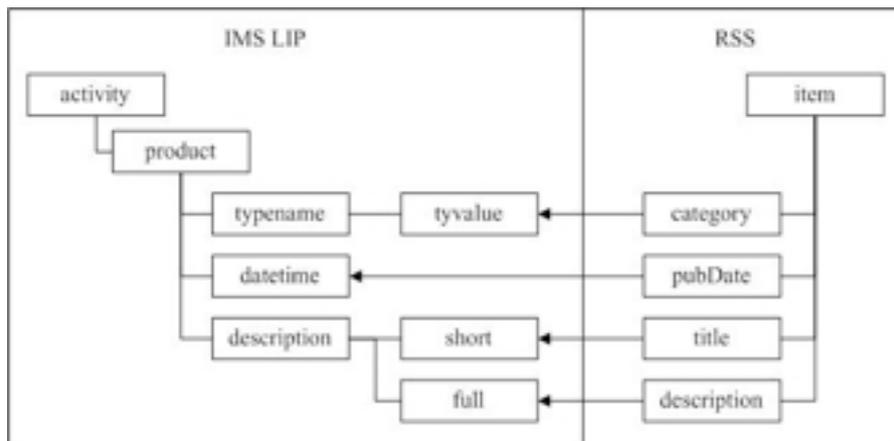


Figure 3: Data description mapping between LIP activity RSS tags

IMS ePortfolio standard exists in XML file format, but XML is not good reading, in order to allow an XML file can be displayed directly; we use XSLT to the data display format conversion. XSLT (Extensible Stylesheet Language Transformations) is a declarative, XML-based language used for the transformation of XML documents. The original document is not changed; the new document may be

serialized by the processor in standard XML syntax or in another format, such as HTML or plain text. XSLT is most often used to convert data between different XML schemas or to convert XML data into web pages or PDF documents.

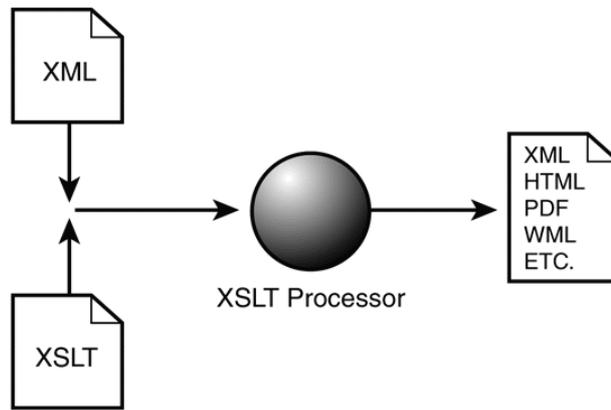


Figure 4: The XSLT transformation process

RSSeP system is now completed the three basic functions of “e-Portfolio packaging”, the “ePortfolio import” and “My ePortfolio browsing”. We found that in the implementation process, the article in the blog can be released by way of RSS use RSSeP system integration. Users can export the assessment results and interactive process in general learning management system, then the users can record the information in the blog to makes e-Portfolio content more complete.



Figure 5: RSSeP System prototype

Conclusion

This study proposes a ePortfolio information architecture base on personal publication tool, and implement the system and verify the feasibility of this framework. The system architecture proposed in the paper can be converted to a blog document the IMS ePortfolio Specification, and use XSLT offline browsing capabilities can solve the standards and portability support issues, Enhance interoperability with learning management platform to solve the lack of information on the nature of evidence. RSSeP system using RSS files between the IMS ePortfolio label mapping can be successfully packaging the ePortfolio-related articles in blog. XSLT style conversion can provide the feature for e-Portfolio offline browsing and be stored in any storage device, enhanced usability and portability.

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Ten Key Ideas for ePortfolio Implementation in Higher Education (in French).

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Introduction

L'approche « orientée compétences » s'inscrit dans les démarches impulsées dans l'espace européen de l'enseignement supérieur par le processus de Bologne. Dans ce contexte, la plupart des pays européens (et progressivement de l'ensemble de l'OCDE) organisent la valorisation et la promotion de la démarche ePortfolio. Cette démarche constitue un enjeu important pour le système universitaire. Elle renvoie à la fois aux problématiques de l'éducation et à celle de la formation « tout au long de la vie », au travers de la formalisation des parcours et des référentiels, de nouvelles modalités formelles et informelles d'acquisition ou encore de mise en exergue de compétences construites. En même temps, elle s'inscrit dans une logique de reconnaissance et de valorisation des acquis académiques et expérientiels, notamment dans la perspective de l'insertion professionnelle.

En France, de nouveaux textes réglementaires font référence de façon plus ou moins directe à la démarche ePortfolio. Pour exemple : concernant la certification Informatique et Internet (C2i), les principes et les modalités de certification reposent sur la constitution, par le candidat, d'un dossier numérique de compétences. Dans ce dossier, il doit faire état des savoirs qu'il a acquis ainsi que de la manière dont il a mobilisé et combiné ces acquis en situation, cela au regard des compétences requises pour l'obtention du certificat. D'une manière plus spécifique, « *ce dossier, constitué par le candidat, rassemble des éléments apportant la preuve des savoirs acquis, des aptitudes développées et des compétences maîtrisées en regard d'un référentiel C2i®. Ces éléments peuvent être des productions résultant des activités proposées au candidat et intégrées, autant que faire se peut, dans son cursus ; les résultats de contrôle de connaissances ; des productions externes commentées résultant d'activités du candidat en dehors de son cursus.* » (circulaire du 9 juin 2011).

Autre exemple : l'article 2 de l'arrêté du 1er août 2011, relatif à la Licence, précise que ce diplôme atteste l'acquisition d'un socle de connaissances et de compétences dans un champ disciplinaire ou pluridisciplinaires. Il annonce, dans son article 3, la production de référentiels de compétences définis pour une discipline ou un ensemble de disciplines. Actuellement, des référentiels sont en cours d'élaboration et seront prochainement publiés. *In fine*, dans l'article 13 de cet arrêté, il est précisé : « *Un processus dématérialisé de suivi des crédits acquis par chaque étudiant est mis en place* ».

Cette évolution majeure met en évidence la nécessité de s'interroger sur les dispositifs inhérents à cette démarche avec, en premier chef, l'accompagnement des étudiants et l'outillage supportant la démarche.

Afin d'apporter des réponses à nombre de questions liées à la démarche ePortfolio, un groupe de travail national (GTN) « ePortfolio » a été mis en place par la direction générale de l'enseignement supérieur (DGESIP), au cours du printemps 2011. Son but est de produire des éléments de clarification et des recommandations à l'attention des établissements d'enseignement supérieur français. Ce GTN est supporté par la mission numérique pour l'enseignement supérieur (MINES), au sein du service de la stratégie pour l'enseignement supérieur et l'insertion professionnelle.

Le GTN « ePortfolio » a pour objectifs spécifiques de :

- Dresser un état des lieux de la mise en œuvre de la démarche ePortfolio dans les établissements d'enseignement supérieur ;
- sensibiliser et informer la gouvernance des établissements, les services d'insertion professionnelle et les enseignants sur la démarche ePortfolio, tout en les outillant pour sa mise en œuvre notamment pour son pilotage politique et pédagogique ;
- proposer un cahier des charges fonctionnel afin d'aider à la mise en place des dispositifs de gestion de ePortfolios (SGeP) intégrés dans les systèmes d'information (SI) des établissements

d'enseignement supérieur¹⁹. Ces dispositifs doivent donner la possibilité aux étudiants de disposer de ePortfolios sécurisés, pérennes, personnalisables, tout en leur permettant de présenter les données à partir de points de vue différents et des cibles visées au cours de leur formation initiale, en vue de leur insertion professionnelle comme de leur parcours professionnel tout au long de la vie.

Ces éléments seront rassemblés dans le livre blanc « La démarche ePortfolio dans l'enseignement supérieur français » à paraître au cours de l'automne 2012. Appelé à être révisé périodiquement en fonction de nouveaux besoins ou d'avancées technologiques majeures, ce document de clarification et de recommandation permettra également d'orienter d'éventuels développements :

- De standards (notamment processus de traduction d'échanges et de passerelles) ;
- d'applications informatiques (notamment de systèmes de gestion d'ePortfolios) ;
- de connecteurs entre différents systèmes d'information (système d'information d'organismes de formation et/ou système d'information d'employeurs...).

Définition et clarification

Afin de faciliter les échanges entre l'ensemble des parties prenantes au sein des établissements, il est tout d'abord nécessaire de stabiliser les termes employés autour des propositions de clarification qui suivent.

Principes

Le ePortfolio est la propriété intellectuelle de son auteur, en l'occurrence de l'étudiant. Son contenu lui appartient et relève de sa vie privée. Il en a la maîtrise d'usage ; lui seul décide des données qu'il souhaite publier et avec qui il souhaite les partager.

L'établissement s'assure du pilotage de la globalité de la démarche ePortfolio ainsi que de la qualité du dispositif technique institutionnel, support à cette démarche. Intégré dans le système d'information de l'établissement, ce dispositif garantit l'interopérabilité : il prend en compte les normes et standards internationaux existants ou en cours d'élaboration, ainsi que la sécurité des données.

La démarche ePortfolio

Comme souligné précédemment, est considérée comme relevant d'une « démarche ePortfolio », toute démarche d'analyse réflexive d'un étudiant sur son parcours, ses apprentissages, ses expériences, ses compétences ou encore ses réalisations. La démarche vise à identifier, à expliciter et à formaliser l'ensemble de ces dimensions biographiques - tout en les valorisant et les capitalisant - dans un environnement numérique (le ePortfolio). Cet outil n'est que la partie visible d'une telle démarche dont l'enjeu est de développer l'agentivité et les compétences nécessaires pour cultiver (articuler « protection » et « projection ») de son identité numérique personnelle et professionnelle (Gauthier, 2008; Heutte & Caron, 2012; Kaplan, 2010).

Rappelons qu'il est souvent distingué quatre types de démarches²⁰ pouvant, si besoin, s'articuler entre-elles :

- *Démarche ePortfolio d'apprentissage*, avec la visée d'identification de la progression dans les apprentissages et des acquis en termes de savoirs ;
- *démarche ePortfolio d'évaluation*, avec la visée d'évaluation de connaissances ou de compétences ;
- *démarche ePortfolio de présentation*, avec la visée de la mise en valeur des savoirs ou compétences acquises, du parcours, des expériences vécues, des productions ePortfolio de développement personnel avec la visée de construction réflexive de compétences ;
- *démarche ePortfolio de développement personnel*, avec la visée de construction réflexive de compétences.

Le dispositif technique ePortfolio à vocation à supporter, indépendamment ou en ensemble, ces quatre démarches.

¹⁹ Le Cahier des charges fonctionnel « d'un dispositif technique support à la mise en œuvre d'une démarche ePortfolio » (CdCF « ePortfolio ») est disponible en téléchargement et peut être commenté *via* un formulaire en ligne : <http://www.enseignementsup-recherche.gouv.fr/eportfolio>.

²⁰ ISO/IEC 20013 (PDTS2) : *Reference Model for e-Portfolio Information*, Technical Specification (PDTS2 Ballot).

Le pilotage de la démarche ePortfolio consiste à organiser et à maintenir un ensemble de dispositifs (notamment de formation et techniques) cohérents et coordonnés au sein de l'établissement, en vue d'accompagner les étudiants dans la démarche ePortfolio. La démarche prend tout son sens si l'étudiant l'associe à la question de son projet professionnel et personnel, garantissant ainsi que, quel que soit le moment où il entre ou quitte l'établissement, ses acquis soient capitalisés. Il revient à l'établissement d'inscrire cette démarche dans sa politique de mise en œuvre de la formation tout au long de la vie (FTLV) et, de fait, de s'interroger sur l'importation, l'exportation des données ainsi que la durée d'accès aux services numériques supportant la démarche ePortfolio et les dispositifs (pédagogiques et techniques) favorisant la construction de l'identité numérique des étudiants.

Le ePortfolio

S'inspirant de diverses définitions (Cloutier, Fortier, & Slade, 2006; De Rozario, 2005; Endrizzi, Gausse, & Leclercq, 2005; Gauthier, 2008; Ravet, 2009a), Heutte et Jézégou (2012) définissent le ePortfolio comme est un ensemble évolutif de documents et de ressources électroniques capitalisés dans un environnement numérique décrivant et illustrant l'apprentissage, l'expérience, les compétences ou le parcours de son auteur. Accessible à distance via une technologie interopérable, un ePortfolio s'appuie sur une base de données personnelles (informations, documents ou liens accessibles via internet) et un (ou plusieurs) espace(s) collectif(s) de publication sélective.

L'auteur du ePortfolio doit pouvoir maîtriser le contenu et les services associés du ePortfolio qu'il veut partager, sous son contrôle, avec des tierces personnes, notamment pour :

- Capitaliser ses expériences tout en apportant les preuves de la maîtrise de compétences (scientifiques, d'ingénierie, sociales, etc.) ;
- permettre la validation, la certification ou la valorisation de ses acquis de l'éducation, de la formation ou de l'expérience ;
- favoriser l'autodétermination de son parcours de formation (initiale et continue) ;
- accompagner son insertion professionnelle ou son développement personnel et professionnel tout au long de la vie ;
- cultiver son identité numérique (obtenir une lisibilité professionnelle sur Internet) et se démarquer par la singularité de ses expériences, de son projet, de son parcours.

Le dispositif technique ePortfolio

Un dispositif technique support à la démarche ePortfolio doit être réfléchi en tenant compte trois niveaux d'organisation (Ravet, 2009a) :

- *Le système de gestion de ePortfolios (SGeP)* est un dispositif technique permettant à une organisation de gérer un ensemble de ePortfolios en adéquation avec le système d'information et la gestion du dispositif, telle qu'elle sera définie au préalable par l'organisation.
- *Le système ePortfolio (SeP)* est un ensemble de services numériques institutionnels permettant à une personne (ou une organisation) d'archiver les résultats de ses apprentissages, de les relier entre eux et à d'autres sources d'informations (autres documents, bases de données de compétences) et de publier des portfolios adaptés aux besoins d'audiences particulières. C'est également dans le SeP que s'organisent les échanges entre les acteurs (étudiants, enseignants, tuteurs, maîtres de stage, administration...).
- *Le ePortfolio (eP)* est un espace personnel de l'étudiant/apprenant avec un ensemble de services lui permettant d'organiser ses données.
- Ce dispositif technique comprend différents outils qu'il est nécessaire de distinguer (Ravet, 2009a), tout en soulignant l'importance de leurs articulations :
- *Une archive personnelle* contenant les preuves de compétences et acquis de l'éducation, de la formation, de l'expérience personnelle ou professionnelle (permettant notamment d'élaborer un dossier de compétences).

Exemple de fonctionnalités : Consultation du dossier scolaire, universitaire, du parcours professionnel et personnel.

- *Un système d'édition* permettant de sélectionner des éléments de cette archive, de les relier entre eux ou avec des sources extérieures (par exemple, lier une preuve de compétence avec un référentiel de compétences académique ou professionnel).

Exemple de fonctionnalités : Edition de CV, gestionnaire d'artefacts/de production, accès à un espace réflexif (blogs, wiki...), accès à des communautés d'appartenance, exportation des données et accès aux ressources externes dédiées à l'orientation et à l'insertion professionnelle (ONISEP, CIDJ, APEC, Organisations professionnelles...), import et exports de données, système de recherche multicritères.

- *Un système de publication* permettant de communiquer le résultat de ce travail d'édition, à un formateur ou un tuteur (dans le cadre d'une formation), à un évaluateur (dans le cadre d'une certification/diplomation), à un employeur potentiel (pour une recherche d'emploi), ou à toute autre personne ou entité à qui l'étudiant voudrait le communiquer.

Exemple de fonctionnalités : publication de CV, envoi de lien et de documents.

- *Un système de gestion* permettant à une organisation (une université ou un employeur) de gérer un ensemble de ePortfolio en fonction de l'objectif de l'organisation : suivi de l'évaluation, gestion des compétences, gestion des carrières.

Exemple de fonctionnalités : Saisie de notes, d'appréciation, d'évaluation, consultation du dossier scolaire et universitaire, du parcours professionnel.

Le dispositif technique support à la démarche ePortfolio doit permettre l'exploitation des flux de données et d'information entre les espaces personnels et les espaces institutionnels, selon les principes de porosité et de malléabilité (Caron & Varga, 2008).

L'enquête « état des lieux »

Une enquête en ligne lancée en début d'année 2012²¹ permet de dresser un premier état des lieux concernant les projets en cours. L'ensemble des données est en cours de traitement, nous souhaitons cependant en donner ici quelques premiers résultats (suite à une extraction réalisée le 1^{er} avril 2012).

Qualification des répondants

Parmi les 166 réponses, 157 étaient exploitables. Les répondants (pour ceux qui ont répondu à cette question) sont majoritairement des enseignants (52,7%), dont près des deux tiers sont enseignants-chercheurs, 24,5% sont des ingénieurs d'étude ou de recherche, 22,7% sont des gestionnaires ou des responsables administratifs.

Ces personnes décrivent des projets en cours dans 47 organisations, dont 35 sont des établissements de l'enseignement supérieur français.

Types de projets ePortfolio

Les projets ePortfolio sont majoritairement (81,1%) ciblés sur des étudiants en formation initiale, 18,9% en formation continue. Ces projets concernent pour 53,1% des étudiants inscrits en Licence, 38,8 % en Master et 8,2 % en Doctorat. Parmi les projets décrits, 19,6% concernent des formations en IUT, 17,4% la formation aux métiers de l'enseignement (majoritairement dans les IUFM) et 6,5% la formation des élèves ingénieurs.

Il n'y a généralement (86,2%) qu'un seul projet en cours dans les établissements. Cependant, 11,7% des établissements décrivent 2 projets distincts en cours et 2,1% en décrivent au moins 3. Dans les établissements où il y a plusieurs projets, les répondants insistent sur la nécessité d'une cohérence des dispositifs pédagogiques et d'une rationalisation des outils, sous peine de créer une incompréhension génératrice d'une démobilitation massive des étudiants, comme des enseignants.

Pour les établissements ayant répondu à cette question, dans 55,1% des projets, il s'agit plutôt d'un ePortfolio de développement personnel (principalement lié au dispositif *Portefeuille d'expérience et de compétences (PEC)*), pour 27,5% d'un ePortfolio d'évaluation (principalement lié à l'évaluation du C2i), pour 13,0% d'un ePortfolio d'apprentissage, 4,3% d'un ePortfolio de présentation. Il est à noter que 13% des projets en articulent plusieurs types.

²¹ Il est toujours possible de renseigner l'enquête « Démarche ePortfolio : État des lieux » pour signaler un nouveau projet : <http://www.enseignementsup-recherche.gouv.fr/eportfolio>.

La démarche ePortfolio concerne pour 49,0% l'insertion professionnelle, pour 25,5% elle fait partie de formations intégrées dans le curriculum (compétences "métier", alternance, projet professionnel de l'étudiant...), pour 23,5% elle concerne le C2i et 2,0% pour le CLES. De nombreux répondants soulignent que l'intégration au curriculum de la démarche ePortfolio (dans le cadre d'un dispositif pédagogique faisant partie intégrante d'un diplôme) est un gage d'efficacité et surtout d'une meilleure compréhension de l'intérêt de la démarche par les étudiants.

Pilotage de l'accompagnement et de la formation à la démarche ePortfolio

Ces projets sont majoritairement pilotés (56,1%) par les services en charge de l'orientation et de l'insertion professionnelle des étudiants. 17,1% le sont par des services TICE, 9,8% par des services en charge de la formation pédagogique des enseignants (du type service universitaire de pédagogie), 9,8% par des services en charge de la formation à distance, 7,3% par des services en charge de l'informatique et des systèmes d'information.

L'accompagnement et la formation des étudiants est une constante forte dans la plupart des établissements (92,2%), celle des enseignants ainsi que de l'ensemble des personnels en charge de l'accompagnement des étudiants se généralise (75,4 % des établissements). De nombreux répondants indiquent que ce n'est généralement pas la prise en main de l'outil qui pose problème, mais bien davantage la compréhension de la démarche ePortfolio et de son intérêt par les étudiants, comme par les enseignants.

Mutualisations inter universitaires

Les deux tiers des projets sont réalisés dans le cadre de collaborations inter universitaires.

Dans les réponses à l'enquête « état des lieux », il apparaît que 53,2% des projets s'inscrivent le dispositif *Portefeuille d'expérience et de compétences (PEC)* piloté par l'université Toulouse 3 – Paul Sabatier, 23,4% dans le consortium en charge du développement d'un *Environnement Malléable support à l'Évaluation des compétences (EMaEval)* piloté par l'université Lyon 1 – Claude Bernard, 14,9% œuvre au sein de la *communauté francophone de Mahara*, 4,3% utilisent le *Carnet de bord informatisé (Cbi)* soutenu par l'université de Reims Champagne Ardenne et 4,3% le *Module référentiel*.

Points de convergence des premiers retours d'expériences

Une synthèse partielle des éléments recueillis, entre avril 2011 et mars 2012, après consultations de près de 200 acteurs (réunions du groupe de travail national, appel à commentaires, enquête en ligne et entretiens individuels), complétée par une revue de littérature internationale (Dufour, 2011; Hallam et al., 2010; JISC, 2007, 2008; Janssen et al., 2011; Ravet, 2009b; Reese & Levy, 2009) permet de mettre en évidence et de conforter certains principes qui constituent des constantes prédictives des réussites (comme des échecs) de la démarche ePortfolio dans les établissements d'enseignement supérieur.

C'est autour de ces idées clés que s'organisent les orientations et propositions de pistes de mise en place d'une démarche ePortfolio qui seront préconisées dans le livre blanc à paraître au cours de l'automne 2012 et que nous souhaitons exposer brièvement, de façon hiérarchisée, dans les lignes suivantes, en nous focalisant plus particulièrement sur ce qui concerne le pilotage politique, les dispositifs pédagogiques et les dispositifs techniques.

À propos du pilotage politique

1) Les gouvernances des établissements s'assurent de la cohérence et de l'harmonisation des différents dispositifs s'intégrant dans la démarche ePortfolio (nouvelle licence, suppléments au diplôme, C2i, VAE, alternance, orientation, insertion professionnelle et mobilité européenne...).

2) La démarche ePortfolio permet une plus grande lisibilité des parcours individuel de l'étudiant et des parcours de formation, des acquis de l'éducation et de la formation, afin d'impliquer les employeurs potentiels et de comprendre leurs attentes et leurs besoins

À propos des dispositifs pédagogiques

3) Les données d'un ePortfolio relèvent d'activités réflexives intimes et complexes que l'étudiant mène dans un espace privé et confidentiel hébergé par l'institution. Les travaux partagés avec des tiers ou des pairs, en fonction des besoins académiques ou de démonstration d'employabilité, ne peuvent l'être que sous la responsabilité de l'étudiant.

4) La démarche ePortfolio s'intègre dans des dispositifs pédagogiques à la frontière des mondes académiques et professionnels dans une perspective de formation tout au long de la vie.

5) Un accompagnement humain fort est nécessaire pour initier la démarche et apprendre aux étudiants à être progressivement autonomes. Il se situe bien au-delà des contingences techniques liées à la prise en main d'un outil. La professionnalisation des acteurs de l'accompagnement est indispensable.

6) Le ePortfolio concerne l'identité numérique de l'étudiant. L'établissement a pour mission de faire acquérir les compétences nécessaires à la gestion de cette identité ainsi que de favoriser son enrichissement, notamment dans ses aspects académiques et professionnels

À propos des dispositifs techniques

7) La démarche ePortfolio repose sur un dispositif technique intégré au système d'informations de l'établissement, lequel garantit la cohérence et la globalité de la démarche. Toutes les données connues des services administratifs et pédagogiques de l'établissement, dont l'usage peut s'avérer utile, doivent être automatiquement et directement accessibles dans le dispositif ePortfolio grâce à une connexion aux applications métiers du Système d'information.

8) Le dispositif technique prévient toute lecture abusive et garantit le droit des intéressés dans la mesure où le contenu du ePortfolio appartient à l'étudiant et relève de la vie privée. C'est lui qui choisit, en fonction des publics, les informations qu'il veut donner à voir.

9) Le dispositif articule la description de l'offre de formation aux résultats et acquis de la formation. Il permet également l'édition, des documents académiques valorisant le curriculum de l'étudiant (diplômes, suppléments au diplôme, certificats, attestations...). Le dispositif vise à terme la mise en place d'un service d'authentification numérique de ces documents et sa pérennisation dans une perspective de formation tout au long de la vie.

10) Le dispositif garantit l'interopérabilité, en prenant en compte les normes et standards internationaux existants ou en cours d'élaboration, ainsi que la sécurité des données.

Conclusion

En guise de conclusion provisoire, nous souhaitons retenir que la démarche ePortfolio nécessite de développer et de maintenir de façon pérenne des dispositifs pédagogiques destinés à favoriser la création d'ePortfolios par les étudiants, notamment en vue de s'assurer qu'ils auront les compétences nécessaires pour cultiver leur identité numérique personnelle et professionnelle tout au long de la vie.

La mise en œuvre de la démarche ePortfolio repose en premier lieu sur une vision stratégique de la place de l'université française dans l'espace européen de l'enseignement supérieur, notamment dans ses compétences à valoriser les acquis de l'expérience, de l'éducation et de la formation tout au long de la vie des étudiants.

Tout en se préservant de la vision réductrice d'un pilotage par les contingences informatiques, les choix politiques et pédagogique induits par la démarche ePortfolio ne peuvent se concevoir sans une réflexion collégiale éclairée de l'ensemble des acteurs prenant effectivement et pleinement en compte la dimension technologique incontournable de cette démarche.

A l'évidence, la réussite de démarche ePortfolio nécessite une implication forte des gouvernances des établissements d'enseignement supérieur (présidents et vice-présidents, directeurs, responsables des services de formation ou en charge de l'insertion professionnelle), notamment afin de coordonner les actions de l'ensemble des communautés professionnelles à mobiliser :

- les praticiens — qui accompagnent les étudiants et les acteurs de cet accompagnement — et notamment les enseignants, les professionnels de l'accompagnement des Bureau d'aide à l'insertion professionnelle (BAIP), des Service universitaire d'information d'orientation (SUIO), des Services de formation continue universitaires ;
- les ingénieurs et informaticiens qui fournissent les services supports adaptés aux besoins de l'ensemble des acteurs et au bon fonctionnement des dispositifs ;
- les professionnels des ressources humaines, du recrutement, et les cadres chargés des démarches compétences désormais incontournables dans les entreprises privées et les services publics.
- Enfin, il ne faut pas manquer de mobiliser les chercheurs, dès la conception des dispositifs, afin qu'ils soient en mesure d'évaluer, de modéliser et de produire des connaissances sur les phénomènes induits par ces dispositifs dans les meilleures conditions méthodologiques possibles. Développer un lien organique étroit entre formation et recherche relatives à la pédagogie

universitaire est à l'évidence le meilleur moyen de conjuguer ensemble excellence de la recherche et excellence des formations, afin notamment de pouvoir en retour éclairer les pratiques des différents acteurs (Heutte, Lameul, & Bertrand, 2010).

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