Implementing Programme-wide ePortfolio to Support Sustainable Student Learning at USP

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Abstract- There has been increasing emphasis in recent years on moving away from traditional teaching and towards student-centered learning. This paradigm shift has encouraged moving power from the instructor to the learner, treating the learner as a co-creator in the teaching and learning process (Barr & Tagg, 1995). Grades are less relied upon as a proof of learning, stakeholders in education and the workplace want documentation that provides evidence of the entire process of learning. To answer these calls, our faculty at University of the South Pacific (USP) has introduced the use of ePortfolios and Mentoring in its four year undergraduate degree programmes in Software Engineering and Net-Centric Computing.

This paper gives an account of the implementation of the project to date in the undergraduate subject and how the ePortfolio is being used here as both a learning tool and a means of aggregation. Using ePortfolios, students are provided a context within which they can appreciate the knowledge and skills they are acquiring and contextualize the understanding of the many roles within the profession. It also allows them to tell their own stories and make connections between their formal coursework and their informal, experiential learning (Wyllie, 2010).

Keywords: ePortfolio, graduate-attributes, professional development.

1. Introduction

Over the past decade a paradigm shift has changed the focus of education from instruction-oriented to a more learning-oriented model. In the instruction-oriented paradigm, an educational institution existed to provide instructions. The most common teaching method used was the lecture. This was probably because it was seen as the only economical way to cover large amounts of information in a short period of time. The teachers were in the active role whilst the students were in the passive, receptive role. In such a system, it was highly likely that students were mostly listeners rather than learners as evidence indicates that students learn and retain more information when they are actively involved in the learning process (McCombs & Whistler, 1997).

On the contrary, in the contemporary learner-oriented paradigm, an educational institution exists to produce learning. The learner-oriented paradigm uses student-centered/active learning techniques to get students involved in the learning process. The focus is on the student's needs, abilities, interests, and learning styles. The model acknowledges student voice as central to the learning experience for every learner and requires students to be active, responsible participants in the learning process.

Theorists like John Dewey, Jean Piaget, and Carl Roger's collective work was one of the first that focused on student-centered learning. The student-centered model requires instructors to see each learner as distinct and unique. This means that they have to recognize that learners in any classroom learn at different rates with different styles, they have different abilities and talents, their feelings of efficacy may vary, and they may be in different stages of development.

The purpose of this paper is to report on the new project undertaken by the Faculty of Science, Technology & Environment (FSTE) at USP in its attempt to nurture the growth and professional development of students through the innovative use of ePortfolio. An over-arching module has been introduced in two new undergraduate programmes in the field of Information & Communications Technology (ICT). These two four-year programmes, namely Bachelor of Software Engineering (BSE) and Bachelor of Net-centric Computing (BNC), intend to produce quality, world-class graduates in the rapidly evolving ICT discipline. The ePortfolio is been identified as the means to facilitate self-reflection and personalized career planning. The programme also includes a mentoring scheme to appraise their self-assessment, oversee their progress and foster growth of the students.

2. E-Portfolios and Learning

An ePortfolio is a tool that provides an innovative and dynamic means for students to store and record evidence of their educational progress, professional attitudes, achievements and skills (JISC, 2008). Portfolios have been used as a learning tool to allow students to take charge of their professional development and continuously self-reflect on their progress. If properly implemented, it can:

- encourage and make provision for the students in articulating their learning and set their development goals,
- incorporate self-monitoring and self-assessment of their progress towards the goals, and include guidelines for self-assessment,
- provide for mentor/advisor feedback and promote the use of feedback to inform future goals,
- encourage and make provision for the students in articulating strategies for attaining their goals,

- promote evaluation of, and linking feedback to self-assessment and attainment of goals,
- prompt students to assess and reflect upon their portfolio entries.
- Opportunity for students to share their achievements with fellow students.

The faculty therefore identified the ePortfolio as a tool that is could be essential for the personalized-professional development of the students. The literature is also generally positive about the benefits of ePortfolios for the intended context (see, for example, Cambridge, 2001; Teoh, 2011; JISC, 2008; and Hallam et al., 2008). Research has shown that ePortfolios can "enhance" learning outcomes for students and that ePortfolios are more likely to be successfully valued by students if used for assessment (Wyllie, 2010).Thus, globally the use of ePortfolios is becoming integrated into student-centered learning within undergraduate programs.

3. Implementation

The subject, *Foundations of Professional Practice*, was introduced in Semester 1, 2013, to prepare students for transition from university to professional practice in industry. Each student's portfolio is expected to be a unique expression of their academic, co-curricular, and any programme related work experience. It represents a new focus for the Faculty and its intentional nature is targeted towards the professions.
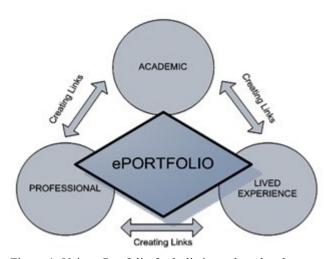

Figure 1: Using ePortfolio for holistic student development

The course has been constructed using ICT skills taxonomy; the Skills Framework for the Information Age (SFIA); an ePortfolio technology (Mahara); mentoring; and assessment (by mentors). SFIA framework provided a context within which students could self-assess their capability, appreciate the knowledge and skills they are acquiring in their university degree and plan a career or set further professional development goals.

In terms of specific graduate attributes, the subject is expected to satisfy the generic skills definitions in the Skills Framework for the Information Age (at Level of Responsibility 3), namely;
- Autonomy
- Influence
- Complexity
- Business Skills

4. Assessment Criteria

To ensure that there is some consistency in the feedback given to the students, specific criteria have been written in order to provide both verbal and documented feedback to the students (and the faculty) on students' progression in terms of their abilities.

The assessments are broken down on a semester basis and are released incrementally with explicit focus on specific aspects of professional development at different levels within the programme. Over the three (3) year course, through this over-arching course, students will have the opportunity to use the ePortfolio to accumulate evidences and reflect on the following:
- What am I good at? What are my strengths?
- What professional capabilities do I need and what professional capabilities do I have?
- What is my plan for the future?

5. Student Workload

With students already enrolled in normal courses each semester, this subject is streamlined to ensure that workload of students is not drastically increased. Thus, the module on a semesterly basis, requires students to attend a two hour workshop in week 3 followed by independent online tasks involving the creation of the ePortfolio. In week 12, the Mentors meet the students to perform summative assessments of the students' progress as per the key assessment criteria set for the semester. The mentoring session can either be face-to-face or online (via Skype) with an average session to last between 30 minutes to 45 minutes in Year 1 and up to 90 minutes for Year 3 students.

6. Role of Mentors

Mentors or Industry supervisors are key to the success of the scheme as they support individuals to identify and address their learning and development needs. In the early years of the programme, mentors will encourage students to reflect on their (pre) professional situation (ie. self-assessment of their capabilities) and to consider in detail their career options. Mentors will, twice per semester (more frequently during the final project), assess student ePortfolio postings which, in essence, will be reflective self-assessments with supporting evidence (assignments, extra-curricular activities etc). The one-to-one mentoring approach is expected to encourage the growth of the students focusing on their individual strengths and limitations.

7. Preliminary Feedback

A survey was conducted for the first cohort of students using the programme-wide ePortfolio. The results showed that students have positively embraced ePortfolio as a tool for professional development and self-evaluation. More than 70% of the students generally seemed to be able to appreciate the importance of their specific courses and how it eventually fit in the programme. This understanding is fundamental for their self-reflection and career planning.

The feedback from the Mentors was also positively taken on-board by the students. Interestingly, close to 80% of the students suggested that it would be valuable to view their peer's ePortfolio; something which they believe could further assist their self-evaluation. This has also been the underlying reason for using ePortfolio for this exercise which was to have more inclusive and user generated learning process.

8. Conclusion

The characteristics of e-portfolios offer an innovative and dynamic medium for recording and organizing evidence/artifacts, and a powerful reflective tool to demonstrate growth over a period of time, with the potential to provide a foundation for long-term authentic professional development and lifelong learning.

The success of the tool, however, is yet to be seen in the years to come. The faculty is however positive that the success will depend on the three key stakeholders (students, academics and employers) embracing the value of the proposed approach. Other potential benefits seen from the project include aggregation of course artifacts and assessment feedbacks that could be useful for programme review and accreditation purposes.

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