How formative feedback enhances the student learning experience

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The United States and Britain: two nations divided by a common language
Shape of this talk

1 – Introduction

2 - Background

3 – Findings and Analysis

4 - Conclusions
Introduction
The United States and Britain: two nations divided by a common language
What we mean by assessment...

Measuring students’ performance

Assessment can be

- Summative – counting towards final marks
- Formative – shaping learning, providing feedback
- Diagnostic – telling the teacher or the learner something about their existing capabilities/competencies
- Integrative – combining some of the above functions; embedded into the learning/instruction process underway

Please interrupt me if you are anxious about what I am saying
Assessment impacts on learning

We can enhance the benefit for students if we distinguish between

Awarding Marks

5.6 10 9.6

providing feedback
Assessment impacts on learning

Students will benefit if we keep these two activities separate and distinct.


The feedback debate

Issues
• timeliness of feedback
• quality of feedback
• use of feedback in feed-forward
• student engagement with feedback

very little research into the impact of feedback on
• student learning
• student achievement

• little consideration given to the ways in which students engage with formative activities or formative feedback.
Our Question

• *Can formative feedback enhance student learning and academic achievement?*

Mixed methods research

Single institution – teaching intensive

… this type of work has not previously been reported on in an engineering institution

  – case study (small data set; researcher involvement)
    • Student Survey – quantitative and qualitative data
    • Triangulation data
      – focus group interviews
      – Staff survey

• Some additional data from academics has been collected, not specifically cited in this presentation
Overview of data collection

Stage 1 — Identifying types of feedback

Feedback exercises with cohort 1 — year 1

Cohort 1
Student Group discussions — year 1

Feedback exercises with cohort 2 — year 1

Cohort 2
Student Group discussions — year 1

Feedback exercises with cohort 2 — year 2

Cohort 1
Student Group discussions — year 2 (1)

Feedback exercises with cohort 2 — year 2

Cohort 1
Student Group discussions — year 2 (2)

Cohort 2
Student Group discussions — year 2 (1)

Cohort 2
Student Group discussions — year 2 (2)

Cohort 2
Student Group discussions — year 2 (1)

Staff group discussion A

Staff group discussion B

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Our total set of samples

The sample for the case studies

• 3x
  – year 1 cohorts of both computer forensics and computer science (6 student groups)
• 2x
  – year 2 computer forensics cohorts (2 student groups).

The initial data gathering included all undergraduate computing students in the School (population – 482 students)

• Baseline
• indication of what was important in terms of feedback for students
This case

- Interventions wanted for progression and retention
- Primary researcher a closely involved academic
- Seeking changes to enhance institutional reputation
  - Student attainment
  - Student feedback (national rankings)
  - Broader context institutional wide initiative for interventions
### Most useful

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>a</td>
<td>Suggestion for future work</td>
</tr>
<tr>
<td>b</td>
<td>Suggestions for additional marks</td>
</tr>
<tr>
<td>c</td>
<td>Easy to understand comments</td>
</tr>
<tr>
<td>d</td>
<td>Pointed out mistakes</td>
</tr>
<tr>
<td>e</td>
<td>Work with comments</td>
</tr>
<tr>
<td>f</td>
<td>Grade</td>
</tr>
<tr>
<td>g</td>
<td>Sample solution</td>
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<tr>
<td>h</td>
<td>Written comments</td>
</tr>
<tr>
<td>i</td>
<td>Identifying where marks lost</td>
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</tbody>
</table>

### Least useful

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>a</td>
<td>No feedback</td>
</tr>
<tr>
<td></td>
<td>Marks only/grade</td>
</tr>
<tr>
<td></td>
<td>Pointed out mistakes/errors</td>
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<tr>
<td></td>
<td>Didn’t get to keep assignment</td>
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<tr>
<td></td>
<td>Insulting comments</td>
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<tr>
<td></td>
<td>Quality of feedback</td>
</tr>
<tr>
<td></td>
<td>Feedback in front of class</td>
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</tbody>
</table>
Translate the loves and hates

- Considered the freely identified items
- Translated them into classroom interventions
- Asked students to rank their preferences
Students’ perceptions feedback wanted – voted list

How feedback might be achieved

Ideal feedback examples

<table>
<thead>
<tr>
<th>Mix of written and verbal feedback</th>
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</thead>
<tbody>
<tr>
<td>Talk with tutor face to face</td>
</tr>
<tr>
<td>Comments on mistakes</td>
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<tr>
<td>Personalised feedback</td>
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<tr>
<td>Positive criticism</td>
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<tr>
<td>Annotated scripts</td>
</tr>
</tbody>
</table>

Issues data

- Small data set
  - Little variability
  - Nothing of statistical strength

Solutions

- Time intensive
### Ranking the interventions

**Faculty data**
- Survey
- Focus group discussion

<table>
<thead>
<tr>
<th>Category</th>
<th>Student</th>
<th>Faculty BFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comment future changes to improve</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Question specific comments re. errors</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Annotated comments on script</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Comment on errors, subject specific</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Generic comment on errors: structure, grammar etc</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Model solution</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Mark only</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>No feedback</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

BFS = Best for student
Faculty’s reflections

• Front page vs inline comments
• Perceived constraints of departmental policy
• Intention
  – Helpful
  – Feed forward
• Surprise
  – Students’ perception of judgemental feedback

• Perceived Issues
  – Workload
  – Timing->workload
  – Time factors undermining quality of feedback
• Aspire
  – Face to face -> costly in time
  – Potential innovations - anxieties
Conclusions – perhaps not surprising

• Faculty have a different view of feedback to students
• Practice does not always match faculty’s aspirations
• Students’ preferences would incline to want to be given the solutions (sticky plaster/band aid approach to problem??)
• Dialogue between faculty and students might enable transition in student views
  – We can expect student views and preferences to become modified as they move through their education
• Further work,
  – examining students responses and changes in responses after purposeful feedback
• But dilemma since each year we have a new set of students
  – This in itself argues for feedback for learning
Thank You 😊

Acknowledge:
Contributions of colleagues and students who participated in the surveys and discussions

Questions?
References


