Learning Lunch: Memory, credibility and insight: How video-based feedback promotes deeper reflection and learning in objective structured clinical exams

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- Memory, credibility and insight: How video-based feedback promotes deeper reflection and learning in objective structured clinical exams

- Alexandra Makrides –was a medical student at Keele and intercalated with Masters in Medical education

- Dr Peter Yeates - Lecturer in Medical Education at Keele University Medical School

- Journal - Medical Education

- Impact factor of 3.650 (2020)

https://tinyurl.com/LearningLunchPaper
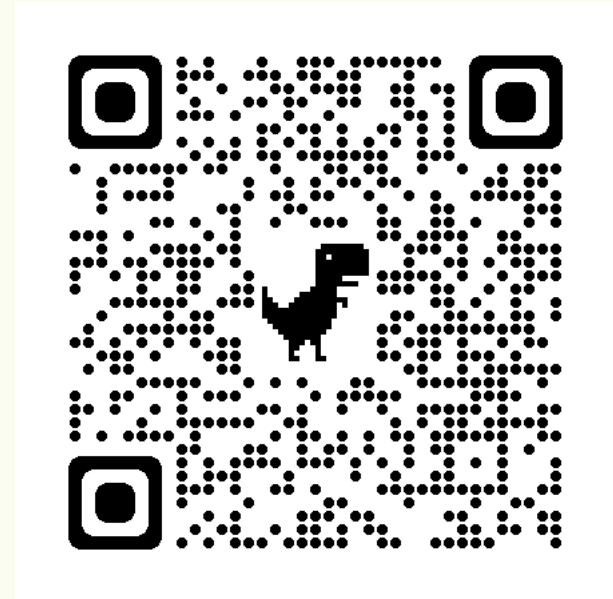
Learning outcomes

- To understand the rationale behind this research being conducted
- To understand how the research was carried out and be able to discuss the methodology used including a brief explanation of theoretical basis
- To discuss implications of the paper generally and consider how this may apply in a School of Medicine context

Overview of paper

Why did they undertake this research?

- Van der Vleuten (1996) stressed that assessment is a learning experience.

- High-quality feedback from Objective Structured Clinical Exams (OSCEs) enhances the learning experience but it is challenging.

- Prior research suggests
  - **Video-based feedback** (VbF) - may enhance verbal or written feedback
  - But little is known about how students experience or interact with VbF or what mechanisms may underly the benefits of this approach

OSCE Feedback at Keele

- OSCEs are scored using Keele's GeCos (generic consultation skills assessment tool (GeCoS)
  - Domain-based rating scales, which provide scores for several domains
  - A 7 point global score
  - Overall score between 6 and 27 per station depending on number of subscales.
- Examiner provides scores using GeCos & records verbal feedback
- Around 4 weeks after the OSCE students receive their marks, cohort averages, skill specific scores and the verbal feedback.

How? – Study design

- Social Constructivist stance, using grounded theory to collect data in semi structured interviews.

- Semi-structured interview to allow for in depth discussion and for interviewer to adapt questions based on previous response of participant.

- Fosnot defines constructivism according to four principles:
  - (i) learning depends on what individuals already know,
  - (ii) new ideas occur as individuals adapt and change their old ideas,
  - (iii) learning involves inventing ideas rather than mechanically accumulating a series of facts, and
  - (iv) meaningful learning occurs through rethinking old ideas and coming to new conclusions about new ideas that conflict with our old ideas.

- **Social constructivism** emphasises that all cognitive functions including learning are dependent on interactions with others. Therefore, learning is critically dependent on the qualities of a collaborative process within an educational community, which is situation-specific and context-bound

- Constructivism can allow us to focus on peoples' experiences of learning

- Further reading on constructivism in Medical education

- **https://tinyurl.com/LearningLunch170622**

Grounded theory

- Theory is generated from the data.

- The data has been systematically collected and analysed.

- The theory is therefore grounded in the data.

- The categories and codes are developed from the data.

https://tinyurl.com/LearningLunch170622-2

Population and sampling

- Purposive sampling— also known as a judgement or expert sampling is a type of nonprobability sample. Aim is to produce a sample that can be logically assumed to be representative of the population.

- Year 4 summative OSCE with 12x10 minutes stations recorded for prior research one station was made available for this research

- Year 5 formative 4 x 20 minute stations – one station was recorded specifically for this research.
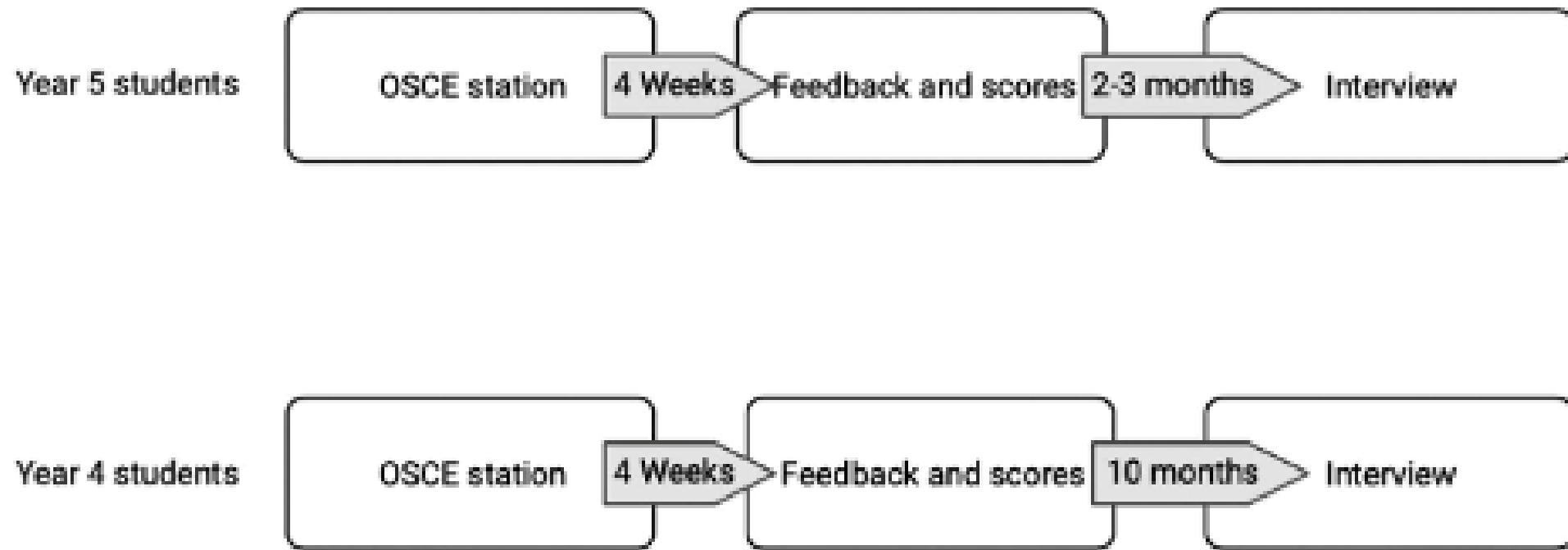
Figure 1. Timeline of participant activity.

Data collection

- AM interviewed all participants using online platform.

- Participants accessed & listened to their verbal feedback immediately prior to interview they were then asked to describe their responses.

- They then watched the video of their performance AM did not watch the video. Participants could not ask questions about their performance.

- AM then asked them about their perceptions of their performance now they had seen the video. There was a topic guide but AM could explore emerging issues.

- A neutral stance was taken neither commenting on the examiners comments nor student performance.

- The interviews were recorded, commercially transcribed, and then checked by the researchers. The transcripts were then uploaded for analysis using Nvivo Version 12

Data Analysis

- Transcribed interviews were analysed using grounded theory analysis methods

- AM read each transcript to develop familiarity with the data set

- Open coding completed sentence by sentence and then these were compared with raw data to establish emerging themes.

- Memo writing captured thoughts of AM during the data analysis – common practice in this method.

- Open codes were grouped into axial codes (making connections between the open codes). These where then developed into a theoretical concept

- PY also discussed and reviewed portions of the transcripts to provide alternative perspective
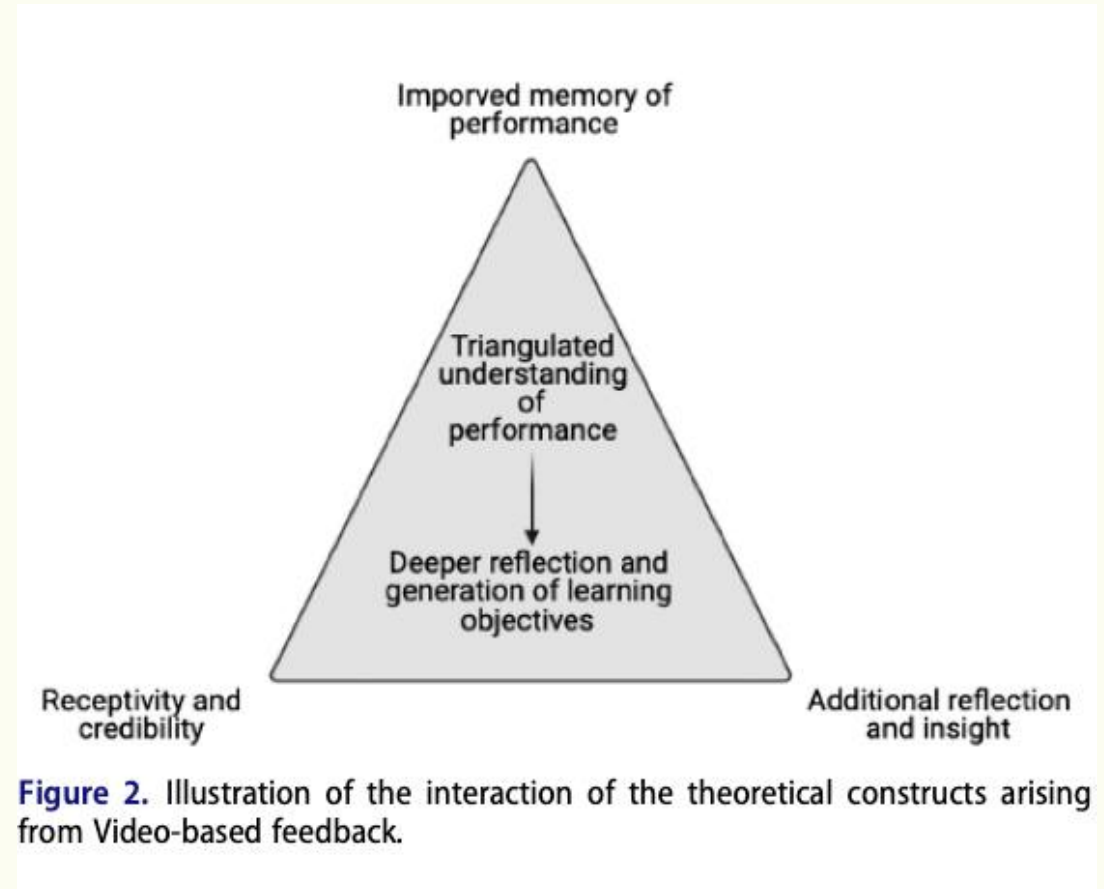
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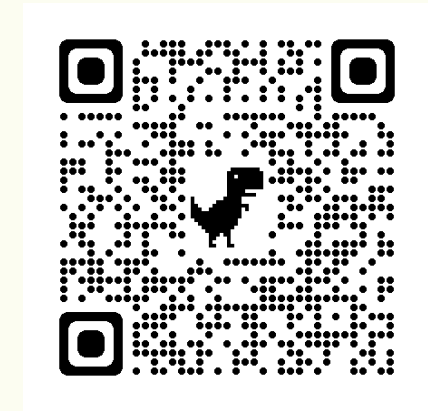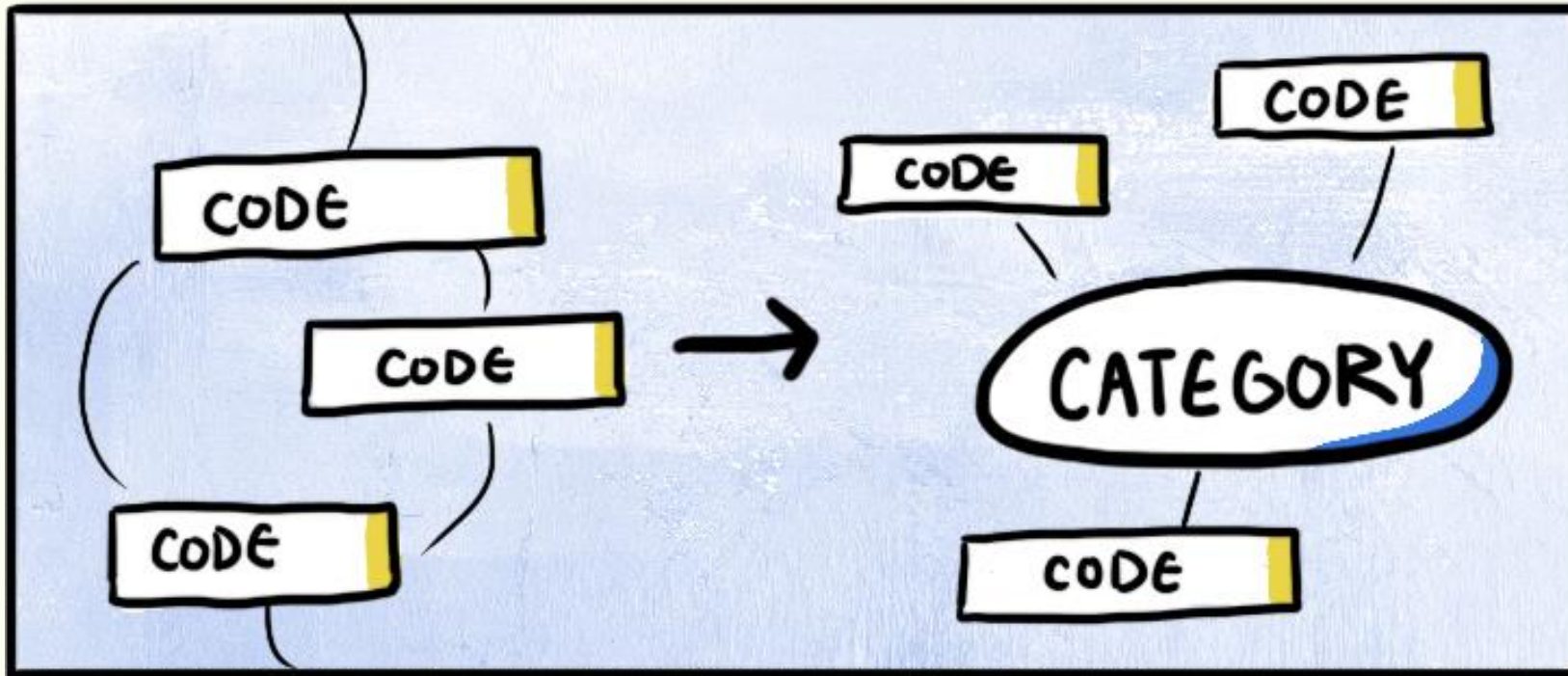
Reflexivity

- Reflexivity is about acknowledging your role in the research. As a qualitative researcher, you are part of the research process, and your prior experiences, assumptions and beliefs will influence the research process

- AM – lead researcher, training in grounded theory in their intercalated masters, had undertaken OSCEs at Keele but not with video based feedback.

- PY Clinician and Lecturer who researches technology enhanced assessment in Medical Education.

- *"Whilst both researchers were intrigued by the potential of video-based OSCE feedback to enhance assessment, neither has a direct motivation to ensure its success."*

Results

- 11 students were interviewed, 7 male and 4 female. 6 were undergraduates and 5 were graduates, 1 was an international student.

- Themes that emerged were interlinked to form this theoretical concept.

Imporved memory of performance

Triangulated understanding of performance

Deeper reflection and generation of learning objectives

Receptivity and credibility

Additional reflection and insight

Figure 2. Illustration of the interaction of the theoretical constructs arising from Video-based feedback.

Memory of performance

- *"When you're watching your feedback I could almost remember what I was thinking at the time, so there was certain questions I was asking and I was thinking I remember when I was asking this question I was thinking of this, this and this."* – year 5 male

"Then watching it you are like, oh gosh, I can see exactly why she said each thing in the verbal feedback" – Year five female

Receptivity and credibility

- Defensiveness was a common reaction to examiners' verbal feedback, even when it was phrased constructively. This occurred especially when the feedback conflicted with a student's self-perception.

- Defensiveness and negative emotional reaction reduced with video feedback.

- Stronger recollection of the station allowed them to understand the feedback in context and give it more credibility (than verbal feedback alone).

- "*Like I said earlier, she said about the red flags and I did go through some of them and when I was listening I was, I did say that, I did say that. So there're a couple not that she missed, but maybe I asked it in a different way.*" – Year five male

Additional reflection and insight

- Video clarified points made in the audio feedback and participants often gave a broader interpretation of their performance than narrow verbal feedback.

- Participants focussed more on own body language and communication style than on medical knowledge.

- Participants felt there was a need for SP feedback. Video allowed them to really see the SPs reaction.

- One high performing student did not appear to gain much from the video feedback and struggled to formulate learning objectives. Students commented that it would be more useful in stations that had performed poorly in.

Triangulated understanding of own performance

- Triangulate understanding of prior OSCE performance, belief about ability in clinical practice and current OSCE performance and construct a qualitative self assessment of their ability.

- One participant put it *"...but when you watch back the videos, you benchmark what you're saying against what you normally say as well, which [the examiner] doesn't have that kind of comparison."*

Strengths and limitations

- Strengths research by fellow medical student may have facilitated more informal interviews, may have been more honest with a peer.

- Limitations – single school, all communication stations, all experienced examiners, different gaps between OSCE and Interview.

- Video-based feedback (VbF) enhanced participants memories of their performance, they were then more receptive to feedback (including that considered to be negative), understood it better and found the feedback to be more credible.

- VbF appeared to enable students to reflect more deeply, gaining a more detailed understanding of their performance which supported future learning. i.e. it added to their learning.

- VbF may be a powerful tool to support learning in both formative and summative contexts.

- For practice some potential for VbF for enriching OSCE feedback. However, there could be consequences for exam security and challenges to examiner judgments if in summative assessments.

Discussion

Thank you.

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