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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)



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



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.

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