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Learning research methods with video

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Outline

• Video use can be simple and non-challenging
• But viewers are intelligent and content can be designed to be challenging
• Tackle mistaken theories first, before exposition
• Two examples: Research interview, random sampling.
Transmission model

• Video – demonstrations, lecture capture etc. seen as a form of transmission of knowledge
• Learners as passive receivers
Mistaken theories

• Learners rarely start with no understanding
• But often start with mistake theory – inaccurate conception of what is happening
• Much evidence for this in science and mathematics
• Students think they understand, but close questioning shows inaccurate explanations
  • Chi et al. 1994; Vosniadou 1994; Duit & Treagust 2003; diSessa 2006
• Saw this myself in verbal protocol testing of software
• Video may exacerbate this  (Yeo et al. 2004)
But – Intelligent learning

• Video image conveys extra
  – Enthusiasm of lecturer/teacher
  – Pacing of the material
  – Explanations addressing special difficulties

• Videos provide sense of embeddedness in real situations

• Students use video in interactive ways (pausing, replaying etc.)
Video can address mistaken theories

- Muller et al. (2007), in Physics, suggest people learn better, when presented first with incorrect understandings.
- Learners identify with this mistaken view.
- Video then challenges these mistakes.
- See also https://www.youtube.com/watch?v=L7u9fKtb6s4
Derek Muller’s videos (Veritasium)

Where Do Trees Get Their Mass From?
QUESTION

• Will this work in the Social Sciences?
• Range of theories
• Contested subject matter.

• Thus focus on research methods because subject matter more agreed upon.
Two approaches

• Skills based activity
• Tutor points out mistakes
• E.g. Undertaking Depth Interviews

• Knowledge based learning
• Others express mistaken views
• Then video addresses these.
• E.g. Designing random survey samples
The Research Interview

How to do a research interview
Example with corrections

• Mini lecture on good practice
• Bad example interview
• Bad example with interspersed voice commentary
• Good example with text annotations
Student feedback

- From YouTube
- “This video is really very enlightening. Now I will be more careful not to make some of the mistakes pointed out in the clip, Sometimes it is easy to get carried away and forget important interview good practices”
- “I do believe I would have made all of the errors pointed out had I not watched this instructional before my upcoming interviews. Seeing the vivid contrast of the two examples are definitely going to work in my favor. I feel more confident now. Thank you!”
Teacher feedback

• “Excellent sample that can be used to encourage discussion and demonstrate good practice in a education research setting”.
Stage 2

• Video on Random Sampling for Surveys
• Still to be made.
• Inspired by:
  – Dubious contents of Kahn Video
  – Very odd interpretation of stratification in YouTube video
• Will use these and some interviews (Veritasium style)
Big Problem

• How to assess change in knowledge and understanding
• In Physics there are existing, validated tests. None in social sciences ??
• Before and after test needed.
References

• D.A. Muller, J. Bewes, M.D. Sharma, & P. Reimann (2007) “Saying the wrong thing: Improving learning with multimedia by including misconceptions’ Journal of Computer Assisted Learning, 24 pp. 144-155