



## **Developing an ePortfolio for health professional educators: a case study**

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# Chapter XXV

## Developing an ePortfolio for Health Professional Educators: A Case Study

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### **ABSTRACT**

*This chapter describes the development and implementation of an ePortfolio to support the Graduate Certificate in Health Professional Education (GCHPE) at Monash University, Australia. The GCHPE addresses the skills and knowledge of teachers working in health, and encourages the development of a professional approach to teaching practice. The ePortfolio was developed primarily to enable the preparation and sharing of reflective tasks and assessment items constructed from the workplace of the course participants, and to facilitate written peer and tutor feedback. The first interprofessional cohort completed the course in 2003. In this chapter, the development process, evaluation methods, and results of the first year of implementation will be summarized. Problems experienced in the development and implementation process are identified along with recommendations for further action.*

### **INTRODUCTION**

Monash University is the largest university in the Southern Hemisphere, operating out of several campuses in various Australian and

international locations. As such, there is a plethora of organizational and quality assurance challenges in delivering high-quality education to large numbers of students in diverse locations both nationally and internationally. To

achieve the goal of mass-dispersed higher education of high quality, Monash has developed a strategy and set of associated aims. In this, the university statement of purpose is summarized as follows:

*Monash University seeks to improve the human condition by advancing knowledge and fostering creativity. It does so through research and education and a commitment to social justice, human rights and a sustainable environment.* (Monash Directions 2025, 2005)

Monash's strategies are directed toward achieving or enhancing excellence in education, management, research and scholarship, innovation and creativity, diversity, international focus, fairness, engagement, integrity, and self-reliance. One means to achieve excellence in teaching is to use information technology creatively; for example, to increase flexibility in teaching and learning, whether on or off campus. Additionally, staff are encouraged to implement the principles of student-centred, flexible learning, emphasizing the discovery, analysis, and integration of information, problem-solving, communication, and a preparation for a lifetime of learning.

With this strategic vision and pursuit of educational excellence as central tenets of institutional activity, academic staff at Monash are required to be at the forefront of contemporary educational practice. This encompasses "eLearning" and is actively promoted within the organization. Monash actively encourages innovative practice in eLearning via a number of schemes. In the Faculty of Medicine, Nursing, and Health Sciences (the faculty in which the authors are located), an IT committee organizes an annual competitive funding scheme. Under this scheme, staff are invited to submit proposals for funding to develop innovative

educational projects supported by any aspect of information technology. It was under this scheme that the authors received funding to develop the ePortfolio to support teacher training on the GCHPE within our faculty. It was envisaged that this would be a pilot for similar activities in the larger and more complex undergraduate arena across the various disciplines in the faculty.

This chapter describes the ePortfolio and also appraises how successful its development has been. Major obstacles to its development, implementation, and further application and refinement are identified and a variety of practical recommendations made for others considering similar projects. The authors will describe what the tutors were trying to achieve in terms of meeting principles of student-directed learning and how they went about achieving it. Strengths and weaknesses will be outlined from the participants, tutors, and institutional perspective. In addition, the case study will be critically appraised for educational best practice.

## **BACKGROUND**

Traditionally, academics in higher education have not been trained for their teaching role (Laurillard, 2002). This is true of most health professional groups, with the notable exception of the nursing profession. Typically, it has been widely assumed that in-depth content or discipline-specific knowledge is enough to ensure that lecturers are able to pass on their knowledge to future generations of learners. There would be public concern if this were the case for our children's teachers in school, or even if there were widespread recognition in society that students at university are not routinely taught by staff with a formal teaching qualification. However, this is changing now, and an

increasing number of stakeholders in higher education are insisting that academics should develop teaching skills.

In recognition of this, Monash University introduced a policy of compulsory probationary training in teaching and learning in 2000. This policy applies to all new academic staff appointed at half-time fraction or above. A course in higher education is provided for new staff from all disciplines. In recognition of the unique teaching contexts and nature in the health professions, an additional course was developed (the GCHPE) specifically aimed at those who teach in clinical contexts. The aims of both courses are to ensure quality of educational planning, delivery, assessment, and evaluation, and to encourage educational innovation.

There are essential differences between how health professional students engage in learning and teaching activities and how other students undertake their university studies including the importance and, frequently, the presence of the patient. Differences also arise in the very wide variety of settings in which learning takes place. In some other professional courses, clients also maintain a high profile<sup>3/4</sup>teaching, law, and architecture all have their versions of “patient contact.” But when the French, Economics, or History student steps outside the lecture theatre, the lab, or the library, this tends to be for only a small proportion of their time. However, in the health professions, clinically based learning can be as much as 100% of a course or unit of study. Also, in other professional courses, many client settings are public (the classroom or the courtroom), many are dangerous (the building site), and some are intimate (the prison cell, the confessional). But only in the health professions do all three come together<sup>3/4</sup>the operating theatre, the Accident and Emergency Department, the sexual health clinic.

The GCHPE is necessarily aimed at a broad cross-section of the health professions, including medicine, nursing, optometry, paramedic studies, pharmacy, dietetics, physiotherapy, radiography, and psychology. Participants to date have reflected this diversity of occupations. The course uses the capacity of participants to bring experience from their own profession and to compare this experience with the perspectives and approaches of other professional groups. This is one of the key underpinning principles that has guided course development.

Overall there are some global aims for providing the GCHPE, and these include:

- Supporting excellence in undergraduate and postgraduate course development and delivery for the health professions
- Improving the learning experience of students in clinical environments
- Increased scholarship in health professional education, including the adoption of evidence-based decision making and involvement in high-quality research pursuits
- The formal development of career pathways for clinicians wanting to focus on education

The course achieves these aims by developing participants’ skills as health professional teachers in course development, the theoretical underpinnings of teaching and learning, clinical teaching, student assessment, course evaluation, and educational research and development.

There are four core units offered together to help participants develop their expertise in all the major components of a teaching role in health professional education. The GCHPE is usually completed on a part-time basis over one year. The course is taught and assessed via a

series of study days and supported workplace activities. The ePortfolio supports reflection on teaching practice from the workplace and assessments linking theory to practice.

In the past 20 years, courses in education for health professionals have come to be seen as needing different approaches and content from those used to develop other university teachers. This has happened on a worldwide scale. Lecturing and tutorial management are still important, but so are bedside teaching and psychomotor skills development. The health professions are almost unique in their need to blend cognitive skills with the kind of expert artisanship normally associated with portraiture, plumbing, and cabinet making.

In the GCHPE the tutorial team also strives to prepare participants for a world of work that is changing rapidly; where supervision, teamwork, multi- and inter-professional working, and learning are becoming more common; and where governments and patients are demanding an increase in seamless health care and in effective communication among professionals providing that care.

The philosophy of the GCHPE reflects the need to be eclectic and pragmatic in the educational theories and practices that we employ. Health profession courses across the world currently employ radically different techniques, from total lecturing to total self-directed learning. For health professional teachers, educational proficiency involves being comfortable using a range of techniques and being able to engage colleagues and students in a rapidly expanding horizon.

It is virtually inconceivable that a course of this nature could exist without demonstrating at least some component of eLearning as an example of contemporary educational practice. It was with this in mind that the application was made to fund the development of an ePortfolio.

## **CASE STUDY: AN ePORTFOLIO IN A POSTGRADUATE COURSE IN HEALTH PROFESSIONAL EDUCATION**

The initial development focus for the ePortfolio was to support an interprofessional course for any teacher in the health professions. The course has run as a one-year, part-time program since 2003, has four core units, and is approved by Monash University for probationary training. However, some underlying assumptions in the development process ensured that the ePortfolio could be developed beyond this primary focus to support a number of other educational initiatives across the faculty.

The ePortfolio was developed to enable reflection and feedback to occur wherever our course participants teach (i.e., in a geographically dispersed participant cohort). This is common at both undergraduate and postgraduate levels, where learning is based in diverse and dispersed clinical sites. Other goals in developing the ePortfolio included:

- To provide an example of contemporary educational practice for clinical teachers;
- To integrate the assessment of professional teaching behaviour into all units of the course
- To enable the preparation, sharing, and submission of assessment items in the actual workplace of the course participants and to facilitate self-, peer, and tutor feedback

Assessment tasks inserted into the ePortfolio incorporate formative and summative tasks throughout the four course units. Via the ePortfolio, course participants can immediately record written reflections on their clinical teaching practices, retrieve and collate reflections

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for assessment submission, gain access to peers' work, and receive feedback. The ePortfolio has participant, tutor, and administrator views, and the functionality in each view will be described.

For course participants there are two areas within the ePortfolio. The first is a private space in which a reflective journal of teaching activities can be maintained, and the other is a dedicated space for assessment planning, submission, and feedback. It is acknowledged that individuals may have other mechanisms which they prefer to adopt or maintain reflective journal writing, and so this is not an essential component of course participation. For participants, the ePortfolio activities and features are summarized as follows:

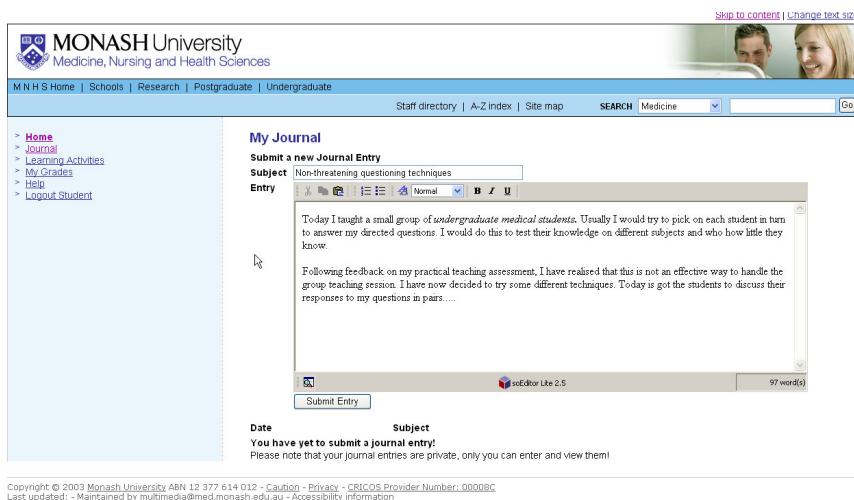
- Password-protected access to a secure Web-based learning environment
- Personal journal space to document teaching experiences in the clinical environment (this area is not accessible to tutors and participants all sign an "Acceptable Use of Information Technology Facilities

Policy" to prevent inappropriate use of this secure area)

- Space for submission of assessments to share with tutorial group members, tutors, or the whole cohort prior to submission if desired;
- Opportunities to exchange views with other participants
- Access to Web-based feedback (this includes receiving feedback themselves on their assessment items, but also the opportunity to develop their own skills in written feedback with their colleagues; it also includes their assessment grades)

For tutors and administrators, the ePortfolio provides them with their own unique online environment. Tutors are provided with "any-time, anyplace" access to assessment submissions. They also have the opportunity to mark work and provide written feedback in this environment. Prior to submission deadlines for assessment tasks, it is the participants who control whether access is provided to their own personal tutor or not.

Figure 1.



For administrators, it is possible to create simple and flexible assessment tasks in text-based format. They can allocate course participants and tutors to units of study and to tutorial groups, and this information is picked up from the university central records system for tutors and participants. Within the administrative arena, records are maintained of participants' assessment submissions, and tutors' feedback and marking progress. E-mail reminders of impending assessment deadlines are generated via the system.

The development of the ePortfolio represented collaboration between academic staff and the faculty Web team. A form of electronic learning was also considered essential for a course of this nature to demonstrate contemporary educational practice and to role model innovative teaching practice. In summary, the ePortfolio was developed to support learning on a postgraduate course for health professional teachers and to demonstrate best educational practice, act as an initial step in the development of a managed learning environment to support the whole course, and be a pilot for a similar need in the undergraduate medical program.

The faculty innovative teaching grant, which supported the development, paid for Web design and also an external consultancy visit from an expert in the field of multimedia in education to advise on design, process, and implementation issues. The development process adopted an iterative format with regular meetings between academic and Web design staff. Commercially available platforms were considered but did not appear to support the educational objectives required. A small academic team worked collaboratively with a Web design group to produce a specialized electronic system. This system is written in ColdFusion MX and hosted on a Microsoft SQL Server 2000. Administrator training was provided for academic staff, and the ePortfolio was introduced in Semester 1 of 2003. The infrastructure to support the innovation was also provided by the faculty.

Assessment tasks include identification and analysis of critical incidents. These incidents involve teaching in the clinical environment as part of the participants' work experience. The tasks also include opportunities to practice written feedback, which the course identifies as an important skill within a teaching role.

Figure 2.

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> Home  
> Journal  
> Learning Activities  
> My Grades  
> Help  
> Logout Student

### My Learning Activity

**Learning Activity Details**  
**Unit** MEU0003 - 2005  
**Tutorial Group** Group A: Debbie Kiegaldie  
**Learning Activity Details** Part B - Description of an assessment in your practice  
Describe an assessment currently in use or planned for your own teaching environment or teaching context. Include details of historical development, purpose, rationale, student acceptability, staff attitudes, and anything else you think relevant. If you do not currently engage in assessment, choose an assessment that is commonly used in your field.

**Word count:** 500 - 750 words  
**Marks available:** 0 - 15

We would like to encourage you to **share** your assessment with members of your group. Also access the submissions of your peers to compare different approaches across a variety of professional groups.

**Experience**  
**Subject**  
**Description**

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The ePortfolio was designed to embrace person-centred learning principles (Rogers & Freiberg, 1994). As an example, participants are helped to achieve results they appreciate and consider worthwhile by allowing them to select assessment tasks that are closely aligned with their working practice. The fact that a Web-based tool is available also means that there can be a consistent emphasis on the workplace, as tasks can be completed and reflections recorded as and when they occur. The provision of a completely personal journal space was designed to enhance trust between teacher and participant. Participants are able to determine and control the level of access that was given to peers and tutors during preparation of assignments. In this way, “work-in-progress” can be shared between peers and with tutors. This feature, together with the facility to make ongoing entries and revisions prior to the assessment deadline, was designed to aid reflection and promote deeper levels of thinking.

In the first iteration of the ePortfolio, participants were very closely involved with piloting of and feedback on the system. While sometimes frustrating to be involved in an educational pilot (and the inevitable troubleshooting that is associated), participants did find this aspect stimulating and, as teachers themselves, welcomed the opportunity to engage with an example of contemporary educational practice.

Person-centred learning principles were also reflected in the opportunities for self- and peer review and revision prior to submission of items for assessment. The immediate access to participants’ work by tutors also provides the potential for immediacy in feedback.

The person-centred learning principles embodied in the ePortfolio were supported in other aspects of the course (e.g., by the provision of formal teaching on ways of giving effective feedback). The nature of the feedback provided from peers and tutors, including the use of

“non-final vocabulary” and of “authentic” assessments, are in line with recommendations for assessment in professional courses (Boud, 1995).

In data obtained at the conclusion of the first year of the course, participants reported that the ePortfolio was relatively easy to use, although they expressed mixed levels of confidence in the technology (e.g., lack of trust that work submitted online will be received successfully by teaching staff, issues regarding timing-out of sessions, and loss of text formatting). Their own technical abilities were found to be highly varied, and subsequently skills assessment, remedial training, and peer tutoring have been introduced to address this (Lawson, Bearman, Jolly, Kiegaldie, & Roberts, 2004).

For tutors, one of the major benefits identified in evaluation was the easy electronic access to all student assessments. Conversely, this can also be seen as a disadvantage, as some models of eModeration can be intrusive, interfere with work-life balance for tutors, and be difficult to limit (Salmon, 2000). Also, rather perversely, as a group of tutors, we have found that “anytime” access to participants’ assignments has prevented us from being as efficient as previously in our marking habits!

Another advantage identified was the reduction in paper and the central repository of course information. Confidentiality was also thought to be easier to maintain in a paper-free environment. Opportunities for cross-marking and quality control mechanisms for marking were facilitated by the introduction of the electronic system. Finally tutors appreciated having a central repository of assessment information, marking criteria, and participant instructions, including milestones (Lawson, Kiegaldie, & Jolly, 2004).

From the Web team’s perspective, what worked well was the close collaboration with the academic team and the use of a develop-



ment site for ongoing piloting and refinement. However, improvements in participants' preparation for engagement in learning activities in a Web-based environment, in the ability to deal effectively with participants online, and in the provision of clearer instructions for users were needed. An online FAQ section has now been added and is now provided in the course handbook.

From tutor and participants' perspective, what worked well was the experience of an educational innovation and remote access at any time. What needed alteration was a technical error leading to multiple reminders of due dates for work and issues with loss of work and formatting. There were two outstanding issues for action, one technical and the other academic. The technical issue related to the inability to extend deadlines on an individual participant-negotiated basis. Currently all participants are "locked out" of assignments on a single due date. The academic issue concerned the minimal use by participants of the personal journal space. Some participants reported that this space acted as a prompt for them to record their reflections in other formats (either notebooks or simple Word documents), but others did not appear to be engaging at all in the reflective component of the course as anticipated.

A number of educational limitations and institutional barriers were also identified in the implementation of the ePortfolio. For example, the assessments in the ePortfolio can only ever assess professional attributes at a self-reported level rather than at performance-based level in the actual workplace (Miller, 1990). It would be advantageous to shift from the assessment of self-reported professional behaviour for participants to actual observation of practice. This could not be achieved with the confines of the ePortfolio.

At an institutional level, we have been unable, as yet, to move to wider-scale implemen-

tation in other courses. This is largely due to a funding mechanism with restricted capacity to support the small ongoing development that would be required to extend the use of the ePortfolio into other courses and disciplines. There is also a lack of willingness to share ideas with external partners due to issues of intellectual property.

## **FURTHER DEVELOPMENTS, CONCLUSIONS, AND RECOMMENDATIONS**

One of the major lessons learned from the project was the need for close cooperation and liaison among tutors, Web designers, and users or course participants in the piloting stages. The ePortfolio achieved its goal of demonstrating contemporary educational practice. It was also possible to record teaching activities in the workplace, and to encourage the development of reflective skills and also those of providing written feedback. The ability for students to review draft work by their peers was thought to be instrumental in developing both of these skills.

Further work is needed to clarify instructions to participants and to improve the baseline assessment of participants' skills in use of Web-based resources and IT in general. Training in use of IT needs to be incorporated in the course delivery and individually tailored to need at least at the current time. A statistics server has been linked to the ePortfolio site to enable more objective evaluation of participant use, and in the future the ePortfolio will be embedded in a networked learning environment. It is also being explored currently for the potential to plug in seamlessly to other commercial platforms and for use in an undergraduate group of students where the numbers will be increased by a factor of approximately 10. Other refine-

ments are required to allow the assessment tasks to be more person centred. For example, the setting of individually negotiated deadlines for tasks would be beneficial.

In summary, an ePortfolio in a graduate course in health professional education is one way in which reflection and feedback skills can be fostered. Despite initial apprehensions from the participant group, it can be used effectively as an adjunct to other more traditional forms of assessment. In general, including some components of the activities of the ePortfolio in the summative course assessment was important to provide a clear indication to the participants that the demonstration of appropriate professional behaviours in relation to their teaching role is as important as the acquisition of teaching skills and theoretical knowledge. A final observation from the development of this ePortfolio is that the process for educational innovation supported by IT needs to be driven by people who understand learning and pedagogical principles.

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## KEY TERMS

**Authentic Assessment:** A form of assessment in which students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills. Student performance on a task is typically scored on a rubric to determine how successfully the student has met specific standards. The concept of 'model, practice, feedback' in which students know what excellent performance is and are guided to practice an entire concept rather than bits and pieces in preparation for eventual understanding. A variety of techniques can be employed in authentic assessment. The goal of authentic assessment is to gather evidence that students can use knowledge effectively and be able to critique their own efforts.

**Bedside Teaching:** Teaching and learning that takes place with a patient or in the vicinity of a clinical facility. In general this term covers contact with all patients and not just those that

are actually bed-ridden, for example those in a general practice surgery, in outpatient or ambulatory settings, or visited at home.

**Cognitive Skills:** Mental abilities that help us process external stimuli.

**eLearning:** The delivery of a learning, training, or education program by electronic means. E-learning involves the use of a computer or electronic device to provide training, educational, or learning material (from [www.intelera.com/glossary.htm](http://www.intelera.com/glossary.htm)).

**ePortfolio:** A portfolio based on electronic media. It consists of a personal digital record containing information such as personal profile, and collection of assessments, assignments, or other achievements; personal reflections on those tasks; and other information that relates to the owner of the ePortfolio and the people (peers, other students, teachers) and organisations to whom the owner has granted access.

**Information Technology (IT):** A term that encompasses all forms of technology used to create, store, exchange, and utilize information in its various forms including business data, conversations, still images, motion pictures, and multimedia presentations.

**Non-Final Vocabulary:** This term is coined from Rorty's view that there are no absolutes by which individuals can be assessed; for example, nothing is ever 'right' or 'wrong'—it all

depends on perspective. Attempting to describe students' work using 'non-final' vocabulary is both a challenge and potentially very beneficial to students because it validates their work, but can contrast it with other perspectives and value systems without pejorative implications.

**Psychomotor Skills:** Physical actions or activities (body movements) that people perform which involve coordinating perceptions and cognitive processes with that action—for example surgery, particularly laparoscopic surgery.

**Reflection:** Takes place when the learner observes, interprets, and reflects upon his or her own learning or clinical practice experience. This reflection would include the who, what, where, and why of the learning experience and an attempt to understand how that experience can best be used to foster learning.

**Student-Centred Learning:** An approach to education focusing on the needs of the students, rather than those of others involved in the educational process, such as teachers and administrators. This approach has many implications for the design of curriculum, course content, and interactivity of courses. For instance, a student-centred course may address the needs of a particular student audience to learn how to solve some job-related problems (from Wikipedia, the free encyclopaedia).