An Investigation into the Use of E-Portfolio Tools to Enhance the Final Year Engineering Project Experience

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Background

- Project funded under the Royal Academy of Engineering’s National HE STEM Programme
- 12-month duration
  - January – December 2011
- Investigators
  - Ray Sheriff and Felicia Ong
The Final Year Engineering Project (FYEP) requires students to apply a range of personal, practical and technical skills.

At Bradford, the FYEP spans two semesters and is assessed by a poster and a report.

Progress tends to be gauged through regular face-to-face meetings between supervisor and student.

As study patterns and employers’ needs change, new ways of learning and teaching may be necessary.

E-portfolios tools have the potential to enhance the FYEP experience from the perspectives of supervisor and student, respectively.
Aims and Objectives

- **Aim**
  - To determine whether e-portfolio tools can be used to enhance the FYEP experience

- **Obj-1**
  - To identify existing practice among supervisors and students

- **Obj-2**
  - To raise level of awareness of capabilities of e-portfolio tools

- **Obj-3**
  - To evaluate the performance of e-portfolio tools when used for FYEPs
Methodology

- Apply a mixture of qualitative and quantitative techniques
- Consult both supervisors and students
- Perform initial data gathering through online questionnaires and semi-structured face-to-face interviews
- Conclude with a pilot phase involving PebblePad, the University’s e-portolio tool
On-line questionnaires were made available to FYEP students and supervisors from 20 May to 31 May 2011.

The questionnaires comprised five sections: Background, Meetings, Skills, Assessment and Technology.

- 13 FYEP supervisors and 31 students completed the on-line questionnaires.

Responses from students were received from all five of the School’s Programme Teams.

Face-to-face interviews with supervisors have been performed.
Sample Results – Student Experience

In which areas would students benefit from training as part of the FYEP?

- Environment
- Presentation Skills
- Report Writing
- Research Methods
- Paperwriting
- Ethics
- Time Management
- Project Management

How often do you meet with your supervisor?

- Daily
- Weekly
- Fortnightly
- Monthly
- Once or Twice per Semester

On average, how long does one of your FYEP meetings last?

- 1 to 10 minutes
- 11 to 20 minutes
- 21 to 30 minutes
- 31 to 40 minutes
- More than 40 minutes

Practice and Assessment

- Personal Development Planning (PDP) would add value to the FYEP experience
- A Reflective Account would add value to the Final Report
- Maintaining a log book is good practice
- A portfolio of learning and achievement should form part of the FYEP assessment
- A detailed Project Proposal is the starting point of an FYEP
- The FYEP is over assessed
- Students should submit monthly progress reports

Strongly Disagree
Disagree
Neither Disagree nor Agree
Agree
Strongly Agree
Sample Results – Supervisor Experience

How often do you meet with your FYEP students

<table>
<thead>
<tr>
<th></th>
<th>Semester 1</th>
<th>Semester 2</th>
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</thead>
<tbody>
<tr>
<td>Daily</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Weekly</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Fortnightly</td>
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<td>2</td>
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<tr>
<td>Monthly</td>
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<td>1</td>
</tr>
<tr>
<td>Once or Twice per Semester</td>
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<td>1</td>
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In which areas would students benefit from training as part of the FYEP?

<table>
<thead>
<tr>
<th>Area</th>
<th>Definitely Not</th>
<th>No</th>
<th>Maybe</th>
<th>Yes</th>
<th>Absolutely</th>
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</thead>
<tbody>
<tr>
<td>Environmental Issues</td>
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<td>Presentation Skills</td>
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<td>Report Writing</td>
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<td>Research Methods</td>
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<td>Semester 1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Semester 2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
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Practice and Assessment

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<th>Neither Disagree nor Agree</th>
<th>Agree</th>
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<td>Maintaining a good practice</td>
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The Royal Academy of Engineering
National HE STEM Programme
PebblePad
Future Plans

- Analyse results of on-line surveys and semi-structured face-to-face interviews with FYEP supervisors
- Provide PebblePad training for supervisors and students at start of 2011/12 academic Year
- Design suitable e-portfolio experiment for 2011/12 FYEPs
  - Modify University’s SaPrA (Skills and Personal Reflective Activity) approach, originally designed for first year initial competence assessment and development
    - http://www.bradford.ac.uk/developme/sapra/index.php
- Write-up results in the form of a Case Study