

Viewing video in teaching from a wider educational perspective

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For the slides, references, etc. see:
<http://www.psy.gla.ac.uk/~steve/talks/videoSGC.html>

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Digital delusions & techno-centric amnesia

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New technology does not mean new requirements; functions, etc.

Digital natives:
 that students today have a big exposure to new digital media and styles and therefore are expert readers and writers of educationally-purposed versions of these media.

Learning to read / consume ≠ learning to write / author.

Computer scientists may be extra vulnerable to this stupidity because their discipline values new gadgets as a good in themselves.
 If you build something new, however useless, you are more likely to get published. Constructionism run mad.

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New technology is usually far behind old technology (1)

New techno means a totally novel education design; and is the one and only cause of all features (good and bad) that result.

Actually, video today is about where print technology was in 1850. Old technology goes on developing, but we are blind to this.
 A Ford model T is similar at a glance to a modern car (4 wheels, 1 at each corner,)
 But none of you could possibly drive one; while today people can fly to another continent; hire a car of a make they have never driven before; and drive away in it with no real training just a minute's introductory talk.

Novels. In say 1850 novels were divided into big chunks called "books" or "parts"; each of which had chapters; each of which had a number (ch.3), a title, and often an abstract at the top of the chapter listing the main incidents. Today novels often have no ch. numbers, no ch. titles and certainly no ch. abstract. They may just divide "chapters" by a blank space or a row of asterisks.

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New technology is usually far behind old technology (2)

Textbooks about that time, and still in 1920, had chapters with numbers and titles; but few illustrations, no index, no good way of searching. Still, they could be picked up and skimmed.
 Textbooks by, say, 1980 had elaborate contents pages, showing sections and subsections of chapters. You can pick them up and leaf through them and discover in less than a minute whether it would be any use to you; and in a few minutes whether you might consider adopting it. You can alternatively search its index for keywords of topics you particularly want to see if it covers.

Videos have none of this. They have the format of modern novels: notional chapters at best. They are (so far) suited to fiction; not to education.

Computer scientists should be extra ashamed about proposing videos for education because they are supposed to do a requirements analysis – the best source for which is old but more advanced technology.

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How to design video-authoring exercises for students

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How to design videos for educational use

If the videos produced by students are to be actually useful as educational resources, then we must note their properties:
 very poor random access; fixed speed, certainly much less capability to vary the speed of consumption to suit the consumer (a learner).

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Educational points

A big educational difference is between self-paced learning (reading as fast or slow as each learner needs; doing exercises as fast or slow as each needs); and synchronous learning (as in lectures and videos). Self-paced is much better for solo learning EXCEPT that synchronous interaction is necessary for discussion (interaction between peers, and between a learner and the teacher).

Chi has shown, contrary to some valued educational theories, that two learners watching a video of a tutorial together with a worksheet learn about as much as the learners who were filmed and could actually talk to the expert. That is just how valuable peer interaction can be for learning.

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Educational points

1. Self-paced OR synchronous activity.
 - a) Self-paced usually much better for solo learning
 - b) BUT synchronous is a pre-condition for human interaction

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Chi and video

2. Chi (2008):
 Two learners watching a video of a tutorial together with a worksheet learn about as much as the learners who were filmed and could actually talk to the expert.
3. Chi also proposes the ICAP framework for which activities produce the most learning.
 Note that her "interaction" means only human-human and NOT human physical button pressing.

Actually elsewhere she (and others) have shown that the kind of **action** that matters to learning is (only) action that requires the **use of knowledge** e.g. by **applying** it, or **translating** it from one format into another.

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ICAP framework (Chi's)

<Best>

- **Interactive** (with peers)
- **Constructive** e.g. generating reasons or "self-explanations"
- **Active** e.g. answering a closed question (e.g. an MCQ)
 - * Irrelevant physical interaction e.g. highlighting text as you read.
(so no useful mental processing)
- **Passive** e.g. listening
 - * Inattentive

<Worst>

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Educational points

4. Constructivism (actually, perhaps better thought of as re-construction of knowledge).
5. Lab demos: when naturally visual, then showing effects of a concept or law is valuable; especially if each learner gets to choose the values etc.
6. Learning a skill is quite different from learning facts/concepts. Reading and writing (consuming and authoring) are skills.
7. Train learners to consume / read / watch video. This is the other half of literacy than writing.

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Educational points

- 8. Critiquing others' work is valuable: you cannot write without having a critic in your head judging your work. Judging other work exercises and grows this evaluative judgement without which writing is not possible.
- 9. "Student generation of content"
≈ "Contributing-student pedagogy"
See Betty Collis' work.

Betty Collis (SGC. CSP)

I see her as the chief proponent of "SGC" = Student Generated Pedagogy.
But she tended to call it "Contributing-student pedagogy"

She ran classes for years where all the material was generated by the students for other students.
See her free downloadable book.

- A major step forward for constructionism, and consistent with ICAP;
- Learning through teaching (a form of mental construction)
 - Jigsaw learning designs.
 - Participation (community of learners)
 - "Meaningful" production i.e. producing something that is in fact, right now, in this class going to be used for things that matter to the users.

Educational points

10. But to be actually useful, these videos must be useful as education.

11. Education vs. entertainment.

OR: Learning motivation mode:

Goal driven learning vs. curiosity driven – [newspapers].

In HE, it is the former; in public-health the latter.

We learn a lot of essential survival-critical stuff in the latter mode, but it is not the mode that HE operates in much.

This dimension is about the overall goal which a user is seeking to satisfy, and an object is primarily designed to serve.

"Pyramid writing": half way between, where the reader is actively deciding all the time whether to read any more.

Educational points

12. "Personalisation" (my extrapolation from R.E.Mayer's term in his work on what he calls multimedia but is almost always video in his experiments).

The aspects of supposedly goal-driven education when students are influenced by the feeling (or lack of it) of a personal relationship with the teacher.

Seating position in lecture theatres

Podcasts to the class...

2cc:

Both lectures and videos have multiple parallel channels

(But most thinking is still as if they have a single channel; though multiple synchronised media all communicating the same thing at the same time but in different formats.)

2cc Two channel classrooms

"video" always means both vision and sound.

"Lecture" always means speech and slides; and perhaps a paper handout.

F2F speech actually always means not just the words but the "back channels" of gesture, posture, etc.

These are duplex – both "speaker" and "hearer" are broadcasting simultaneously.

Some classes use more than one broadcast channel and have students actively searching the internet and sharing this with the class in parallel with the teachers speech.

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A place to stop

For the slides, handout etc. see:

<http://www.psy.gla.ac.uk/~steve/talks/videoSGC.html>

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