

## **Paper DIX05039**

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### **“The Professional Electronic Portfolio Project.”**

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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 place in a trial of an innovative software package designed by the authors, 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 & Louden 2002) underpins the portfolio. Several competencies and characteristics of school leaders guide the structure of the portfolio. The collection of authentic artefacts to demonstrate these competencies and characteristics and integrate them into the professional electronic portfolio will follow the training phase.*

*Participants were provided with a full day training program during which they were introduced to the conceptual framework underpinning the portfolio and the technology involved to create it. They were provided with a context in which the portfolio could be developed. Each participant was provided with the software package, given an overview and then the opportunity to explore and experiment with the components. They were provided with technological assistance in order to enhance the development of their professional portfolio.*

*This study investigates the training phase of the trial and participant perceptions of how an electronic portfolio promotes professionalism and accountability in educational leadership. It will follow the development of aspirant leaders as they undergo 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. It also attempts to bring to light the complexity and multi-faceted issues of school leadership and emergent trends that arise from within the portfolio making process as well as highlighting the effectiveness of information and communication technology (ICT) as a tool for modern leaders. This paper provides an overview of the first stage.*

**Key Words:** *Electronic Portfolios, ICT and Educational Leadership, Innovative Teaching and Learning Technologies*

## Background

The Western Australian Department of Education and Training developed its Leadership Centre in partnership with several associations of school administrators in

1998. The mission of the partnership was to establish and foster “the growth of leadership in a school centre and to encourage the sharing of the knowledge, skills, attitudes and values of leadership between leaders” (Leadership Centre Website, 2004). Furthermore the leadership centre positioned itself with three strategic broad aims:

- Developing a contemporary understanding for the profession of school leadership
- Raising the professional standards of school leadership
- Provision of opportunities for professional growth and development for government school leaders.

As a consequence of collaboration between the Leadership Centre, a number of academic researchers in two WA universities, the Professional Associations, the Australian Education Union and in line with its broad strategic aims, the organisation developed a leadership framework underpinned by a range of leadership competencies and standards (Fig. 1). The framework adopted a reflective practice model, which aimed to develop personal assessment and continuous growth in educational leadership.

Underpinning this model were four major assumptions; first that the professional values, knowledge, attributes and skills of educational leadership are essential, generic and applicable to any educational context; second, that the competencies are a result of rigorous research, and represent one way of describing effective leadership within W.A.; third that competencies are interrelated, complex and difficult to

describe and serve to highlight key elements of effective leadership without privileging one over another; fourth that the conceptual basis for the construction of the framework is in organisational change and the facilitation of empowerment by educational leadership in the wider school community, (Wildy & Loudon, 2002).

The model integrates the characteristics and competencies of educational leaders through context, linking performance standards, facilitating self-reflection that ultimately leads to improvement in student outcomes in a linear structure. The cyclical link between leadership performance and self-reflection whilst intrinsic and intuitive is not made explicit in the current model.

The subdivision of leadership characteristics into three areas (Attributes, Values and Knowledge) enables specific and comprehensive categories of recognisably simple and explicit ideals of which an educational leader should have command. Similarly, the competencies are divided into five subheadings, (Policy and Direction, Teaching and Learning, Staff, Partnerships and Resources) which have been identified as key areas that indicate educational leadership mastery. Each competency has a series of definitions of the attributes with illustrations of the levels for each and a series of commentaries explaining how the competencies are applied and measured against context.

It was against the background of this research and the resultant model that the furthering of the strategic aims of the leadership centre through the development of an electronic portfolio evolved.

## The Leadership Framework

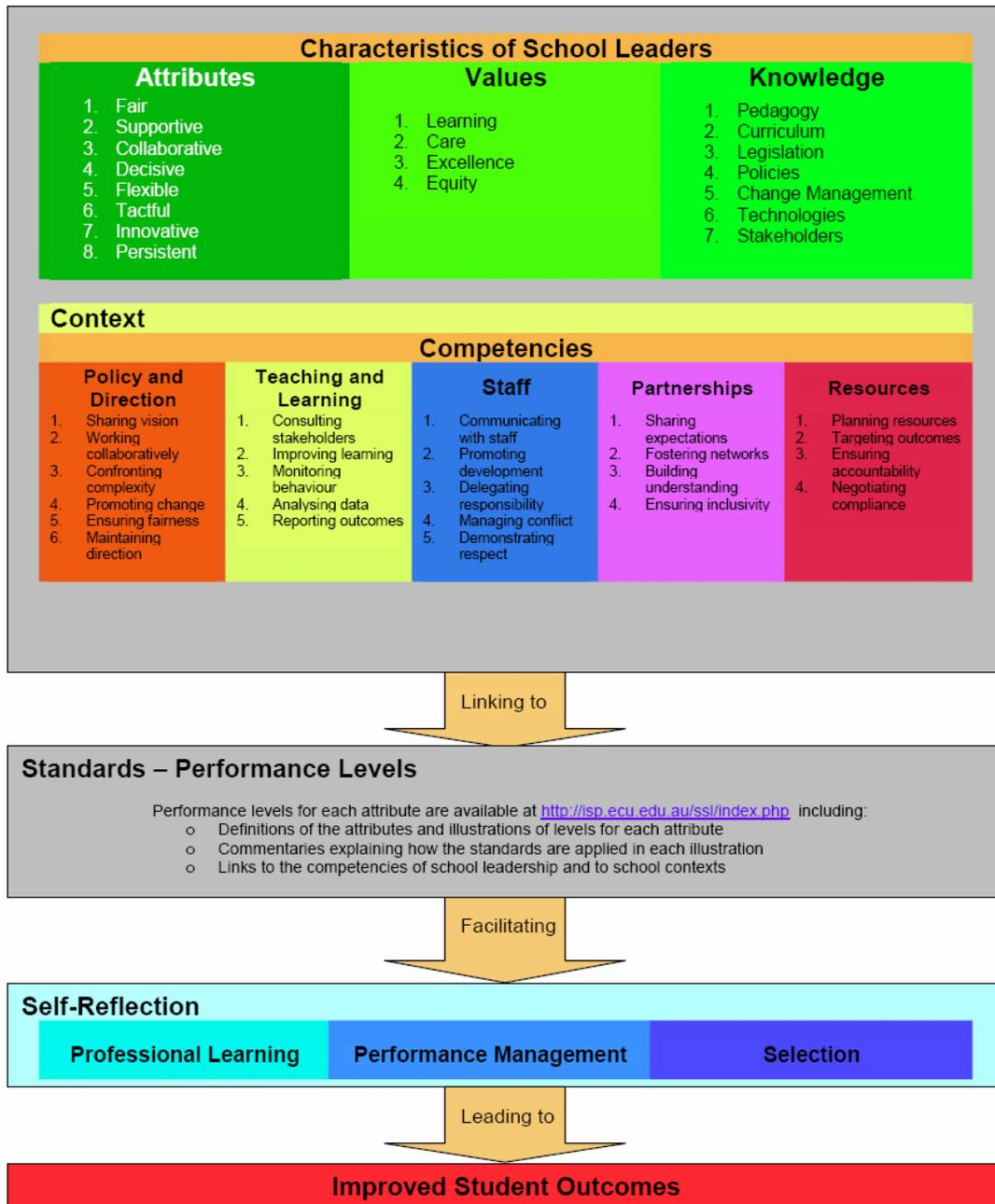


Fig 1. The Leadership Framework (Wildy & Loudon, 2002)

## The Professional Portfolio

Pressure is increasing on 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 leaders are being asked to demonstrate how they are responding to these challenges and to demonstrate the ways in which they are improving their leadership to meet the enormous demands made upon them. Brown and Irby (1996) emphasised the complex, multi-faceted responsibilities of school leadership, and studies by Joyce and Showers (1995) have demonstrated that educational leaders must develop continuously as professionals and instructional leaders to optimise learning conditions for student success.

A professional portfolio has a number of definitions depending on its use.

*... a thoughtful, organized, and continuous collection of a variety of authentic products that document a professional's progress, goals, efforts, attitudes, pedagogical practices, achievements, talents, interests, and development over time. (Winsor & Ellefson, 1995, p.1).*

According to Simmons (1996) and Wolf & Dietz (1998), there are three main functions of the portfolio; learning, assessment and employment or professional presentation. The first two are more student-oriented, whilst the third is meant to demonstrate professional development, containing (for example), a resume, and artefacts of *best practice*. The third type of portfolio includes a statement of teaching philosophy, letters of recommendation, awards, official documents, curriculum innovations, lesson plans, reflections and personal evaluations (Hurst, Wilson & Cramer, 1998).

A professional portfolio is an "organized collection of complex, performance-based evidence that indicates one's growth, goals, and current knowledge and skills needed to be competent in a role or area of expertise" (Campbell, Melenyzer, Nettles & Wyman, 2000, p. 151, cited in Heath, 2002). Heath, (2002) elaborates further that, a portfolio must be more than an organized collection of artefacts, but should also indicate areas of proposed future growth based upon assessments of past performance and current strengths. These assessments, says Heath, are made as a result of personal reflection both on personal performance and on the selection of artefacts on which reflections are based. "The act of reflection-a critical element of portfolio content-further defines the professional portfolio as our own" (Heath, 2002 p. 19).

Campbell et al (1997) divides the professional portfolio into two separate forms. The first is the working portfolio, which is described as a collection of artefacts used as evidence of professional competence. The second is the presentation portfolio that is described as a functional and aesthetically appealing display of an individual's work. Dietz (1994) delineated a third type of professional portfolio-the learner portfolio, allowing for the beginning teacher or administrator not familiar with the process. Sauber (1997) and Welfel (1998) assert that appropriate levels of competence need to be demonstrated at the professional level and that producing a portfolio does this effectively.

Darling-Hammond and Snyder (2000) described portfolios as the most inclusive authentic assessment tool in which other forms of performances such as cases, exhibitions, and problem-based inquiries can be demonstrated.

Creating a leadership portfolio according to Meadows & Dyll (1999, p.3) is;

*“...a culminating experience in the educational leadership program assisting prospective administrators in the areas of performance appraisal, professional growth, and career planning”*

According to Salend (2001), however a portfolio is organised or prescribed, professional leadership portfolios should be both process and product oriented with a focus on the collaborative and reflective process of the teaching and learning experience.

It makes sense in our increasing reliance on e-communications to create an electronic portfolio, which is an easy fit for the word documents, PowerPoint presentations, statistical charts and so forth generated as a regular features of the daily routines of educational administration. Furthermore, organisational efficiency, including the ability to update information is made easier in an electronic format, (Heath, 2003). Even more convincingly, the capacity to increase the amount and variety of media, including text, audio, video, graphics and other files into a portfolio enables a richer, more dynamic presentation of skills, which showcases ICT skills and enables the learning of new ICT skills which can then be passed directly to staff and students.

This study aimed to understand the effectiveness of the electronic portfolio design and operation for the trial using a meta-level conceptual framework (Lanfranco, 1997), which was designed to evaluate programs using ICT at three distinct but mutually dependent levels.

1. At the entity level, to evaluate the contribution (positive or negative) of ICT to the mission and objectives of an entity, project, program or process.
2. At the component level, to evaluate the impact (positive or negative) of ICT through the components of an entity or project, measured in terms of the

efficiency and effectiveness of organizational structures and work processes within and between those components.

3. At the stakeholder level, to evaluate the role of ICT, entities and processes as stakeholders in larger structures and social processes.

It was this conceptual framework that informed the design of the instrument and the structure of the methodological approach to the trial.

### **Methodology**

A full day training program was held at the Leadership Centre. This included an overview of the Leadership Framework and an introduction to reflective practice. Volunteers were then asked to explore the portfolio software and were assisted through the navigation and insertion of artefacts into the program. At the end of the training, a structured questionnaire, which had been validated in a previous study (Dixon, 2003), 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. Closed questions, ranked on a four point Likert scale were used to collect quantitative data. Open questions were provided to collect qualitative data. The results were analysed using SPSS and Content Analysis.

### **Instrument Reliability**

The following table represents the high internal reliability of the questionnaire instrument used to collect the data presented in this report.

Category	Alpha Reliability Coefficient
B. Training and Preparation	Alpha = .8492
C. Goals and Objectives	Alpha = .9515
D. Perceived Value	Alpha = .9038
E. Perceived Effects	Alpha = .7014
F. Further Applications	Alpha = .7281
H. E-Folio Ease of Use	Alpha = .8030

Table 1. Instrument Reliability-Alpha Coefficient

### The Population

All participants were volunteers selected by their supporting professional body as suitable candidates for the portfolio trial.

Bio Data	N	Mean
Age	11	41.0000
# Yrs as Leader	11	11.1818
# Yrs in Education	11	20.7273
# Students in school	11	541.2727
# Staff in school	11	37.6364
# With Degree	3	-
# With Post Grad Diploma	8	-
# Secondary participants	3	-
# Primary participants	5	-
# Ed Support participants	3	-
Sex:		
Male	5	
Female	6	

Table 2. Biographical Data of Participants

## Results and Discussion

### Training and Preparation for the Portfolio

The following is a summary of responses by participants to the training delivery of the program.

- Meeting with other participants helped clarify the requirements of the e-folio (B1)
- The purpose of the E-folio was made clear (B2)
- Participants were personally prepared for the creation of an E-folio (B3)
- Portfolio training was adequate (B4)
- Adequate resources were provided (B5)
- Goals were clearly articulated (B6)
- Adequate training in the leadership framework was provided (B7)
- There were no unexpected surprises (B8)

	N	Minimum	Maximum	Mean	Std. Deviation
B1	11	3.00	4.00	3.4545	.52223
B2	11	2.00	4.00	3.2727	.64667
B3	11	2.00	4.00	3.0909	.70065
B4	11	2.00	4.00	3.1818	.75076
B5	11	2.00	4.00	3.4545	.68755
B6	11	3.00	4.00	3.6364	.50452
B7	11	3.00	4.00	3.5455	.52223
B8	11	2.00	4.00	3.0909	.53936
Valid N (listwise)	11				

Table 3. Mean Scores for Training and Preparation

The overall mean for Training and Preparation was 3.3309. The results were consistently positive; therefore participants were generally pleased with the quality, quantity and depth of the training and preparation element of the project.

### **Goals and Objectives of the Portfolio**

The following is a summary of responses by participants to the Goals and Objectives of the program.

- Enough information was provided on personal philosophy of leadership (C1)
- Clear information on *Attributes* was provided (C2)
- Clear information on *Values* was provided (C3)
- Clear information on *Knowledge* was provided (C4)
- 
- Clear information on *Policy and Direction* was provided (C5)
- Clear information on *Teaching and Learning* was provided (C6)
- Clear information on *Staff* was provided (C7)
- Clear Information on *Partnerships* was provided (C8)
- Clear information on *Resources* was provided (C9)
- Participants thought the self reflective questions were useful (C10)
- Participants agreed that the narratives would be useful (C11)

	N	Minimum	Maximum	Mean	Std. Deviation
C1	11	2.00	4.00	3.2727	.64667
C2	11	3.00	4.00	3.3636	.50452
C3	11	3.00	4.00	3.2727	.46710
C4	11	3.00	4.00	3.2727	.46710
C5	11	3.00	4.00	3.2727	.46710
C6	11	3.00	4.00	3.3636	.50452
C7	11	3.00	4.00	3.3636	.50452
C8	11	3.00	4.00	3.3636	.50452
C9	11	3.00	4.00	3.3636	.50452
C10	11	2.00	4.00	3.2727	.64667
C11	11	3.00	4.00	3.6364	.50452
Valid N (listwise)	11				

Table 4. Mean Scores for Goals and Objectives

The overall mean for the Goals and Objectives was 3.347. The results were consistently positive, suggesting that participants were pleased with the information provided, the criteria listed, the self-reflection questions and the narrative elements of the portfolio.

### **Perceived Value of the Portfolio**

The following is a summary of responses by participants to the Perceived Value of the Portfolio.

- The time spent on my portfolio will be worthwhile (D1)
- Creating a portfolio will be valuable for professional growth (D2)
- An E-Folio will be a valuable tool for line management (D3)
- The self reflective process will be valuable (D4)
- The Portfolio will promote valuable self analysis (D5)

- The portfolio will enhance professional practice (D6)
- The portfolio will enhance leadership (D7)
- The portfolio will facilitate continuous professional learning (D8)
- The portfolio will be a valuable resource (D9)

	N	Minimum	Maximum	Mean	Std. Deviation
D1	11	3.00	4.00	3.3636	.50452
D2	11	3.00	4.00	3.5455	.52223
D3	11	1.00	4.00	3.3636	1.02691
D4	11	3.00	4.00	3.6364	.50452
D5	11	3.00	4.00	3.3636	.50452
D6	11	2.00	4.00	3.3636	.67420
D7	11	3.00	4.00	3.4545	.52223
D8	11	3.00	4.00	3.5455	.52223
D9	11	3.00	4.00	3.6364	.50452
Valid N (listwise)	11				

Table 5. Mean Scores for Perceived Value

The overall mean for Perceived Value was 3.474. The results were consistently positive; this is the highest level of agreement of all eight categories, indicating a very positive assessment of the value of the portfolio as an adjunct to personal and professional growth.

### **Perceived Effects of the Portfolio**

The following is a summary of responses by participants to the Perceived Effects of the Portfolio.

- The portfolio will assist in improving leadership (E1)
- The portfolio will assist in planning processes (E2)

- The portfolio will not streamline administrative responsibilities (E3)
- The portfolio will help with creating a vision for my area of management (E4)
- The portfolio will assist in the creation of leadership philosophy (E5)
- The portfolio will be an excellent tool for performance management (E6)
- The portfolio will not help to facilitate organisational change (E7)
- The portfolio will not help to shape school culture (E8)
- The portfolio will not change planning practices (E9)

	N	Minimum	Maximum	Mean	Std. Deviation
E1	11	3.00	4.00	3.2727	.46710
E2	11	2.00	4.00	3.2727	.64667
E3	11	2.00	3.00	2.2727	.46710
E4	11	3.00	4.00	3.3636	.50452
E5	11	2.00	4.00	3.3636	.67420
E6	11	3.00	4.00	3.2727	.46710
E7	11	2.00	3.00	2.7273	.46710
E8	11	2.00	4.00	2.6364	.67420
E9	11	2.00	4.00	2.9091	.53936
Valid N (listwise)	11				

Table 6. Mean scores for Perceived Effects

The overall mean for the Perceived Effects was 3.101. However this is misleading as a number of the responses (E3, E7, E8 and E9) were worded in the negative. It is interesting to note that although participants thought the portfolio would have a positive effect on leadership overall, (improving planning, creating a vision, personal philosophy of leadership and performance management), that administration

responsibilities, facilitating organisational change, shaping the culture of the school and changes in planning practices would not be changed or enhanced.

### Further Applications of the Portfolio

The following is a summary of responses by participants to Further Applications of the Portfolio.

- Participants wanted members of their staff to create an e-folio (F2)
- However the current form is not suitable for this (F3)
- The selection criteria for DETWA promotional positions should underpin the model (F4)
- An assessment rubric should not be developed (F5)
- There is a strong commitment to ongoing development of the portfolio (F6)

	N	Minimum	Maximum	Mean	Std. Deviation
F2	11	2.00	4.00	3.0000	.44721
F3	11	1.00	3.00	2.5455	.68755
F4	11	3.00	4.00	3.2727	.46710
F5	11	1.00	4.00	2.9091	.70065
F6	11	3.00	4.00	3.1818	.40452
Valid N (listwise)	11				

Table 7. Mean Scores for Further Applications

The overall mean for Further Applications was 2.981. However there were positive responses to the development of the e-folio for members of participant's staff in the future, with an emphasis on including promotional criteria and an indication of strong

commitment to developing a portfolio, but negative responses were forwarded as to the applicability to non-leaders of the current format. The development of an assessment rubric was ruled out.

### **Ethical Issues**

The following is a summary of responses by participants to Ethical Issues raised by the Portfolio.

- Participants were confident that the people assessing the data will be trustworthy (G1)
- Participants agreed that their relationship with the research team was important (G2)
- The portfolio is not just a trend (G3)
- Issues of privacy are adequately dealt with (G4)
- Participants were prepared to be very honest with their thoughts and reflections in the portfolio (G5)

	N	Minimum	Maximum	Mean	Std. Deviation
G1	11	3.00	4.00	3.4545	.52223
G2	11	2.00	4.00	3.5455	.68755
G3	11	1.00	3.00	1.9091	.53936
G4	11	3.00	4.00	3.1818	.40452
G5	11	3.00	4.00	3.6364	.50452
Valid N (listwise)	11				

Table 8. Mean Scores for Ethical Issues

The overall mean for Ethical Issues was 3.145. Participants were very positive about their own honesty in reporting, trusting of the people accessing their portfolios and the

privacy issues associated with this. They were equally positive that the portfolio was not a trend that would fade away.

### **E-Folio Ease of Use**

The following is a summary of responses by participants to Further Applications of the Portfolio.

- The portfolio in its current form is not easy to navigate (H1)
- Instructions need to be made clearer (H2)
- The software is not yet error free (H3)
- The portfolio is well organised (H4)
- The portfolio relates well to personal goals and objectives (H5)
- The portfolio is clear and purposeful (H6)
- A paper portfolio may be better than an electronic one (H7)
- The portfolio in its current form does not allow for flexibility in the shaping of its form and content (H8)
- Participants did not have sufficient expertise in ICT for the current portfolio to work (H9)

	N	Minimum	Maximum	Mean	Std. Deviation
H1	11	2.00	4.00	2.8182	.60302
H2	11	2.00	4.00	2.9091	.53936
H3	11	2.00	3.00	2.9091	.30151
H4	11	3.00	4.00	3.1818	.40452
H5	11	3.00	4.00	3.3636	.50452
H6	11	3.00	4.00	3.3636	.50452
H7	11	1.00	4.00	3.0909	.83121
H8	11	2.00	4.00	2.8182	.60302
H9	11	2.00	4.00	2.9091	.53936
Valid N (listwise)	11				

Table 9. E-Portfolio ease of Use

The overall mean for the ease of use of the portfolio was 3.040. Whilst this is a mildly positive endorsement of the portfolio, clearly there are difficulties with the navigation, the instructions provided, “bugs” in the software and its current form. The range of responses to this part of the questionnaire suggests that those with strong ICT skills had no problems, whilst those with little or no ICT background had more difficulty.

The following graph gives an overall picture of the seven categories by mean.

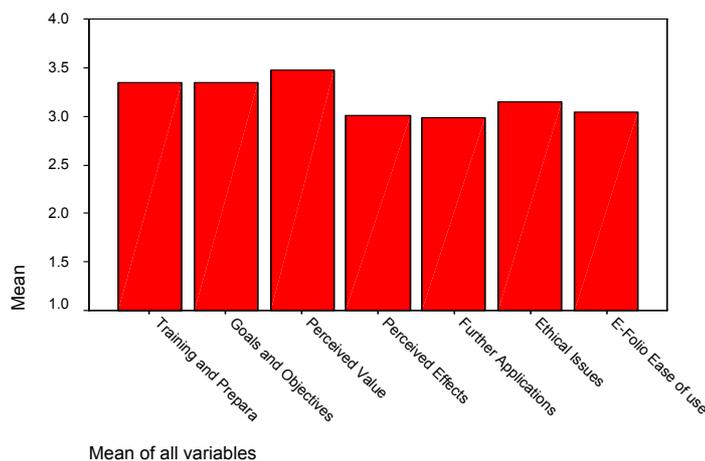


Fig 2. Summary of mean for all categories

## Open-Ended Responses

Participants were given the opportunity to voice their opinions as to what they perceived were both positive and negative aspects of creating a portfolio as well as making any other comments they saw fit. The following is a summary of these responses ascertained using content analysis.

<b>Positive Aspects to Creating a Portfolio</b>
1. Easy to update on a regular basis
2. Transferable
3. Good store of information for future promotional application /convenient vehicle for collection of evidence
4. Useful as a self reflective tool/self awareness
5. Useful to assist in goal setting/planning
6. Develop knowledge of the Leadership Framework
7. Improve ICT skills
8. Teacher registration potential
9. Professional and personal growth
10. Stands in as a logbook/diary on permanent standby
11. Framework for organising thoughts
12. Awareness of strengths and weaknesses
<b>Negative aspects to creating a Portfolio</b>
1. Time, time, time, level of commitment and time (100% agreement)
2. Typing skills
3. Narrative writing skills
4. Frustrations with the technology
5. Maybe being too self critical will be negative
<b>Other comments</b>
1. Will the portfolio be accepted as evidence for L3 or L4 promotion?
2. Are personal assessments valid?
3. Moderation will be an issue if assessment is taken from portfolios.
4. The portfolio has a place in the system
5. I am really excited about it
6. A great idea.
7. Create a walk-through manual to help people

Table 10. Summary of content analysis of open-ended questions

## **Conclusion**

All of the educational leaders involved in stage one of the trial indicated enthusiasm and a willingness to commit to the project. They were mostly satisfied with the training and preparation phase of the program, with a small number of people indicating they would have preferred a more directed rather than exploratory approach to the use of the portfolio. Participants were pleased with the link between the Leadership Framework, the narrative self-analysis and reflective practice elements of the training phase.

All of the participants were satisfied that the information provided in each of the framework categories was clearly articulated, relevant to their position as leaders and demonstrable through the careful selection of appropriate artefacts. Goals and objectives were made explicit and related to the structure of the project software.

Perception as to the value of the portfolio was significantly optimistic. All participants gave a positive response to developing a portfolio and were particularly enthusiastic in terms of improving leadership, continuous professional development, and the portfolio's capacity for the promotion of self-analysis. They saw the portfolio as facilitating planning, assisting in developing a philosophy and vision for their area of management and particularly useful as a line management tool. However most volunteers did not think the portfolio would facilitate organisational change, that it would not assist in shaping school culture and would not change planning practices.

There was a general agreement that a portfolio would be worthwhile for staff under their charge; however they thought the current format was not suitable and had to be altered to adapt to the needs of classroom teachers. Although there was a positive response to the portfolio using the current criteria for DETWA promotional positions as the underpinning framework, an assessment rubric was not a desirable development. This does not contradict current line management processes and highlights the capacity of the portfolio to assist in seeking higher leadership positions.

Importantly, there was a sense of trust by participants in the research team. This was made clear through positive responses to questions of privacy. Indications that some of the personal information that would be included, especially in the narratives, would be sensitively managed ensured they would be honest with what was to be written. All participants agreed that the portfolio is not just a trend, but is a valuable tool, which has a place in the current educational climate.

The portfolio software was perceived by some as being difficult to navigate, but this was ameliorated in part by the fact that the same people declared their lack of ICT training. This gives rise to the notion that the use of a portfolio will definitely improve the ICT skill of participants, a long held aim of MYCEETA, EdNa and other educational bodies attempting to exploit the potential of ICT through leadership in schools. A number of suggestions made by participants during the training phase have been noted for future development of the next, improved portfolio software package, which will include an easier navigation interface and

more detailed instructions as to its use. Generally though, participants were happy they could work with the current format.

Of most concern to all, was the level of commitment and the amount of time the development of their personal portfolio would take to develop to a useful stage. However, research (Dixon, 2002) has demonstrated that the initial commitment will be approximately 20-30 hours and that routine maintenance and updating about 2 hours per month. The most difficult phase was perceived to be in the start-up.

Finally, participants made positive comments about the training phase at more than twice the rate they made negative comments. More importantly, the negative comments were mainly associated with concerns about personal capacity in areas such as narrative writing, time commitment, typing ability and ICT skills, all of which can be easily overcome. The positive comments were most encouraging, as was the level of commitment to the project. There is reason for optimism that the trial will make a contribution to the personal and professional development of participant leaders. Results of the trial will be published November 2005.

#### References.

- Brown, G., & Irby, B. J. (1996). *The Principal Portfolio* Corwin Press: Ca
- Campbell, D., Melenyzer, B., Nettles, D., & Wyman, R., Jr. (2000). *Portfolio and performance assessment in teacher education*. Boston: Allyn and Bacon
- Darling-Hammond, L., & Snyder, J. (2000). Authentic assessment of teaching in context. *Teaching and Teacher Education*, 16, 523-545
- Dixon & Dixon, (2003). An evaluation of a professional portfolio project for principals in Western Australia *Higher Education Research and Development Society (HERDSA) conference*. Christchurch, New Zealand, July 2-5, 2003.
- Electronic portfolios for reflective self-assessment *Teacher Librarian*; Seattle; Oct 2002; Marilyn Heath;

Hurst, Wilson & Cramer, (1998)., "Professional Teaching Portfolios," *Phi Delta Kappan*, Vol. 79, No. 8, 1988,

Joyce, B., & Showers, B. (1988). *Student achievement through staff development*. New York: Longman.

Lanfranco, S (1997) A Meta-Level Conceptual Framework for Evaluating Projects involving Information and Communication Technology

Leadership Centre Website (2005) viewed March2005

<http://www.eddept.wa.edu.au/lc/background.html>

Meadows, R. & Dyal, A. (1999). Implementing portfolio assessment in the development of school administrators: improving preparation for educational leadership. *Education*, V 1 20, i2 p.304

Simmons, B. J. (1996). Developing and using portfolios. *Kappa Delta Pi Rec.*31 (2), p 56 59.

Wildy, H., & Loudon, W. (2003) Leadership Centre Western Australia The Leadership Framework; accessed Nov 2005 (<http://www.eddept.wa.edu.au/lc/competencies.html>)

Winsor, J. T., & Ellefson, B. A. (1995). Professional portfolios in teacher education: An exploration of their value and potential. *The Teacher Educator*, 31, 68-74.

Wolf, K. & Dietz, M. (1998). Teaching portfolios: Purposes and possibilities. *Teacher Education Quarterly*, 25(1), 9-22.