Technology Mediated Feedback: Powerful, Clear, and Personalized

Dr. Mike Phillips

michael.phillips@monash.edu

@thinkingmike

digital education research @ monash

@DER_Monash
Feedback is important...

• The research argues that high quality feedback is the most powerful single influence on student achievement.

• Feedback is a broad term. **My focus is on assessment feedback.**
Feedback typically underpins the most powerful influences on learning
Feedback challenges

- Both educators and learners agree that it is very important
- Learners complain that they do not get enough feedback
- Feedback is typically ‘telling’ and diagnostic in flavor, often lacking strategies for improvement, and often lacking opportunities for further task attempts
- Educators resent that although they put considerable time into generating feedback, learners take little notice of it
- Educators typically think their feedback is more useful than their learners think
- Both educators and learners describe it as confronting

Ende 1995; Hattie 2009; Boud & Molloy 2013; Johnson & Molloy 2017
Survey

- Open to all students and staff across two universities
- 4514 students completed the survey, including:
  - 3002 undergraduates
  - 109 Honours students
  - 1138 Masters students
  - 265 students completing a postgraduate diploma or certificate
- 406 staff completed the survey, including:
  - 323 staff with assessing duties

37% of all students said feedback is discouraging.

Feedback is without opportunity:
- Only 13% of academic staff specifically design follow-up assessment tasks to allow students to act on the comments they receive.

Students who agree that feedback is upsetting:
- 15% of all students,
- 36% of students with below average English proficiency,
- 27% of students with a disability that impacts on their assessment,
- 26% of students who achieve an average pass grade, and
- 19% of international students.

67% of staff and 65% of students agree that feedback is impersonal and staff do not know their students well enough to offer personally meaningful feedback.

As undergraduate students progress through their degree they feel feedback is less useful as it is less detailed and they are less likely to use it.
Definition and purpose?

- What is feedback?
- Why should we do it?
- What are the principles of effective feedback?
Is feedback just *giving* information?
Our definition of effective feedback

“Feedback is a process in which learners make sense of information about their performance and use it to enhance the quality of their work or learning strategies.”
This is *not* feedback

“I left feedback on their final essays, which they never collected”
Feedback: hopefully useful information

Boud & Molloy 2013
Feedback by definition requires impact.

Feedback that has no impact on learning is simply information.
view... from another point of view...
This is feedback
Learners are at the heart of feedback.

Learners need to:

• develop their ability to seek information
• make sense of the information
• use the information
• recognise the impact and adjust accordingly
The feedback loop – a design metaphor

The "loop" in which information is sought/gained/negotiated, by self, peers, teachers, systems and others.
Feedback is a cyclical process

How do we make it

• frequent?
• early?
• connected?
Feedback is **important but...**

despite a significant body of literature there is no clear agreement in how assessment feedback, should be designed – so we have synthesised our own principles...
# 8 Assessment feedback principles

## TECHNOLOGY ENHANCED FEEDBACK ON ASSESSMENT

Dr Michael Henderson  
Dr Michael Phillips

Learning with New Media Research Group, Faculty of Education, Monash University, Melbourne

## 8 Principles for effective assessment feedback

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. be timely</td>
<td>Give feedback while details are still fresh, and in time to assist the student in future task performance.</td>
</tr>
<tr>
<td>2. be clear (unambiguous)</td>
<td>It is important to be unambiguous in communication. For example, do not assume students have the same understanding of academic language or discourse. Similarly phrases such as “good work” are unclear due to lack of specificity.</td>
</tr>
<tr>
<td>3. be educative (and not just evaluative)</td>
<td>Indicating something as incorrect is not as helpful as suggesting how it could be corrected or improved. It is also valuable to focus on strengthening, developing, and extending what has been done well.</td>
</tr>
<tr>
<td>4. be proportionate to criteria/goals</td>
<td>More time should be spent providing feedback on the more significant goals of the assessment task.</td>
</tr>
</tbody>
</table>
| 5. locate student performance | In relation to:  
- the goals of the task (feed up)  
- clarifying what they did well and not so well (feedback)  
- and as a result what they can most productively work on in the future (feed forward).  
More emphasis should be placed on feed forward. |
| 6. emphasise task performance | Feedback to students should be focused on the task rather than self or attributes of the learner. In particular the feedback should provide guidance on the process and metacognition (self-regulation) level. |
| 7. be phrased as an ongoing dialogue rather than an endpoint | Instead of an end-point in the teaching and learning processes, feedback should be seen as an invitation and a starting point for reciprocal communication that allows students to continue developing skills and ideas through conversations with their teachers. |
| 8. be sensitive to the individual | Feedback should reflect the individual student’s:  
- context and history  
- emotional investment and needs  
- power  
- identity  
- access to discourse  
It should encourage positive self-esteem and motivation. |

---

8 Assessment feedback principles

Assessment feedback should: (available at: http://digitalfeedback.org)

1. **be timely** (e.g. in time to assist the student in future task performance)

2. **be clear** (unambiguous) in communication (e.g. “great effort” is ambiguous)

3. **be educative** (and not just evaluative) focussing not just on correcting but also strengthening, developing and extending what has been done well

4. **be proportionate** to criteria/goals (e.g. in time)
5. **locate student performance** in relation to the goals of the task (feed up)
   – clarifying what they did well and not so well (feed back)
   – and as a result what they can most productively work on in the future (feed forward)

6. **emphasise task performance**, and especially process and metacognition (self-regulation) and not use self in an evaluative sense [*this is very difficult since we often mark a product, and do not have a record of process or metacognition*]

7. be phrased as an **ongoing dialogue** rather than an endpoint (e.g. inviting students engage in discussion to continue developing ideas and skills)

8. **be sensitive to the individual** (context, history, emotional investment and needs, power, identity, access to discourse)
An impossible recipe?
An impossible recipe?

• The two most common forms of assessment feedback practices:
  – written comments on the assignment
    • often limited in depth and marred by ambiguity
  – face to face discussions
    • often impractical in classrooms, dependent on student memory and subject to performance anxiety

• Digital multimodal feedback does not inherently resolve all the problems or meet the principles but they do offer new possibilities...
  – Audio
  – Video (group and individual)
  – Screencast / capture
What the literature says...

For audio, screencast and video feedback

• The general benefits:
  – Greater detail in feedback
  – Faster or just as efficient to create feedback (in comparison with text feedback)
  – Clearer meaning (audio visual cues such as tone perceived as conveying meaning easier)
  – Feedback is perceived as more individualised
  – Students feel a stronger connection with their teachers, or stronger social presence of teachers

• The caveats:
  – Usually presented as supplementary, and thought to be limited to small classes.
  – Recent research indicating additional factors are at play
Where is the “on” button? How do I start?
## Media and software

### Audio
- Audacity
- Soundcloud
- Mobile apps

### Video
- Webcam with...
- OBS
- MovieMaker
- iMovie
- Mobile apps
- Quicktime Pro

### Screencast
- OBS
- TinyTake
- Jing
- Screenflow
- Adobe Presenter
- Explain Everything
- Quicktime Pro
Video method / design

Hardware/Software
- webcam and video recording software (eg. quicktime, Windows Movie Maker), or
- iPhone/iPad (propped up to reduce camera movement)

Focus
- The video cameras were focussed on the heads and shoulders of the teachers with enough space in the frame to allow some movement and capturing of hand gestures.
- The videos were recorded at work or home in a quiet location.

Length
- Approximately 5 minutes
- manageable file size
- could include a lot of detail but still needed to keep an eye on the time
Video method / design

**Process**

- The videos were generally recorded immediately after the assignment was read.
  - The proximity of the recording meant the comments were specific, the advice relevant and the language had a sense of immediacy.
  - This also meant that time wasn’t wasted making copious notes to help our memories.
- Notes were made on the assignment but no script.
- The videos were rarely re-recorded and never edited.
- ‘ums’ and ‘ers’ are OK.
- Uploaded to VLE along with grade
Multimodal assessment feedback structure
Structure for technology enhanced feedback artefacts

**Structural elements**

- Salutation
- Relational work
- *Goal of recording*
- Evaluative summary
- Textual issues

Commenting on the substance of the assignment with an emphasis on feed forward

- Valediction
- & invitation
### Findings from different educational settings

<table>
<thead>
<tr>
<th>Potential strengths</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individualised &amp; personal:</strong> specific and valorising identity &amp; effort</td>
<td></td>
</tr>
<tr>
<td><strong>Supportive:</strong> perceived as caring and felt to be motivating</td>
<td></td>
</tr>
<tr>
<td><strong>Clear:</strong> detailed and unambiguous</td>
<td></td>
</tr>
<tr>
<td><strong>Prompting reflection:</strong> on work done, process and thinking in terms of success criteria</td>
<td></td>
</tr>
<tr>
<td><strong>Constructive (useful):</strong> prompting consideration of future work, process and thinking</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential weakness</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial anxiety</strong> about seeing the assessor’s face while receiving feedback (particularly if they feel that it may be negative)</td>
<td></td>
</tr>
<tr>
<td><strong>Matching feedback to assignment:</strong> sometimes effort is needed to find the examples in the assignment that relate to the comments</td>
<td></td>
</tr>
</tbody>
</table>
Cross sector findings: High School and College

• Online survey: 346 respondents - 260 high school students (75.1%) and 86 were college students (24.9%).
• **Both groups** of students appreciated the fact that recordings offer a **higher level of detail than text**.
• However, **high school students** more frequently referred to valuing the **rich cues such as tone and expression**.
• **College students** noted the **more personalized** nature of recordings.
High school students: Satisfaction, use and pedagogical relationships
Baseline perceptions – satisfaction with previous, subject specific feedback

I am always satisfied with the feedback provided on my English tasks

- Very True (25%)
- True (36%)
- Somewhat True (28%)
- Neither true or untrue (8%)
- Somewhat untrue (3%)
- Untrue (0%)
- Not at all true (0%)
Written feedback - satisfaction

I am satisfied with the written feedback provided

- Very True (53%)
- Somewhat True (11%)
- Somewhat untrue (6%)
- Untrue (3%)
- Neither true or untrue (8%)
- Not at all true (0%)

72%
I am satisfied with the video feedback provided

- Very True (60%)
- True (20%)
- Somewhat True (13%)
- Neither true or untrue (8%)
- Somewhat untrue (0%)
- Untrue (3%)
- Not at all true (0%)

80%
Or in another way ... modality impacts student satisfaction with feedback comments

![Bar chart showing the percentage of students who agree or strongly agree they are satisfied with feedback comments across different modalities.](chart.png)
# Teacher perceptions of use

The student used all of the video feedback I provided on the draft to improve their performance on the final version

<table>
<thead>
<tr>
<th>Teacher</th>
<th>The student used all of the video feedback I provided on the draft to improve their performance on the final version</th>
<th>Did actioning the feedback substantially improve the quality of their work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>3 0 6 5 8 8 5</td>
<td>20 14</td>
</tr>
<tr>
<td>#2</td>
<td>2 6 3 3 4 4 2</td>
<td>12 12</td>
</tr>
<tr>
<td>#3</td>
<td>0 0 1 0 1 0 12</td>
<td>9 5</td>
</tr>
<tr>
<td>#4</td>
<td>2 1 6 4 1 2 1</td>
<td>5 14</td>
</tr>
<tr>
<td>Total</td>
<td>7 7 16 12 14 14 20</td>
<td>46 45</td>
</tr>
</tbody>
</table>

53%
... but if we look at students who received a score of 5, 6 or 7 in relation to using all of the feedback comments from their teacher.

Subsequent work did improve

Subsequent work did not improve
I think that the process - having a more refined process for my video feedback - has further refined my understanding of what I’m looking for. So, when you were saying, “I can see it. I feel like I’ve got more clarity,” for me, that clarity comes from having an even keener idea of - a keener sense of what I’m specifically looking for in that next draft.
Student responses following written feedback

My teacher values me as a student

- Very True (44%)
- True (25%)
- Somewhat True (17%)
- Neither true or untrue (14%)
- Somewhat untrue (0%)
- Untrue (0%)
- Not at all true (0%)

69%
Student responses following video feedback

My teacher values me as a student

- Very True (65%)
- True (26%)
- Somewhat True (5%)
- Neither true or untrue (0%)
- Somewhat untrue (4%)
- Untrue (0%)
- Not at all true (0%)

91%
College students: More modality matters
Feedback for Learning project

Survey of 4515 university students about their most recent feedback comments in terms of detail, usefulness and personalisation.

Students who received a digital recording as their only form of feedback had higher ranked mean scores than students who received any other single modality of feedback comments.

A Kruskal Wallis test revealed that there were significant differences ($p < .001$) between groups for ratings of detail, usability, and personalisation.
Students who received multiple forms of feedback had consistently higher ranked means than students who did not.

A Mann Whitney U test revealed that the differences between the two groups were significant for all three questions ($p < .001$).

<table>
<thead>
<tr>
<th></th>
<th>Single mode</th>
<th>Multiple modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detailed</td>
<td>18%</td>
<td>26%</td>
</tr>
<tr>
<td>Usable</td>
<td>29%</td>
<td>42%</td>
</tr>
<tr>
<td>Personalised</td>
<td>27%</td>
<td>40%</td>
</tr>
</tbody>
</table>
Feedback for Learning project
Survey of 4515 university students about their most recent feedback comments in terms of detail, usefulness and personalisation.

Students who received multiple forms of feedback, including at least one digital recording, had consistently higher ranked means that those who did not receive a digital recording.

The differences in ranked means between the two groups were also significant ($p < .001$) for the two questions relating to detail and intention to use to improve subsequent work, but not for personalisation.
Teacher perceptions

• Risks
  - There is a potential danger to not cover in as great detail all elements of submission – eg. in video we deal with bigger picture but when textual edits deal with the minutia of essay writing and arguments.

• Advantages
  – **Efficient** (quick to produce)
  – **Enjoyable** - intellectually stimulating, not repetitive
  – **Feels like a conversation** and providing valuable advice rather than solely justifying a grade
  – The video feedback can enhance pedagogical relationships
  – **Greater potential to include feed forward** information into the process which enhances the feeling of contributing to the overall development of the student rather than working with them for a discrete unit or semester

“I feel like a teacher rather than an editor”
There is no magic bullet

Modality itself is unlikely to be the only factor in these positive results

We need to consider complex factors including...

The affordances of the media, combined with rich media, social presence, feedback structure, lecturer/marker characteristics and student characteristics...