Technology Mediated Feedback: Powerful, Clear, and Personalized

Dr. Mike Phillips

michael.phillips@monash.edu

@thinkingmike

DER digital education research @ monash
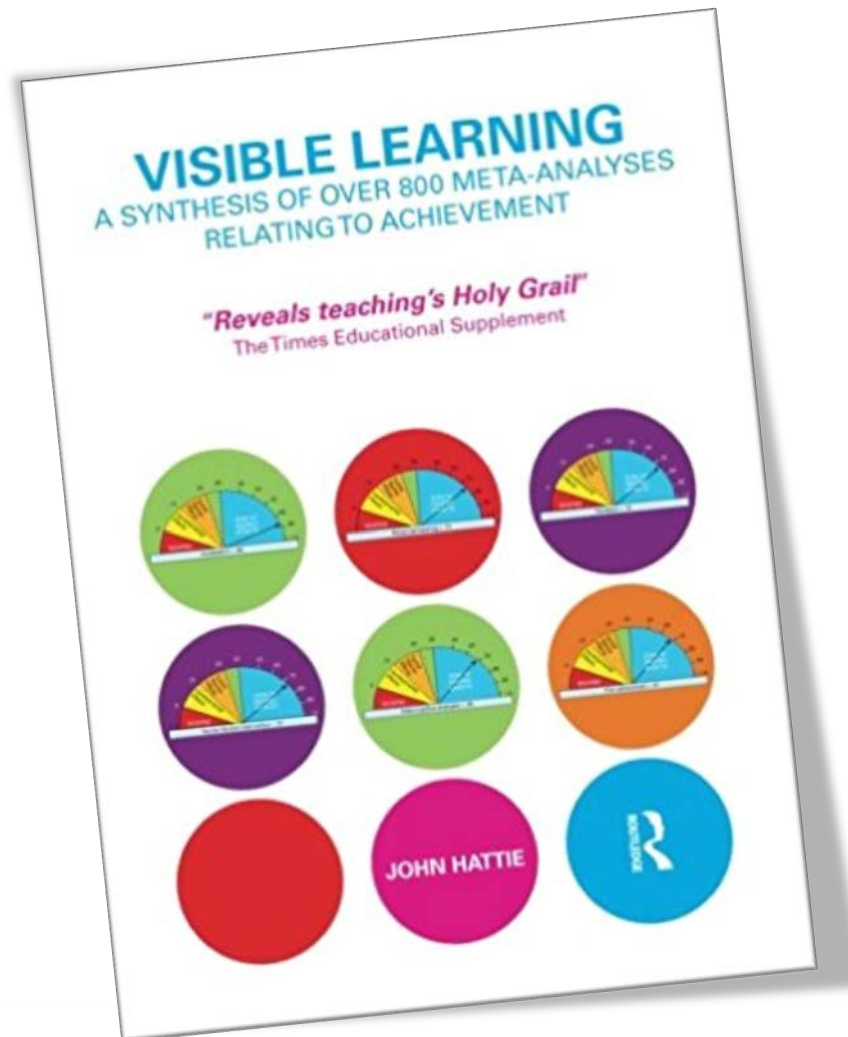
@DER_Monash

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.**

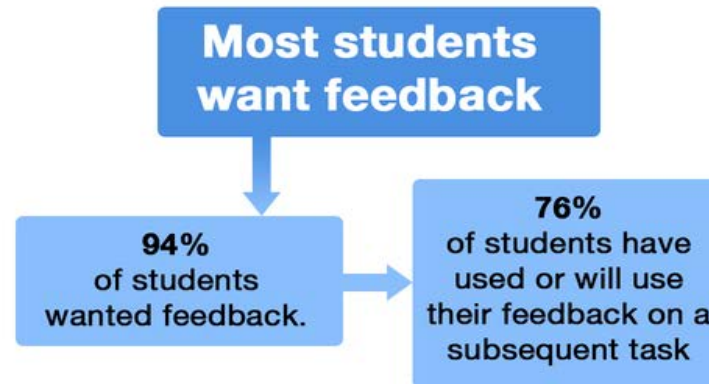# Feedback typically underpins the most powerful influences on learning

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

Most students want feedback

94% of students wanted feedback. → **76%** of students have used or will use their feedback on a subsequent task

But not all students are benefiting

Of students surveyed...

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.

The Conversation, CC BY-ND

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

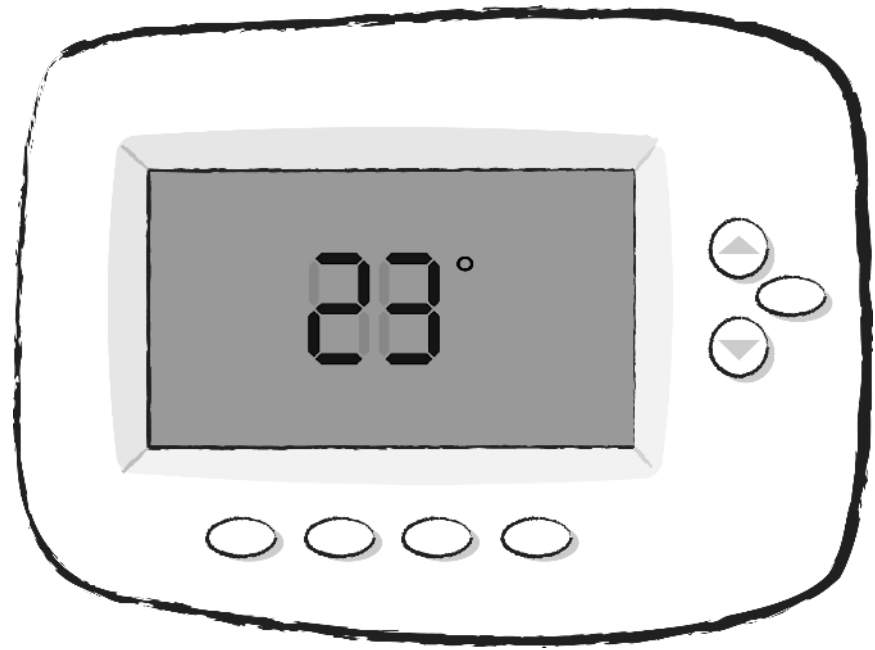"I left feedback on their final essays, which they never collected"

Feedback: hopefully useful information

Boud & Molloy 2013

Feedback by definition **requires impact**.

Feedback that has **no impact** on learning **is simply information.**

another

from

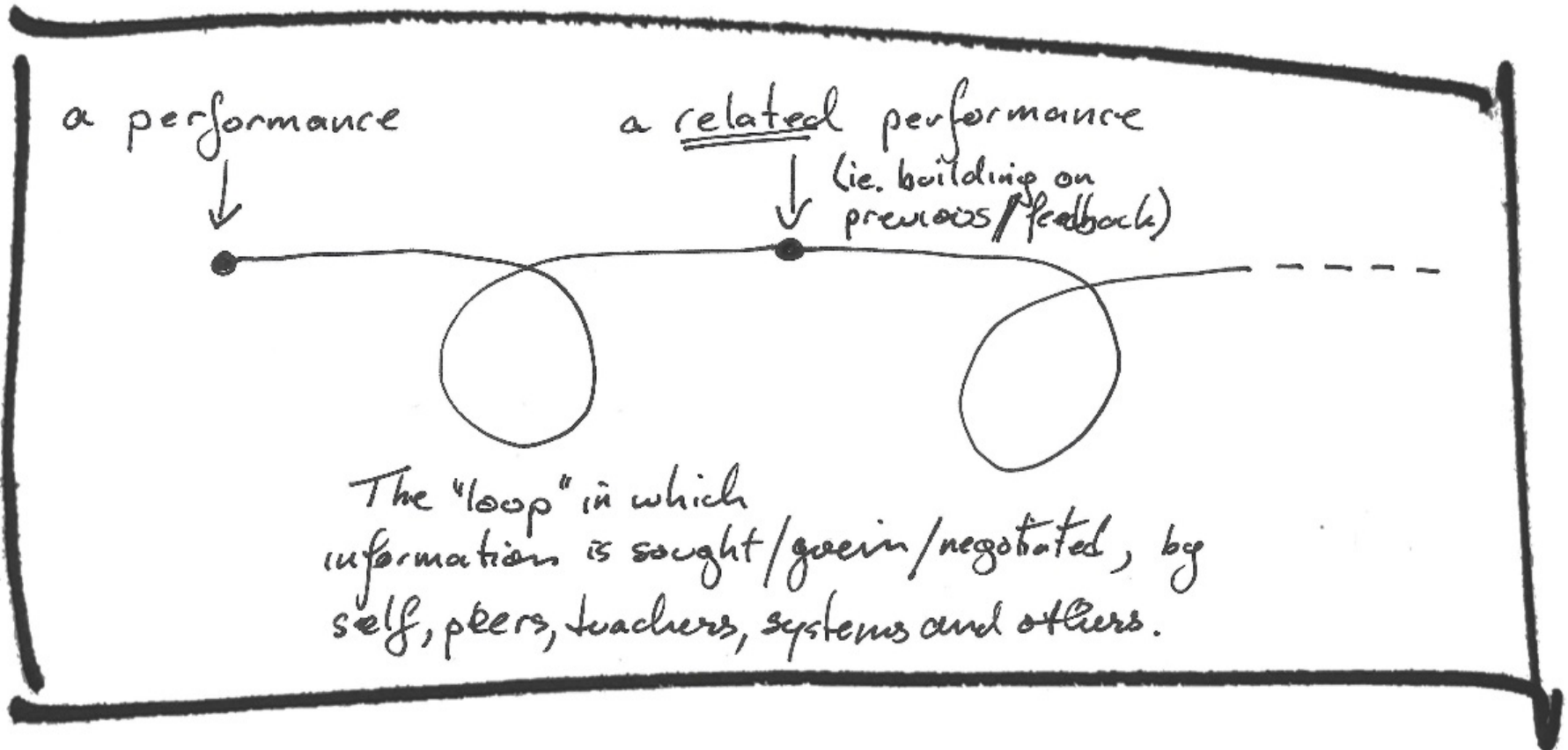point of

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

a performance   a related performance
                              (ie. building on
    ↓   previous feedback)
                              ↓

The "loop" in which
information is sought/given/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 Michael.Henderson@monash.edu
Dr Michael Phillips Michael.Phillips@monash.edu
Learning with New Media Research Group, Faculty of Education, Monash University, Melbourne

8 Principles for effective assessment feedback

Principle	Description
1 be timely	Give feedback while details are still fresh, and in time to assist the student in future task performance.
2 be clear (unambiguous)	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.
3 be educative (and not just evaluative)	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.
4 be proportionate to criteria/goals	More time should be spent providing feedback on the more significant goals of the assessment task.
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.

Extract from:
Henderson, M. & Phillips, M. (2014). *Technology enhanced feedback on assessment*. Paper presented at the Australian Computers in Education Conference 2014, Adelaide, SA. http://acec2014.acce.edu.au/session/technology-enhanced-feedback-assessment

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
  - Screencast / capture
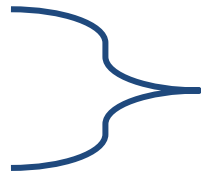
(group and individual)

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

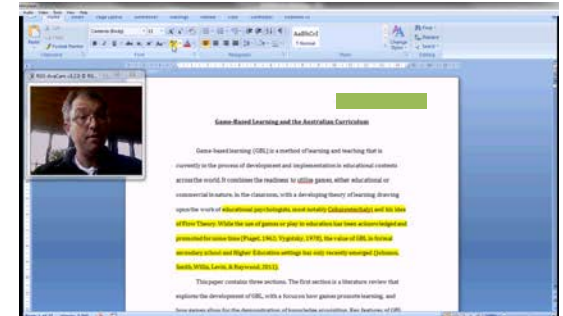# Where is the "on" button? How do I start?

Media and software

Audio	Video	Screencast
• Audacity • Soundcloud • Mobile apps	• Webcam with… • OBS • MovieMaker • iMovie • Mobile apps • Quicktime Pro	• 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

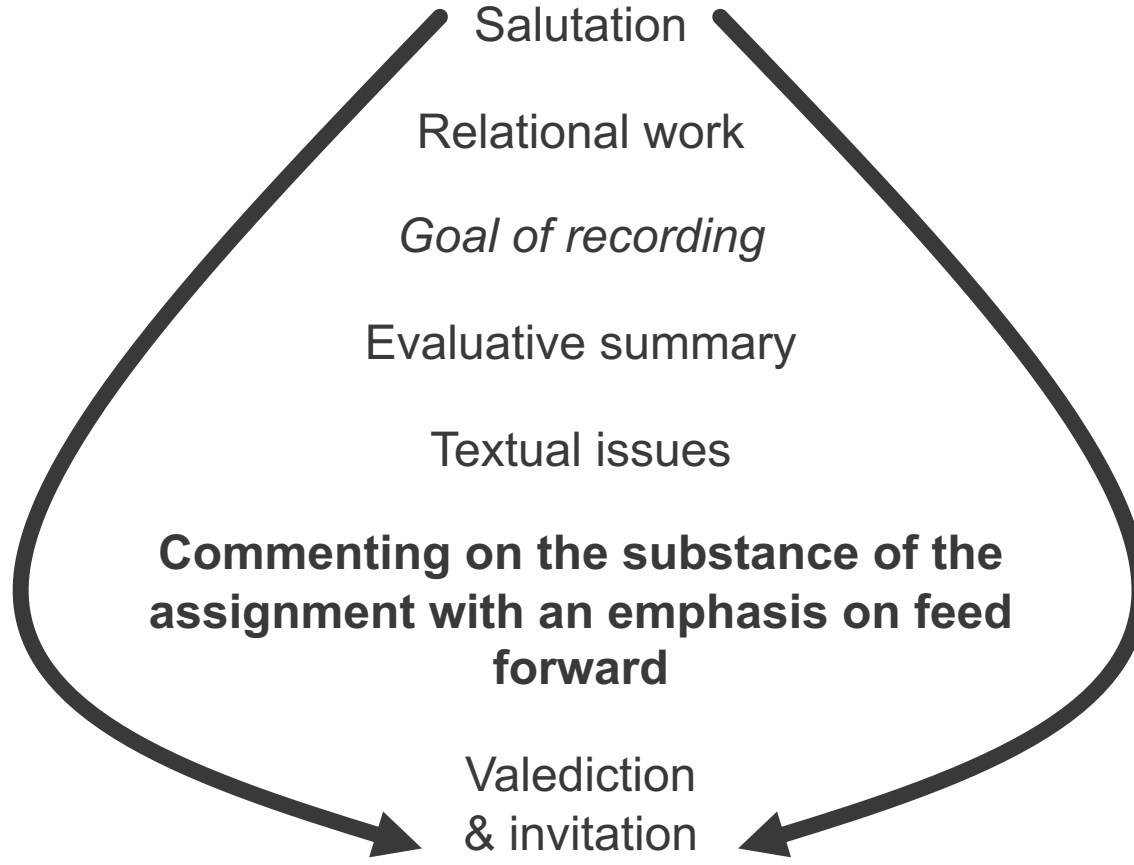# Video method / design

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

| Potential strengths	**Individualised & personal:** specific and valorising identity & effort
	Supportive: perceived as caring and felt to be motivating
	Clear: detailed and unambiguous
	Prompting reflection: on work done, process and thinking in terms of success criteria
	Constructive (useful): prompting consideration of future work, process and thinking
Potential weakness	**Initial anxiety** about seeing the assessor's face while receiving feedback (particularly if they feel that it may be negative)
	Matching feedback to assignment: sometimes effort is needed to find the examples in the assignment that relate to the comments

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
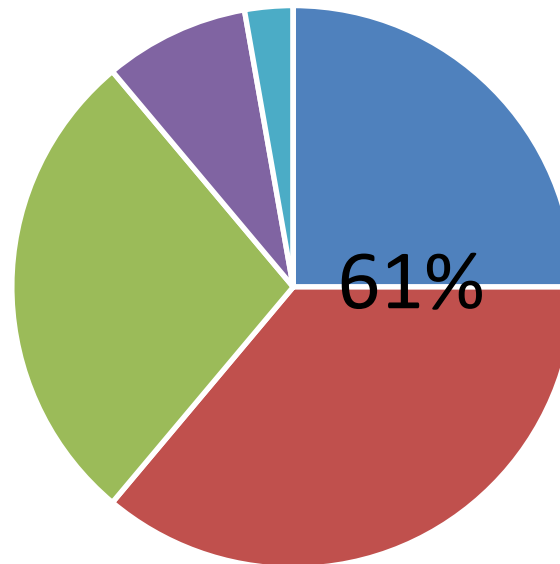
61%

- 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
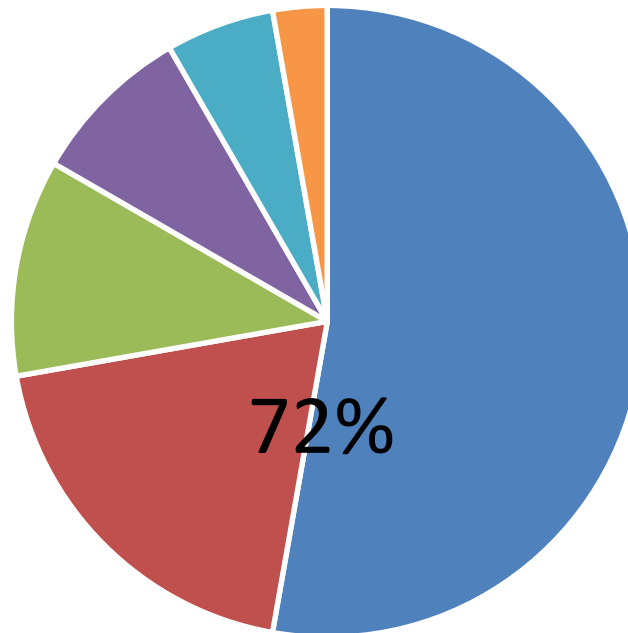
72%

- ■ Very True (53%)
- ■ True (19%)
- ■ Somewhat True (11%)
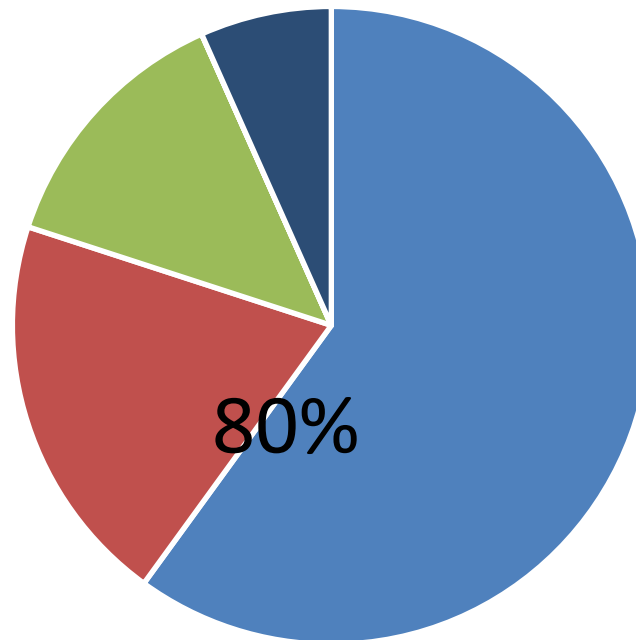- ■ Neither true or untrue (8%)
- ■ Somewhat untrue (6%)
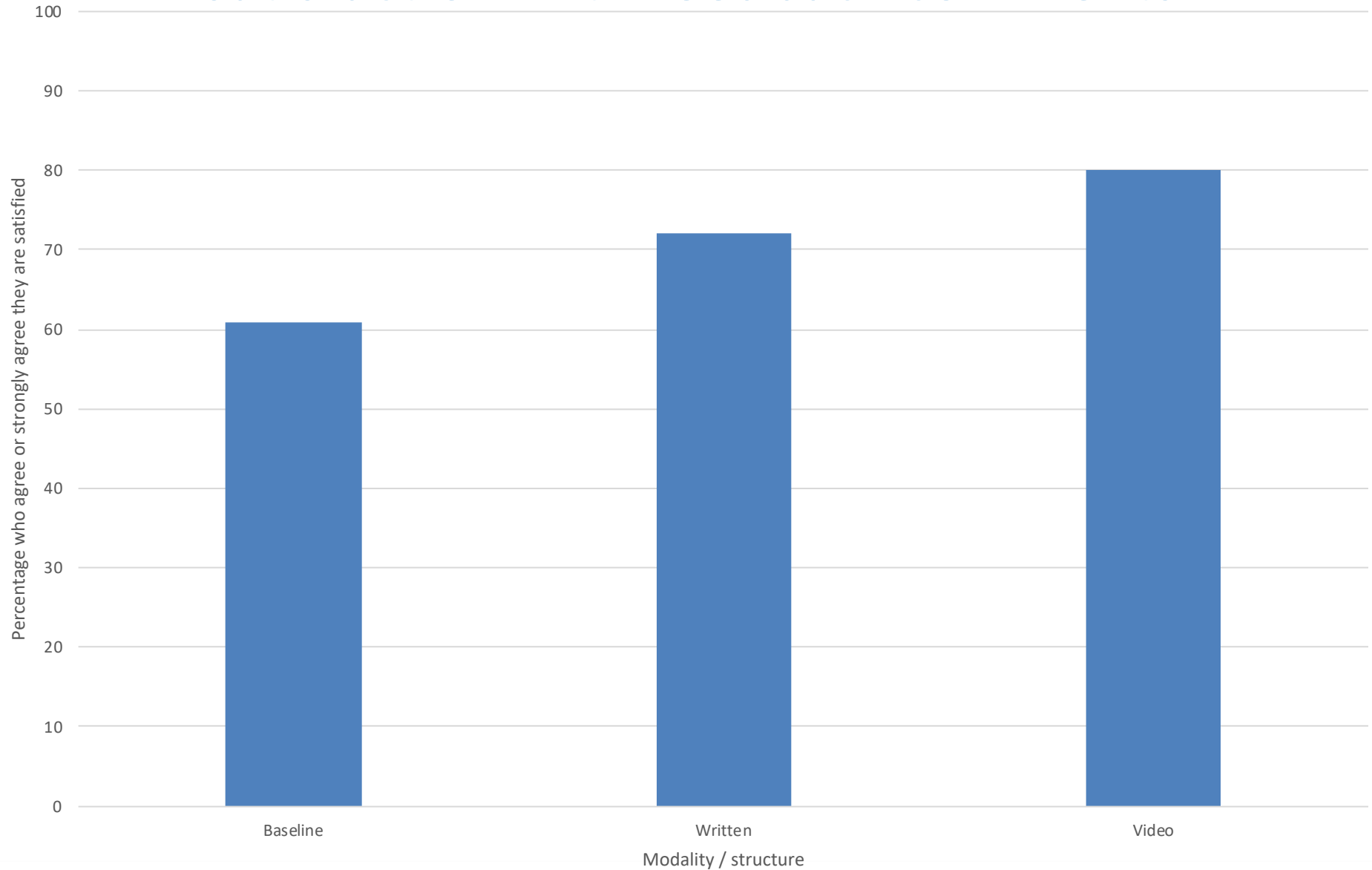- ■ Untrue (3%)
- ■ Not at all true (0%)

Video feedback - satisfaction

I am satisfied with the video feedback provided

80%

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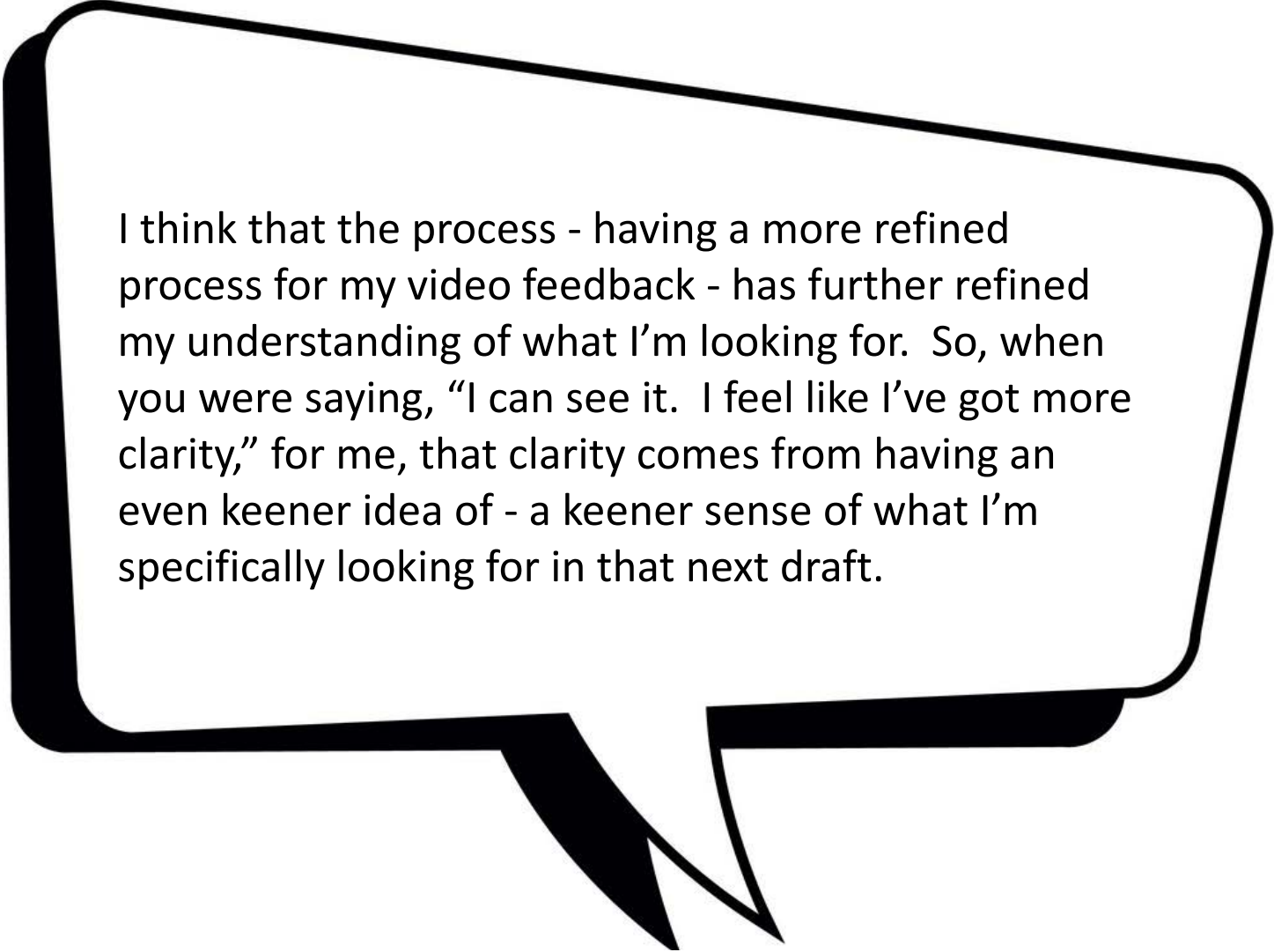
Teacher perceptions of use

Teacher	The student used all of the video feedback I provided on the draft to improve their performance on the final version								Did actioning the feedback substantially improve the quality of their work?	
	1 Not at all true	2	3	4	5	6	7 Very true	Can't remember my feedback	Yes	No
#1	3	0	6	5	8	8	5		20	14
#2	2	6	3	3	4	4	2		12	12
#3	0	0	1	0	1	0	12		9	5
#4	2	1	6	4	1	2	1		5	14
Total	**7**	**7**	**16**	**12**	**14**	**14**	**20**		**46**	**45**

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
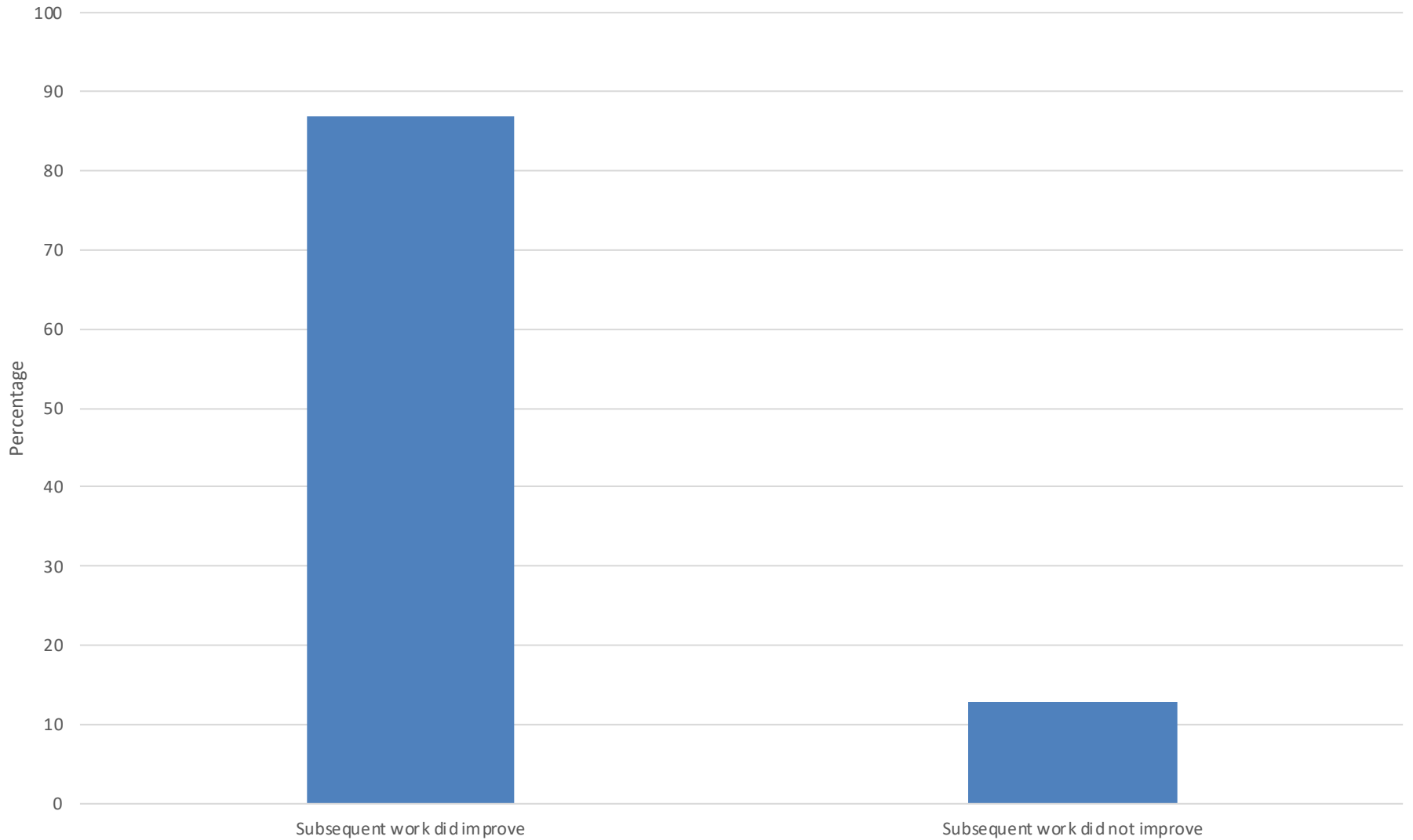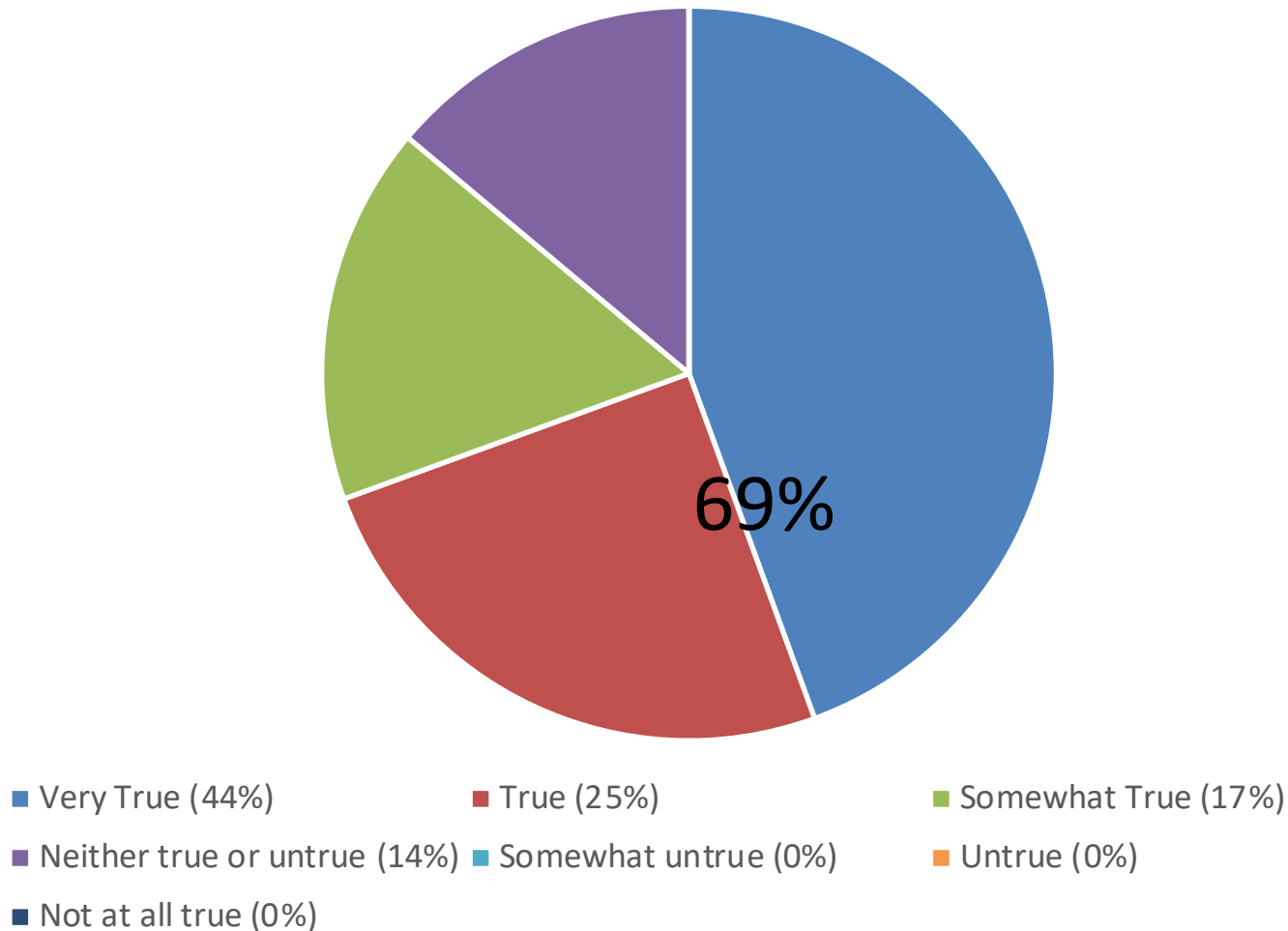
Teacher responses following video feedback

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.
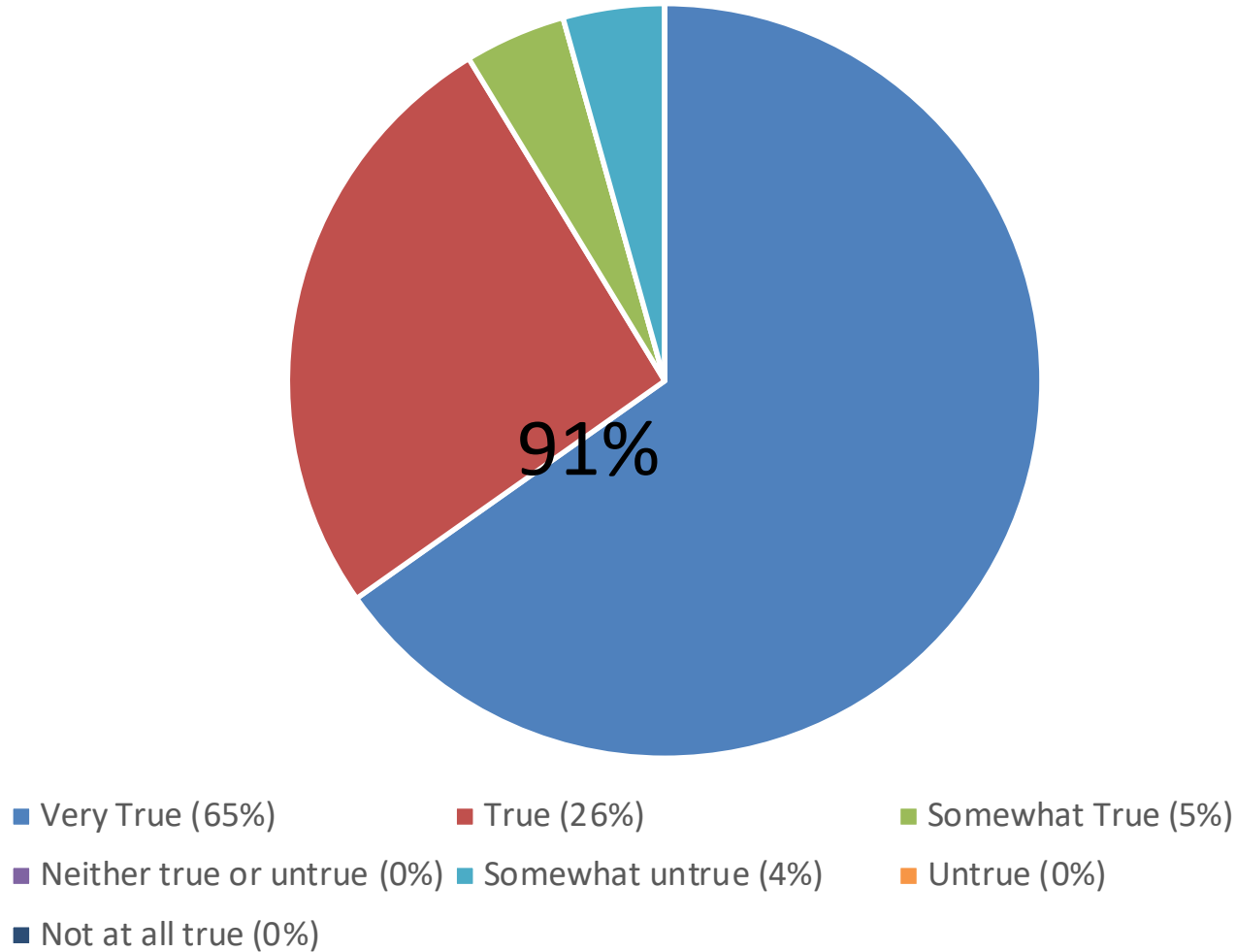
Student responses following written feedback

My teacher values me as a student

69%

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

Student responses following video feedback

My teacher values me as a student

91%

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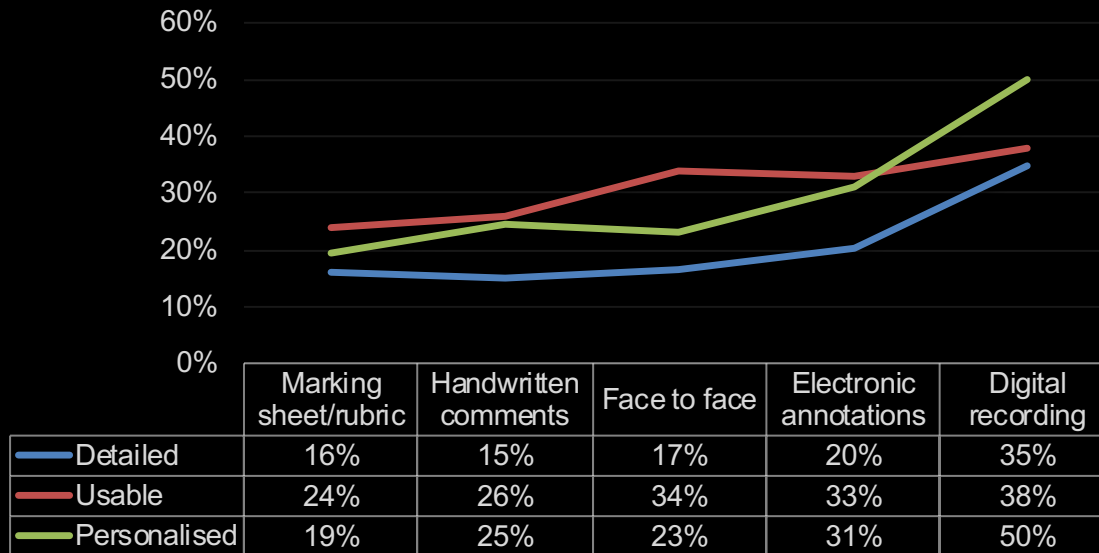- ■ Untrue (0%)
- ■ Not at all true (0%)

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.

% of strongly agree responses per modality

|	Marking sheet/rubric	Handwritten comments	Face to face	Electronic annotations	Digital recording
Detailed	16%	15%	17%	20%	35%
Usable	24%	26%	34%	33%	38%
Personalised	19%	25%	23%	31%	50%

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.

Feedback for Learning project

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

% of strongly agree responses single versus multiple

|	Single mode	Multiple modes
Detailed	18%	26%
Usable	29%	42%
Personalised	27%	40%
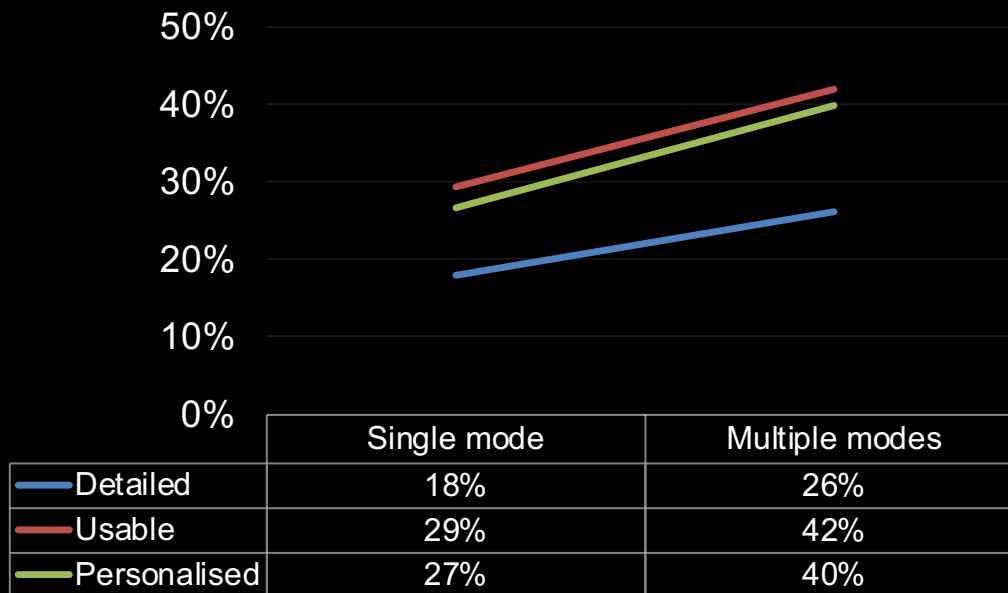
Students who received multiple forms of feedback had consistently higher ranked means than students who did not.

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

Feedback for Learning project

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

% of strongly agree responses for multiple with/out digital

	Multiple without digital	Multiple with digital
Detailed	25%	44%
Usable	40%	59%
Personalised	39%	50%
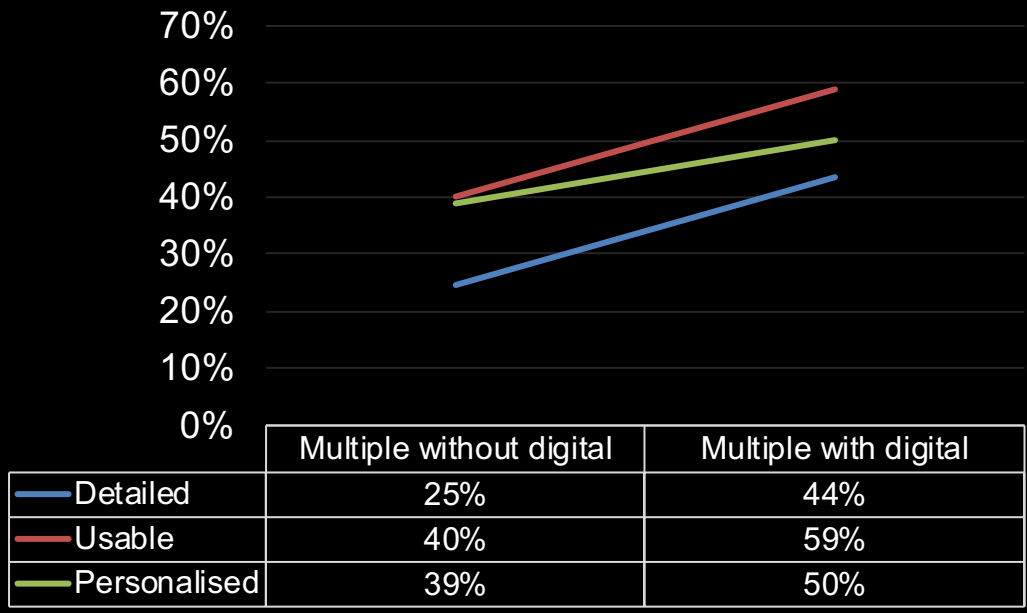
Students who received multiple forms of feedback, including at least one digital recording, had consistently higher ranked means that those who did not receive a digital recording.

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

"I feel like a teacher rather than an editor"

- **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

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...