

## The professional electronic portfolio project: The production process

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### *Abstract*

*In November 2004 a group of eleven educational leaders from educational support, secondary and primary schools in Perth, Western Australia, were selected to take part in a trial of an innovative software package designed by the first author of this paper, to facilitate the creation of a professional electronic portfolio. A leadership framework developed for the Department of Education and Training, Western Australia (DETWA) with a consortium of academics, (Wildy & Loudon, 2002) underpinned the portfolio. Several competencies and characteristics of school leaders guided the structure of the portfolio. The collection of authentic artefacts to demonstrate these competencies and characteristics and integrate them into the professional electronic portfolio characterised phase 2 of the study. This part of the study investigated the production phase of the trial and participant perceptions as to how an electronic portfolio promoted professionalism and accountability in their personal educational leadership responsibilities. The project followed aspirant leaders as they underwent the process of constructing an e-portfolio over six months, in an effort to understand the efficacy of an electronic portfolio as a medium for demonstrating leadership, for improving leadership and as a mechanism for self-reflection and analysis. This paper reports a work in progress.*

### **Background**

Pressure is increasing in Australian schools to respond to rapidly changing conditions brought about by improvements in technology and a shift in emphasis towards a more pluralistic and accountable approach to administration. School principals are being asked to demonstrate how they are responding to these challenges and to account for the ways in which they are improving their governance to meet the enormous demands being made upon them. Brown and Irby (2001) emphasised the complex, multi-faceted responsibilities of educational leadership and studies by Joyce and Showers (1995) demonstrated the need to develop continuously as professionals and instructional leaders to optimise learning conditions for student success. As a consequence, the use of technology as a means of demonstrating leadership has led to an interest in developing what are described as electronic portfolios. Brown and Irby (2001, p. 2) define a principal portfolio as a:

Collection of thoughtfully selected exhibits or artefacts and reflections indicative of an individual's experiences and ability to lead and of the individual's progress toward and/or attainment of established goals or criteria.

Electronic portfolios, often known as digital portfolios, web-folios, multi-media portfolios and e-folios, contain similar artefacts to the traditional paper based portfolio; however the essential difference is that artefacts are presented in a digital format (Kilbane & Milman, 2003).

The Commonwealth Department of Education, Science and Training released a document entitled Raising Standards: A Proposal for the Development of an ICT Competency Framework (2001), which made a number of key recommendations pertinent to the development of an electronic portfolio. It argued that the development of a new performance management tool and professional development model using an Information and Communications Technology (ICT) competency framework is required within the Australian school education system. More specifically the paper identified educational administrators as needing to reflect contemporary leadership in their responses to new technology and new educational ideologies through the use of ICT, stressing that achievement of explicit ICT standards is mandatory at such a leadership level. It expounded the virtues of critical reflection and self-analysis that were also advocated by the OECD Quality in Teaching Report (CERI, 1994) emphasising improvement in implicit lifelong learning and practice. These are characteristics, which can possibly be exemplified by an electronic portfolio approach to accountability. School principals are being urged to embrace new technologies that cater for performance management, professional development and the imminent mandate for accreditation. A carefully constructed union between ICT and an accountability portfolio has the potential to provide for the selection, recruitment and promotion of educational leaders.

The National Education Performance Monitoring Taskforce (NEMPT) report (MYCEETA, 2000, p. 45) which noted the low skill base of teachers and educational leaders in the use of ICT, recommended that:

A regime should be established in school systems in which ICT skills are expected and rewarded through standards for hiring, evaluating and promoting teachers. Teacher and leadership ICT standards should be incorporated into human resource management processes within education authorities and individual schools, including recruitment and promotion.

Amidst many reports and strategic plans to have been produced recently on improving education within Australia, common themes have emerged which have placed emphasis on efficient and good management practices, devolution of responsibility (Dellar & Giddings, 1997), emphasis on equity and excellence, the incorporation of national priorities and more centralised management structures (Dellar & Giddings, 1997). As a result of this Australia-wide systemic restructuring process, school level responsibility for compliance with educational policies lies with the principal, who is directly accountable to a district director or regional head. In Western Australia the principals' role as expressed in the Plan for Government School Education 1998–2000 (EDWA, 1997) is pivotal with their responsibilities becoming more complex and demanding. Furthermore, principals are expected to embrace contemporary practices of leadership to enhance their organisational capacity and create a professional community characterised by shared purpose, collaborative activity and collective responsibility (Hargreaves & Fullan, 1998; Newman & Wehlage, 1995). When implemented effectively, portfolio processes have the capability to foster a more authentic collaborative environment (Dixon & Dixon, 2003).

Within DETWA, communication between central office, district offices and schools is strongly influenced by electronic media. ICT adoption and usage issues are having an enormous influence on leadership and administration. Thus a gradual shift towards an electronic approach to communicate competencies between line management and administrators seems inevitable. The focus of any approach to understanding this must be on defining the context, goals and purpose of the portfolio, identifying the resources and hardware necessary and available for developing an electronic version and providing the training for the skill required to make one (Barrett, 2000).

By creating web portfolios, which include not only implicit links by active hyperlinks between artefacts and reflections, authors in effect synthesise the products of their learning—both for themselves and for their audiences.

(Kimball, 2003, p. xvii)

Electronic portfolios (e-folios), although still very early in their history, are claimed to have some distinct advantages over their paper counterparts. These include: the fact that e-folios are portable and transferable and therefore more immediate and accessible. This is especially true if they are published in HTML or in some other web-based format and stored on an accessible database.

E-folios enable audio and visual representations and thus have the potential for a more three dimensional representation of competencies such as interpersonal skills. This has implications for e-folios being an effective way of showcasing and marketing work and the development of leadership skills. In particular they can provide direct evidence through exhibits and artefacts of suitability for selection in promotion and employment before face-to-face interviews are arranged.

E-folios, it can be plausibly argued, are flexible and adaptable tools that can be modified to suit whatever set of competencies or personal preferences are required at whatever level. Participation in the actual process of creating a digital portfolio builds self-esteem and self-confidence in teachers' own professional abilities. Storage of data is both simple and secure. Updating and developing is relatively simple. Reproducing digital portfolios is simple and inexpensive.

Most recently DETWA (2005) published on its website the Framework for Educational Leaders, which outlined the specific competencies a principal must demonstrate. It emphasised the personal characteristics, attributes, values and knowledge a principal should possess, underpinned by the studies of Wildy & Loudon (2002). The leadership framework also outlined the parameters of school leadership as a series of comprehensively delineated competencies, within which specific behaviours expected of an educational leader were articulated. Furthermore a sample pro-forma to be signed by principals in conjunction with their line managers, which agreed to demonstrate these characteristics, has been posted. Logically, the development of an e-folio has the capacity to be an efficient manner in which to organise and showcase the achievement or the development towards achievement of the required attributes and competencies.

In summary, the study of the development of electronic leadership portfolios has attempted to come to grips with the potential or otherwise of the e-folio to enhance and streamline the professional development of educational leaders. Close observation of participants in the portfolio trial during the process of creating a portfolio also provided a window into the personal thoughts and processes that emerged as a result of their efforts.

## Methodology

After participants had been provided with a full day training program, they were followed up over the next six months, by regular telephone, e-mail communication and two personal visits during February 2005 and April 2005. During both the personal visits, which lasted an average of just over an hour, the trial inductees were provided with technical support, encouragement and positive reinforcement as to the extent of their progress. A semi-structured set of questions concerning the process and difficulties they had with the portfolio were discussed. Copies were made of the portfolio for analysis and comparison at both meetings. Notes about each discussion were made and kept for analysis. An exit survey based on the original validated instrument, asking a series of closed questions measured on a four point Likert scale and a series of open questions asking for rich qualitative data was administered. The instrument sought information under seven broad categories; Training and Preparation, Goals and Objectives, Perceived Value, Perceived Effects, Further Applications, Ethical Issues and E-portfolio Ease of Use. The results were analysed using SPSS to ascertain descriptive statistics from participant perceptions and Content Analysis that utilised the inter-rater reliability process recommended by Huck, Cormier and Bounds (1975), to determine common themes and concerns articulated by participants.

## Results and discussion

The trial group began with eleven volunteer aspirant leaders. One dropped out of the trial on personal grounds in early February. Two drifted away from the trial for a number of personal and professional reasons during the course of 2005. Eight participants completed the trial. Of the eight who saw the portfolio through, five finished the portfolio with a high degree of achievement, two finished with a moderate degree of achievement and one made cursory progress. Achievement was measured in terms of the number of tasks completed, the amount of information provided, the clarity of the organisation of the portfolio, the technical competence with which the artefacts were produced and inserted and personal perceptions of completion.

### *Comparison of perceptions*

Mean scores from the Training phase gleaned from the survey instrument were compared with mean scores from the survey instrument at the completion of the project integrating the seven main categories; training and preparation, goals and objectives, perceived value, further application, ethical issues and ease of use, informed by a total of 57 variables. Although the sample is too small to draw conclusions from the descriptive statistics alone, the results triangulated with the qualitative data tended to strongly support the trends reported.

*Table 1: Mean scores during training phase compared to mean scores after completion of portfolio*

<b>Variable categories</b>	<b>Mean score after training</b>	<b>Mean score after completion</b>
Training and preparation	3.331	3.411
Goals and objectives	3.347	3.433
Perceived value	3.474	3.309
Perceived effects	3.101	2.875
Further application	2.981	3.100
Ethical issues	3.145	3.401
Ease of use	3.040	3.229

### *Training and preparation*

The training and preparation phase was perceived more positively as the project came to its conclusion, with a small jump in mean perception results. This helps to provide support for the conclusion that the meeting with other participants helped clarify the requirements of the portfolio, that the purpose of the project was made clear and that participants were personally prepared for the creation of the portfolio. Training was adequate, resource provision was adequate, goals were clearly articulated and there were not unexpected surprises. Regular contact and meetings with the researcher helped to increase participant confidence in the process. The biggest jump in perception was that the training and use of the leadership framework improved personal understanding of the characteristics DETWA required of its educational leaders.

### **Goals and objectives**

The goals and objectives of the portfolio were perceived in an improving light as the project progressed. Familiarity with the leadership framework and its underpinning characteristics which included attributes, values, knowledge, policy and direction, teaching and learning, staff, partnerships and resources made the task of collecting and organising artefacts both easier and more rewarding for most areas. All respondents agreed that the self-reflective questions were useful. All respondents agreed that their personal narratives were useful, though several doubted their own story telling ability.

### **Perceived value**

Reports as to the perceived value of the portfolio ranged a great deal across the respondents, from very positive to mildly negative. Most people agreed that the time spent on their portfolio was worthwhile; interestingly the more time individuals spent on their portfolio, the more likely they were to be positive towards its value. Whilst most people saw the self-reflective and self-analysis elements of the portfolio as very positive and that the process facilitated continuous professional learning, there was a more lukewarm response to the perception that participating in the portfolio project enhanced professional practice and leadership. Several people saw the portfolio as a valuable line-management tool, whilst others were not so sure and preferred current performance management processes. All agreed that the portfolio became a valuable personal resource; once again the more time individuals put into the portfolio (more than 20 hours was a critical threshold), the more valuable the resource was perceived.

### **Perceived effects**

Aspirant leaders in the project perceived the effects of the portfolio on their day-to-day professional responsibilities as less effective than they first thought during the training phase, with a slight but significant drop in mean scores from original responses to exit responses. Again, responses varied widely, but predictably, the more effort reported to have been put into the project the more positive the responses. Generally speaking, the portfolio did not seem to change planning practices, help shape school culture, facilitate organisational change nor streamline administrative responsibilities. These ambitious qualities being sought in the survey instrument are long-term effects that the six-month trial period could not in retrospect hope to capture. However perceptions that the portfolio improved leadership helped create a vision for the future and facilitated the creation of a leadership philosophy were encouraging results.

### **Further applications**

The results of the perceptions of the further applications category demonstrated an improved positive slant, most especially in the leadership group wanting their own staff to create an e-portfolio, though not necessarily in the form the current trial portfolio software is organised. Every respondent was very positive about the fact that the DETWA promotion selection criterion was included in the project, with five of the respondents using this to advantage by submitting an application for promotion in the recent round. More people wanted to see an assessment rubric included in the portfolio towards the end of the trial than at the beginning. Most indicated an ongoing commitment to continue with their portfolio.

### **Ethical issues**

As for ethics concerns all of the participants were strongly confident that the personal nature of their professional portfolio was in trustworthy hands and that privacy was not a contentious issue. They were therefore willing to be honest with their thoughts and reflections. The relationship formed between participants and the researcher was reported as very positive on both sides. Nearly everybody agreed that the portfolio was not just a trend that would fade away.

### **Ease of use**

The perceptions as to the ease of use of the portfolio were, predictably, improved from the beginning of the trial to the end. A number of improvements have been suggested by participants, which will inform the next version of the software in an attempt to improve navigability, remove some of the “bugs” and to make the interaction more intuitive. A factor highlighted by the pilot is the lack of ICT expertise from several of the participants. The people most positive about the project were also the most ICT competent.

### Open-ended responses

The survey instrument, supplemented with information gathered during the production phase by regular visits, telephone and e-mail communication provided some rich information as to the effectiveness of the portfolio, its shortcomings and a number of other important issues, many of which reinforced original perceptions. Table 2 identifies the comments made by the sample that reflect positive perceptions.

*Table 2: Positive perceptions*

Useful as a reflective tool
Useful for self-analysis
Provided a resource for promotion application
Provided information on personal strengths and weaknesses
Improved ICT skills
Provided a greater understanding of the Leadership framework
Helped in goal setting and planning
Helped identify management shortcomings

Most of the positive comments were common to all participants, who provided some excellent feedback as to where the trial had been successful, indicating where strengths can be used to provide incentives for others to take up a portfolio and indicating where improvements could be made for future generations of users. The most important perception, reported by all respondents engendered the very positive impact of the reflective process by the portfolio. Table 3 identifies the negative perceptions of the sample.

*Table 3: Negative perceptions*

Very time consuming
Navigation problems
Lack of status of the portfolio

All of the people in the trial found that the process was time consuming. However, the more time spent on creating the portfolio, the more positive people were about the entire portfolio. Navigation problems are acknowledged and being addressed according to the feedback to ensure easier and smoother interface and more intuitive handling. Table 4 reflects a variety of other perceptions held by the sample.

*Table 4: Other perceptions*

I feel this is heading in the right direction
Fine tuning and more trialling should make it a very useful resource for seeking promotion
We should have met one more time with the trial group
The opportunity to meet with Robert was helpful and gave guidance as to where I was heading
Useful as a reflective/learning tool
May not be useful if teachers are not looking for promotion
Motivating
I found it very beneficial
This is definitely the tool for me

## Conclusions and recommendations

Overall, the trial can be considered to have achieved considerable success. A larger roll out can now be commenced with the addition of new improved software. The software upgrade has been costed at between \$8,000 and \$10,000 for which funding must be sought. It is recommended that a joint application for an Australian Research Council (ARC) linkage grant between Curtin University of Technology and DETWA be instigated to get this funding. Failing this, other avenues for grants to fund the project should be investigated.

The new portfolio group should be increased to between fifteen and twenty people. The group should be relatively homogeneous; secondary and primary groups should be separate and level 3 should be separated from level 4, etc. to facilitate the differences in the motivation, completion rate, style and quality noted between the primary and the secondary participants as well as between levels.

Notwithstanding the separation of groups, at the request of individual participants, a higher ranked and experienced educational leader who is a willing mentor could be assigned to assist the early stage leaders in their quest for improvement and in support of their efforts in creating a portfolio. This could be the current principal or deputy principal of the school to which the aspirant is assigned, who could provide assistance, possible time release and take advantage of the professional development opportunities and resources for the rest of the staff, which flows from the process.

In keeping with comments from the trial group the new group should meet on a regular monthly basis to facilitate the need for regular contact with colleagues in a collegial and collaborative approach to the portfolio construction. This would overcome some of the feelings of isolation reported by the first group, provide immediate feedback to participants as to their progress and bring to light whatever ICT training is necessary to bring them up to speed in creating their portfolio as well as providing valuable insights to the other leadership styles and approaches of their colleagues. The use of discussion groups and computer-mediated communication to support educators grappling with the complexities of creating a competency-based portfolio is also recommended.

Furthermore, it is recommended the creation of a constructivist study centre model for collaborative colleagues working to improve their leadership be implemented. This should be underpinned by recognition of participant efforts for accreditation towards an appropriate higher degree through the tertiary institutions (e.g. Masters Degree in Educational Studies).

It is recommended to trial the idea that aspirant leaders applying for promotional positions be entitled to use an electronic copy of their e-portfolio as their first round application. This will enable adjudicators to quickly make decisions as to whether or not the applicant warrants further investigation for promotional purposes, in an organised standardised fashion. Furthermore, during the panel interview process, the e-portfolio connected to a projector and in abbreviated presentation form (5–10 minutes) could be considered as a tool for applicants to showcase their ability. This will have the effect of allowing applicants to settle into the panel process and to showcase through their collection of authentic artefacts, some of the key skills and achievements, which they consider pertinent to the application. Moreover, it will provide a further incentive for educational leaders and aspiring leaders to embrace the portfolio technology.

One of the key findings of this project is the need to create a portfolio culture in schools that begins with pre-service teachers. Curtin University is currently trialling e-portfolios, which link into the Competency Framework for teachers. It is recommended that DETWA in conjunction with Curtin University in light of the findings from the current portfolio study, investigate the creation of a portfolio along similar lines that can be used to develop teacher competency standards for phases 1, 2 and 3. This has major positive ramifications for the accreditation process for teacher registration in the near future.

It is recommended that the researcher in collaboration with the Leadership Centre, provide a program of awareness raising and professional development for principals in individual clusters or districts, which supplements the training given by the Leadership Centre about the leadership framework. This could provide information learned from the trial, with the aim to develop an e-portfolio culture for interested teaching and administrative staff, thereby improving the ICT skills of schools.

It is recommended that all of the educational leaders of the current study be followed up in six months time to ascertain what further developments, progress or otherwise result from their participation in the trial which would be reported in a future paper.

### Phase 3 of the trial

Phase three of the trial, a thorough analysis of each of the portfolios presented, will attempt to map and analyse the complexities and nuances of educational leadership as they emerge from the study of the process that the cohort undertook to create their portfolio.

Phase three will attempt to develop a conceptual framework for creating an electronic leadership portfolio system. The undertaking will progress towards identifying a guiding set of principles and a set of thoroughly tested resources for the effective implementation of an electronic leadership portfolio that facilitates professional development and is modified by evaluation strategies with relation to the portfolio of practising educational leaders. It will identify the processes and culture of portfolio development in an attempt to capture a glimpse of contemporary school leadership and reflect current and emergent tensions, such as the accountability, efficiency and participation conflicts inherent in the collaborative nature of modern educational leadership (Forster, Loudon, Wildy, & Wallace, 2003).

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