

Voluntary or compulsory: Using a variety of approaches and models to implement the Student e-Portfolio across 40,000 students at QUT

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1.0 Why a portfolio for QUT?

The idea for the creation of an electronic portfolio for QUT students was prompted by a 2001 symposium at Harvard University which discussed the idea of enabling students to electronically record their university experiences in a repository. QUT's Deputy Vice-Chancellor (Teaching, Information and Learning Support), Professor Tom Cochrane, returned from the symposium with a desire to provide QUT students with greater evidence of their achievements than could be displayed by an academic transcript alone (McCowan, Harper & Hauville, 2005). At QUT, concerns had also been raised that exiting students were not clear about the full complement of skills they had developed throughout their university career, which would have direct implications for student transition from university to graduate employment.

Portfolios typically encourage reflective processes, metacognitive connections across the full range of student experiences and student-centred learning (Kimball, 2005). In this way, they assist students to understand their overall learning experience beyond the confines of individual units and assessment marking grids, enabling a holistic view of the individual's current skill sets and areas for further development, and of how student experiences relate to future professional roles.

Three basic categories of electronic portfolios have been identified: structured (having a pre-determined organisational structure), learning (enhancing learning processes by reflection) and showcase (presenting accomplishments for employment or promotional purposes) (Greenberg, 2004; Mihram, 2004). From its inception, **the QUT Student Electronic Portfolio (the SeP)** was designed to address all three of these categories (McCowan, Harper & Hauville, 2005).

In summary, the main purposes identified for the development of an electronic portfolio were:

- Collecting and recording student experiences in a single structure
- Raising students' awareness about the generic skills employers seek
- Connecting students' skills and experiences to the curriculum
- Learning through reflecting and evidence-based writing
- Helping students to understanding and self-audit their skills and experiences
- Helping students to plan where and how to develop skills
- Enabling portfolio content and developmental progress to be reviewed by self and others
- Showcasing slices of personal evidence
- Preparing evidence for academics and employers
- Preparation and building confidence for applications & interviews (McCowan, Harper & Hauville, 2006)

Central to the design of the SeP was the development of the Employability Skill Set, derived from both QUT- and industry-identified graduate attributes, and developed in consultation with every QUT faculty (for further detail, see 3.2). This Skill Set, which provides a structure for the SeP, has been critical to its success.

Design development began on the SeP in February 2003 with a multi-disciplinary team selected from Information Technology Services, Teaching and Learning Support Services, Careers & Employment and the Division Executive. In September 2003, the SeP was piloted amongst a small cohort of postgraduate coursework students in the School of Information Systems. Following the success of the initial pilot, a second, larger pilot (4,000 students) was conducted across multiple Schools in Semester 1, 2004 (McCowan, Harper & Hauville, 2005). In 2005 the SeP was released to the entire QUT community (40,000 students). Formal evaluations are planned on an ongoing basis, enabling the SeP to continue to be developed and enhanced in response to changing staff and student needs.

2.0 The QUT Student Electronic Portfolio

The SeP is a university-wide, online tool designed to

“enable students to record, reflect on, catalogue, retrieve and present their experiences, activities, and things they produce both inside and outside of university life as evidence of the skills developed while at QUT that contribute significantly to their lifelong learning and career development.” (ePortfolio Purpose Statement, McCowan, C., Harper, W. & Hauville, K., 2004)

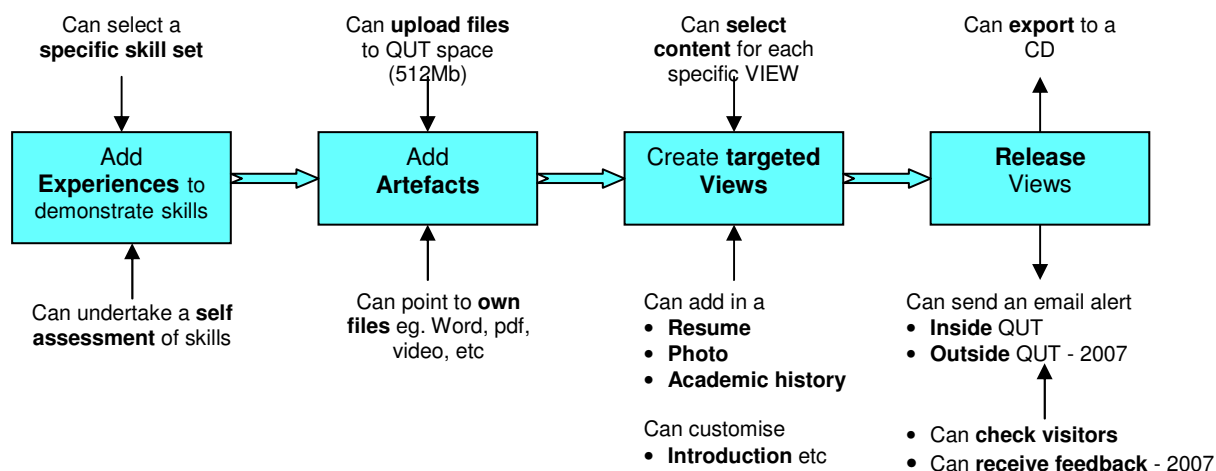
It is fully integrated with the main QUT intranet portal (QUT Virtual), which also provides enrolment, class allocation, timetable and similar services. Importantly, the planning and implementation of the SeP has been underpinned by a whole of university approach, with the adoption of a university portfolio policy in November 2004 (QUT Manual of Policies and Procedures, F/1.6: *Electronic Portfolio*).

The SeP is constructed around three core elements:

- Experiences: Students document and reflect on experiences which relate to the ten Employability Skills within the SeP.
- Artefacts: Students may add examples of their work as evidence of their achievements and experiences.
- Views: Students can choose to share parts of their SeP with specified others, such as potential employers or teaching staff.

Experiences and artefacts may be entered under four settings: academic, work, community and personal, allowing students to incorporate relevant activities from any sphere of their lives (McCowan, Harper & Hauville, 2005). Once information and materials are entered, particular views can then be generated for specific audiences or situations, and released (see Fig 1). Students also have the option of building a resume within the SeP, and to include their academic record.

Fig 1: Diagram indicating the process of creating a Portfolio



The SeP is particularly unique in that it incorporates all three of Greenberg’s ePortfolio categories: **Structured** - The SeP provides a central structure and framework in which students record and reflect on their experiences;

Learning - The SeP encourages reflection and is readily embedded within specific curricula;

Showcase - The Views facility enables students to generate and release targeted to present appropriate work for specific situations.

In response to student concerns about ongoing access to the SeP, in December 2006 the SeP was made available for life to all students and Alumni who have graduated from QUT since December 2004, with an increased 512MB storage per student. Lifelong access increases the SeP’s utility as a lifelong learning tool, whether students re-activate it on return to further study or develop it as a personal or professional development tool.

3.0 Our success so far

The rate of uptake of the SeP has been rapid, with 23,000 portfolios in existence as at January 2006. The QUT Student Portfolio Reference Group has identified six key characteristics which have contributed to the success of the SeP (Harper & Kift, 2006).

3.1 A single, university-wide system

Taking a university-wide approach has focussed QUT resources and commitment to the development of a single e-portfolio system, preventing the proliferation of multiple, potentially incompatible faculty- or school-based systems. The SeP has been designed with input from careers, academic and IT staff to make the application as universal, useful and flexible as possible. Extensive negotiations were conducted with all faculties prior to the design phase, in order to generate a set of core Employability Skills around which the SeP is organised (see also 3.2). These essential and comprehensive negotiations ensured the applicability of the SeP across the entire university. The resulting SeP provides a university standard, working across all degrees, and suitable for use throughout flexible career/study paths.

3.2 The use of Employability Skills as a holistic organising device

Ten Employability Skills have been generated from the generic QUT Graduate Capabilities specifically for application in the SeP. These Employability Skills follow closely the Employability Skills Framework published by the Australian Chamber of Commerce and Industry (ACCI) and the Business Council of Australia (BCA). These Skills, developed by QUT Careers & Employment staff in conjunction with faculty staff, have been designed to also be compatible with specific professional association attribute listings (eg. Nursing, Teaching) and specific faculty/school competency listings (McCowan, Harper & Hauville, 2006). The resulting Employability Skill Set provides a universally-applicable organising principle for all portfolios:

- Communication
- Teamwork
- Problem Solving/ Critical Thinking
- Life Management/ Life-long Learning
- Technical/ Professional/ Research
- Managing/ Organising
- Social/ Ethical Responsibility
- Leadership
- Creativity/ Design
- Initiative/ Enterprise

An additional, undefined skill is also available for students to include any skill area they feel is not covered by the core ten.

Fig 2: Example Student SeP entry for specific Employability Skill (Leadership)

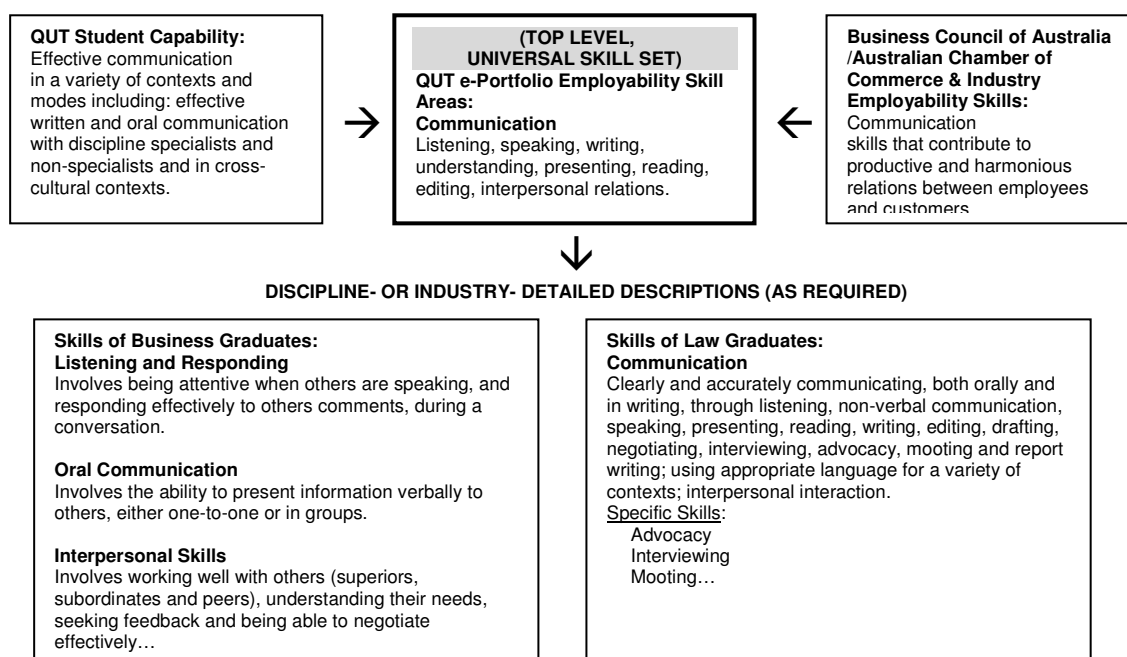
The screenshot shows a web interface for a student portfolio. At the top, it says 'QUT Queensland University of Technology' and 'Student Portfolio - AMBER STACEY SMITH'. There are navigation tabs for 'Introduction', 'Experiences', 'Artefacts', 'Resumé', and 'Academic History'. A 'Printer friendly version' link is visible. On the left, there is a globe icon and a list of links for various employability skills: Communication, Teamwork, Problem Solving / Critical Thinking, Life Management / Life-long Learning, Technical / Professional / Research, Managing / Organising, Social / Ethical Responsibility, Leadership, Initiative / Enterprise, and Committee Work. The main content area is titled 'Experiences - Leadership' and is divided into 'Academic' and 'Community' sections. Under 'Academic', there is a 'Kmart project' entry with a detailed description of a research project and a link to a PowerPoint presentation. Under 'Community', there is a 'Voluntary collection' entry describing work for the Leukaemia Foundation.

Students enter experiences and artefacts against the relevant skills. A snapshot of a completed page is presented in Fig 2. At the highest level, these Employability Skills are common across all disciplines, enabling students to carry the SeP with them across various career or study changes.

More detailed faculty, discipline or industry-specific skill descriptors may be mapped to each of the Employability Skills to provide the students with greater detail regarding what is required (Fig 3). These specific skills remain mapped to the top-level Employability Skill sets, to enable students to easily revert their data back to the generic skill sets if they change career or discipline, or where students are pursuing combined degrees.

The Employability Skills thus provide a unified organising principle, grounded in authentic industry and discipline requirements, by which students can evaluate (via a self-assessment facility), track and record their skill development, even throughout multiple career changes. This approach provides students with clarity about their current and developing skill sets, enables them to identify skill deficits, and motivates them to acquire experience or training to fill identified gaps. The focus on employability also increases the relevance of the SeP to students as a tool beneficial to their careers beyond university.

Fig 3: Diagram demonstrating the mapping process used to develop SeP Employability Skills (Communication Skill Area)



3.3 Scaffolding of the SeP by key staff

Early trials of the SeP revealed the need to provide students with instruction in reflective writing, and to connect the SeP with career-related outcomes (McCowan, Harper & Hauville, 2005). Key members of the SeP Team including, significantly, Careers & Employment staff, have been instrumental in consistently promoting the SeP to students in this way, and conducting training sessions designed to provide students with the technical and reflective skills required to create a portfolio. By teaching students the STAR L approach to reflective writing (**S**ituation, **T**ask, **A**ction, **R**esult and lessons **L**earnt), the scaffolding enables students to meaningfully and systematically reflect on their experiences. Training sessions also provide an opportunity to contextualise these reflective practices by demonstrating how these reflections, recorded in the SeP, may be utilised in job-seeking activities such as selection criteria writing. The involvement of Careers & Employment staff is particularly effective as students appreciate their 'real world' credibility, which anchors the SeP for the students as a tool to help them find employment, thus stimulating internal motivation for using it.

3.4 Close integration of the SeP into curricula

The close relationship between the SeP Employability Skills and the QUT Graduate Capabilities enables the SeP to be readily embedded into curricula. The SeP can in this way be made relevant

to daily student work, and may be used to facilitate assessment. Such embedding and assessment provides an external motivation for students to engage with the SeP.

3.5 Flexible and realistic policy frameworks and design controls

Policy frameworks and design controls have been developed to allow maximum flexibility for students, whilst being realistic about issues such as privacy, confidentiality and intellectual property. While features such as student control over portfolio viewing access protect students from excessive risk, portfolio development and training also educates students to be careful when sharing information over the Web.

3.6 Successful, targeted internal marketing

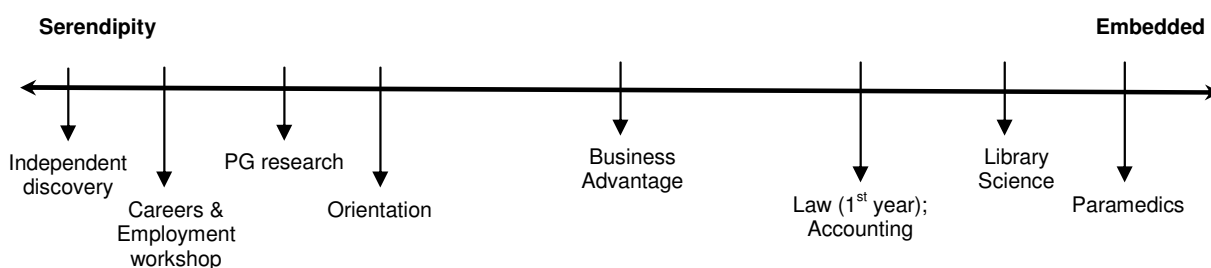
The SeP requires buy-in from academic staff, as they are ideally placed to raise awareness of the SeP amongst students on a daily basis, and to embed the SeP within the curriculum. Early trials of the SeP highlighted that academic staff needed to understand the relevance of the SeP to their specific faculty (McCowan, Harper & Hauville, 2005). To this end, key members of the SeP Team have been dedicated advocates of the SeP, ceaselessly promoting the tool amongst staff with a particular emphasis on the links between the SeP Employability Skills and faculty-specific skill areas.

Peer to peer promotion has been employed extensively to promote the SeP to students, such as by providing examples of existing student portfolios to new students, and via face to face or written student testimonials. Marketing research has shown that the Generation Y cohort typically respond well to such peer to peer promotion (Dotson & Hyatt, 2005; Mininni, 2005). Given the high proportion of Generation Y students currently pursuing university study, this marketing approach is ideal.

4.0 Current Applications of the SeP

Within one hour of the SeP's release in QUT Virtual, and prior to any promotion, the SeP had been used by over 400 students, which speaks to the accessibility of the tool. Within the curriculum, the SeP has been used for diverse purposes, such as to facilitate transition to the workplace, to generate skills development awareness and to manage practicum experiences. At last count there were over 20 different approaches and models used to involve students in the SeP. All Faculties contain SeP activities. The various applications may be viewed as a continuum from serendipitous engagement through to fully embedded use. This continuum is depicted in Fig 4, with a small selection of examples provided.

Fig 4: A continuum of SeP application types at QUT, with selected examples



Independent discovery: It is estimated that approximately 25% of students have serendipitously discovered the SeP through the link in QUT Virtual, promotional materials around the university or word-of-mouth from other students. For example, one student needed to present examples of her work as part of a scholarship application, noticed the SeP link and created a portfolio to be used at the presentation.

Careers & Employment (C&E) workshops: The SeP is mentioned to workshop participants in the full suite of C&E workshops, but no training is supplied.

PG research: The SeP is **optional** for postgraduate research students, but it is **recommended** as a tool in which to record their progress, to assist in their compulsory annual reporting for the university and for individual supervision purposes. Specific skill descriptors have been developed (based on the QUT Postgraduate Capabilities) for this cohort.

Orientation: A one hour introductory session on the SeP is promoted in the Orientation program, but as an optional activity.

Business Advantage: Business Advantage is a **voluntary**, non-award program which provides QUT business students with extra-curricula development opportunities aimed at increasing their professional competencies and improving their competitiveness in the workforce (QUT Faculty of Business, 2006). The Self Assessment module (8 hours over 4 weeks) within the program **wholly integrates** the SeP as a **compulsory** tool by which to encourage students to begin thinking about employability skills, as well as a repository in which to record their relevant university experiences for future recall and use in employment processes.

Law & Accounting: Since 2005 several skill- (as opposed to content-) focused units within the Law and Accounting courses have used the SeP in assessment tasks intended to help students to track their skills development (eg. Legal Research & Writing; Public Relations Writing; Marketing). In these instances, the SeP is a **compulsory** component of the unit, but is **not graded**. Such tracking provides each student with the satisfaction of recognising their progress, and raises awareness about what learning practices are most effective for them. This record provides a good basis for continuing professional development and lifelong learning, in addition to being a useful tool for graduates undergoing employment application processes. It is also interesting to note that recent QUT Accounting graduates have enjoyed the highest employment rates yet attained by the QUT Accounting cohort.

Library Science: The Professional Practice unit within the Masters of Information Management (Library Science) course is specifically designed to prepare students for the transition to professional practice. A key focus of the unit is on reflective practice, with the aim of developing lifelong learning habits and to support continuing professional development. Since 2003, the SeP is a **recommended** tool for the completion of the professional portfolio assessment item which forms a large part of the unit's assessment. While use of the SeP is **optional**, the organising and reflective principles underpinning the SeP are **wholly embedded** within the unit's assessment pieces. The underpinning the SeP is fully embedded within the Recognizing that it takes time to establish habits such as reflective practice, from 2006 the SeP is being introduced to all commencing Library Science students at orientation, with a view to encouraging students to engage in reflective practice over the entire three semester (full time) course and into their professional lives beyond university.

Paramedics: Similarly, the SeP is a **fully embedded, compulsory and graded** component of the Paramedics course, where students use it to record and reflect on every case they attend during clinical placement. This provides students with a unique resource useful in distinguishing themselves from the Queensland Ambulance students, with whom they ultimately compete for jobs. This application has a further benefit, which was not foreseen by the SeP Team. By entering their professional placement experiences into the SeP, students create a 'map' of their placement. Case managers can then use this map to ensure that each student is being exposed to a broad range of experiences, and can intervene if an imbalance is occurring (eg. a large number of cardiac cases and too few paediatrics for paramedic students). In this way, the SeP is actually used to **manage** student professional placements. Similar applications are currently being considered to manage professional placements in the Library Science course and work integrated learning experiences in the faculties of Law, Business, Information Technology and Built Environment and Engineering.

5.0 Lessons learnt

Although formal evaluations of the portfolio are yet to be completed, teaching and development staff working with the SeP have identified several factors which appear to be essential to its successful implementation. These factors fall into two general categories, structural requirements and classroom requirements, which are described below.

5.1 Structural requirements for success

As stated in section 3.0, several structural factors have been critical to the success of the SeP. In summary these factors are:

- A single, university-wide system
- The use of universally applicable and relevant Employability Skills as an holistic organising device
- Scaffolding of the SeP by key staff (training and promotion)
- Close integration of the SeP into curricula
- Flexible and realistic policy frameworks and design controls for the SeP
- Targeted internal marketing to generate buy-in from staff and students

5.2 Requirements for successful application in the classroom

Relevance

An essential aspect of successful implementation is relevance. Students need to see the SeP as relevant and useful in order to be motivated to use it. Such motivation may be established internally or externally. That is, students may be motivated to create a SeP because it is a required piece of assessment (external motivation), or because they see the relevance of the SeP for their own development or career (internal motivation).

The SeP has to date been applied in a wide variety of ways across the university, incorporating both types of motivational approach. An interesting if not surprising observation has been that in the main, where motivation has been primarily internal, students engage with the SeP more deeply and with greater enthusiasm than they do if motivation is primarily external. This is not to say that the two types of motivation are mutually exclusive. For example, Paramedics students are compelled to use the SeP, however the SeP is so comprehensively embedded within the course that students are able to clearly view it as an important tool to support them in their job seeking activities. External motivation of assessment alone is unlikely to provide sufficient motivation for a meaningful engagement with the tool.

Scaffolding

Staff involved with the Business Advantage and Masters of Information Management courses have stressed the importance of a scaffolded approach to implementing the SeP. In this, it is important to acknowledge that the SeP is a process as well as a product, and therefore requires a focus on skill development as well as technical training. Students must also be provided with adequate training in reflective practice to enable them to meaningfully engage with the SeP. The STAR L formula for structuring reflective writing should be introduced to students as early as possible, to provide a key tool for the process of reflective practise.

Integration

It is vital that the SeP be closely connected to the curriculum, such as through regular class activities and goal alignment. The SeP, and the reflective practises underpinning it, initially require consistent support in the form of structured workshops and provision of in-class time for portfolio creation. Teaching staff need to maintain students' focus on the SeP, in order to embed reflective practise into their daily professional behaviours.

Timing

Law teaching staff have stressed the importance of timing the introduction of the SeP appropriately within the curriculum. Where the SeP forms a part of the assessment, a balance needs to be struck between providing students with adequate sessions over a period of weeks in which to properly engage and practice with the SeP, and the students' desire for just-in-time information delivery, which can significantly reduce their interest in the SeP until the assessment item is due.

If the goal of the SeP is to develop reflective practice as an ongoing professional tool, different timing may be required. For example, it may be appropriate to introduce the SeP at the beginning of the course (as was initiated in the Masters of Information Management course in 2006), in the hope that earlier engagement, encouraged through regular workshops and reminders throughout the entire length of the course (3 semesters full time), will better entrench ongoing reflective practise by the time of graduation.

6.0 Past and future considerations

As is inevitable with any project as ambitious as the SeP, a number of unanticipated issues have arisen during the development and implementation phases. Key issues requiring consideration have included:

- Institutional versus free-form expression: While the SeP is a QUT-endorsed product, the project's scale and student-generated nature of the outputs precludes QUT from being able to endorse the content of individual portfolios. This issue has been addressed with a disclaimer on each student portfolio, and the ability for an administrator to access and cancel any portfolios which violate QUT IT protocols (McCowan, Harper & Hauville, 2005).
- Emotional engagement: Maintaining students' emotional engagement with the SeP over time to maximise its use in lifelong learning.
- Relevance and timing: Student feedback indicates that first year students have difficulty understanding the relevance of the SeP, while third year students, understanding its relevance, typically lament that the SeP wasn't introduced to them earlier in their university career.
- Maintaining engagement: Keeping students engaged with their SeP throughout the length of the course and beyond has emerged as a challenge, largely due to high workloads and limited time. The SeP Team believes this issue can be addressed through:
 1. across the course embedding or reminders, tasks etc at each year level
 2. generating student emotional engagement
 3. mentoring: by peers (e.g 3rd year Human Resource management students working with 1st Years); by academics and career mentors (both informally and formally via the QUT career mentoring scheme); and through the SeP team interventions (workshops, marketing, scaffolding).
- Encouraging a lifelong approach: Persuading the students to see the SeP as a lifelong learning tool rather than a short term assessment piece, and to engage in reflective practice as an ongoing professional behaviour.
- Multiple purposes, multiple audiences: Conveying to students that the SeP is about gathering a set of experiences over time that they can use for a variety of purposes e.g. applying for postgraduate study, applying for discipline accreditation, assessment, employment, self awareness, awards, promotion. For each of these audiences, the student will need to present a different subset of these experiences (via the Views function). Using a filing cabinet analogy works well.
- Interoperability: Interoperability with government initiatives such as the Queensland Studies Authority's 'Learning Accounts' (for high school students), and the Federal Government's 'My Future' system (McCowan, C., Harper, W. & Hauville, K., 2006). Interoperability in this case includes both technological compatibility and also consistency in terminology and understanding of various skills and capabilities.

7.0 Conclusion

With 23,000 portfolios in existence as at January 2007, its adoption across all faculties and the numerous (20+) and diverse range of applications to date, the SeP can be viewed as a success. A key factor in this success has been ownership of the tool at the highest levels of the university, which has driven a university-wide approach and a policy-level commitment to the tool.

Another factor essential to this success has been the flexible and collaborative approach taken to the development and implementation of the tool. Early consultation with all faculties and a willingness on the part of the SeP Team to address school, faculty and discipline requests as they arise have ensured widespread uptake. This willingness is matched by the adaptability of the SeP itself, which has enabled the tool to grow over time, responding to newly emerging user requirements (eg. lifelong access, increased storage capacity). This adaptability and responsiveness should ensure that the relevance of the SeP is maintained over time.

The SeP holds a unique position in the history of electronic portfolios by performing all three roles identified by Greenburg (2004): providing structure, enhancing learning and presenting a showcase of skills and experiences. The flexibility of the tool enables a variety of curriculum delivery models, from optional and ungraded through to fully embedded and compulsory, while the accessibility of the SeP also allows for serendipitous engagement with the tool in the absence of curriculum exposure or training. Further, the versatility of the tool enables the SeP to be used for a variety of approaches within the curriculum, from enhancing the transition to the workplace, to the administration of professional placements.

In the six years since its inception, the SeP has been taken from an idea to a successful, versatile tool. High and consistent levels of academic and student support mean the SeP now generates its own momentum, enabling the SeP Team to focus primarily on embedding and refining the tool rather than promotion.

"I think you pay more conscious attention to your learning [when you reflect on it]. Like you make a point of [saying], 'OK, what did I learn from that?' because otherwise... it can slip by you and you don't realise [any] difference before and after prac." 3rd year Education student, QUT, 2005

"The Portfolio [gives] the opportunity for academics to use field, project, clinical and problem-based approaches which cover a wide range of graduate capabilities in one holistic pattern." Dr Al Grenfell, Director of Academic Programs, Science Faculty, QUT, 2003

"I am very excited about this project at QUT as it will be so helpful for graduates in applying for jobs. This will make my role as Graduate Recruitment Manager so much easier because it will improve the quality of graduate applications tremendously." Cherie Herbst, Graduate Recruitment Manager, Queensland Treasury

The SeP Team is confident that this interest, usage and support, along with the unique nature of the SeP, will ensure its continued relevance and success into the future.

7.0 References

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