

CERE slideshow 5:
Concepts and Empirical Results in Education

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Part A:

Constructivism
Social Constructivism.

The point is to brief you on common theoretical terms (however bad)

And to explain what theory teachers are trained in

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Constructivism

This is the single most used theoretical buzz word in education, but different people mean different overlapping things by it. So there's a spectrum from the weakest meaning that almost everyone subscribes to, to radical interpretations.

- Just telling is inadequate work: learners construct knowledge themselves
- Must attend to connecting new ideas to ones existing in the learner already:
 - To prior conceptions
 - To prior experiences (Laurillard public/private)
 - To future experiences (Laurillard public/private)
- Authenticity (connection to real world, to prior motivations)
- PBL (problem based learning)

Contrast to: constructIOnism: learning by building stuff yourself?

Constructivism (2)

So constructivism is always a statement about the learner and the (hidden) mental actions in the learner.

But some would say it is also a statement about what teachers should or must do.

Above all, to button their lips, refrain from telling, just prompt and get the learner to produce / construct the idea. Probably the key thing is say something always one step short of the conclusion you want them to draw: make them work, but work successfully.

Contingent tutoring; prolepsis (it works in rhetoric too); Socratic dialogue.

One of the (many) facets of Chi 2008 is her evidence that whenever the tutor gave feedback (told the answer) learning went down; whenever he got the student to produce explanations themselves, it went up.

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Social Constructivism (3)

The new buzzword now is "social constructivism".

Again, not enough agreement on its definition or even the issue.

Alternative (NOT identical) candidates for the issue:

- Social vs. individualistic aspects of learning
- Piagetian vs. Vygotskian accounts of learning
- *Sfard: Acquisition vs. participation metaphors for learning
- (Given that community is seen as an essential aspect): is it seen as consensual, conflictual, or absent except in acknowledging how much our learning "comes from" others. My earlier table is about this latter.

Probably ALL of these matter, but are not the same as each other (despite a lot of the literature).

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Social Constructivism (4)

Neo-Vyg. It's a different motivation system.

The Learning-aim (objective) is NOT a product but participation. E.g. Being part of a family, a club, a worker in this job

Behaving, "being" like a doctor (Shulman's example)

This is a fundamentally different type of goal for learning.

More on this later.

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APSC/bv-23

Learners benefit from others with and without special expertise, intention, or being personally known
+ indicates an activity initiated by the learner (proactive-ness)

Helper's expertise	Intention to teach	Personal relationship (contingent action)	Not personal
Unequal, staff, benefit not reciprocal	Intended	Teacher monitoring, Scaffolding of procedural skills + Ask a tutor	Lecturing, Writing a textbook, + Asking an expert
	Unintended	Role model (using a teacher as), (+) Imitating or observing someone more knowledgeable whom you know	+ Eavesdropping on strangers, Using a celebrity or hero as a role model, + Studying the career of a politician to gain similar success
Equal, peer, reciprocal benefit	Intended	+ Alternating roles e.g. testing each other, student reciprocal critiquing, The same but imposed by staff	Wikipedia, Anonymised versions of student reciprocal critiquing, + Posting a question to a forum Anonymous peer review.
	Unintended	Peer discussion, + Borrowing lecture notes, + Spying on, imitating, or observing a classmate you know	+ Comparing your marks or actions to the class norm, + Listening to classmates' questions and comments, + Mutual help with the process e.g. ask where the classroom is.

Draper: table from "Learning and Community", LICK 08.

Part B: Proc and decl

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Procedural vs. declarative knowledge

"Declarative" knowledge includes facts, concepts.
"Procedural" knowledge is knowing how to do something.

Learners may need testing on declarative knowledge but in fact they can test themselves; and more importantly, they can self-correct once they have noticed they got a fact or concept wrong. Human feedback is seldom essential, though getting them to **use** material in order to provide occasions for noticing their own gaps is important.
(Catalytic assessment; confidence testing;)

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Procedural knowledge

A fact is a single item: if it's wrong, there's no puzzle where the problem is.
Any procedure, however, is a long sequence of actions. If it's wrong (produces the wrong answer or effect) it is generally not clear which part of it was wrong. Diagnostic feedback is very important, though advanced learners eventually acquire sophisticated meta-procedures for self-diagnosis of failed procedures.
If you give me an essay and I just say there's something wrong with it, that is of little help. If you bake a cake, and when it comes out of the oven it is obviously bad, again you are often at a loss. Similarly if your computer program just fails, you don't know which line and which character is responsible.
Generally speaking, procedures have many more component parts; and learners are much more in need of both practice and helpful feedback in learning them.

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Feedback on procedural learning

The literature also supports this, that feedback has more positive effect on learning for procedures than for declarative material.

Hattie & Timperley (2007) "The power of feedback" can be interpreted as arguing that feedback on procedural learning is more important, because (only) it leads to transfer.

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So: procedural vs. declarative learning

Chick sexing is a procedural skill.
The Biederman dramatic improvement in effect converted a tacit procedural skill into a declarative one.
Quite likely, this type of manoeuvre would work in general.

Teacher training is a case for reflexive application of this; i.e. the evidence seems consistent with the idea that teacher skill makes a big difference to learning outcomes BUT is largely tacit i.e. encoded as a procedural skill but not much accessible to conscious reasoning.

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Part C:

Core disciplinary criteria (CDC)

(and when is feedback actually important?)

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Anomalous NSS result in 2009

The GU psychology dept. got rank 5 of 107 UK psy. depts. overall. *(The rank used in newspaper league tables says 3rd; the difference/reasons do not matter for the argument here, which use a more conservative estimate.)*

But we got ranks much lower than this for 19 of the 21 questions. How can the administrative merits (qus. 14, 15) outweigh the assessment and feedback questions (5, 6, 7, 8, 9) by such a great amount?

This is impossible to explain if the NSS is measuring the importance of feedback.

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Rank	Qu.	Qu.text
1	14	Any changes in the course or teaching have been communicated effectively.
2	15	The course is well organised and is running smoothly.
5	22	Overall, I am satisfied with the quality of the course.
8	6	Assessment arrangements and marking have been fair.
8	11	I have been able to contact staff when I needed to.
8	16	The library resources and services are good enough for my needs.
11	13	The timetable works efficiently as far as my activities are concerned.
16	1	Staff are good at explaining things.
35	5	The criteria used in marking have been clear in advance.
54	7	Feedback on my work has been prompt.
79	9	Feedback on my work has helped me clarify things I did not understand.
101	8	I have received detailed comments on my work.

Outline (1)

The major steps in my argument are:

- The department's **anomalous NSS result**: 5th best of 107 in the UK on overall course satisfaction, 101st on feedback.
- Feedback is only important for **learning procedures** not for learning declarative material (facts and concepts).
- feedForward** is as important as, or perhaps much more important than, feedBack. (So having no feedback at all is fine if you have feedforward.)
- Most of the value of feedback is in helping learners to understand **core assessment criteria** e.g. critical thinking. These difficult criteria are core to, and definitive of, the specific discipline. (CDCs)
- The dept.'s course** gives little feedback, but much feedforward, focussed on procedures not content, and specifically on CDCs.
- A 2nd course design** in another discipline has outstanding results, appears different, but actually has similar features.

Core disciplinary assessment criteria (2)

There is a real sense that the central learning aim of a history degree is to learn to write a history essay.
 In psychology, to write a psychology essay.
 In physics, to demonstrate analysis, reasoning and calculation like a physicist (not like an accountant, or mathematician, or logician)

So the department's programme design in levels 3 and 4 could be redescribed as investing 100% of its tutor time in focussing on equipping the students with the ability to display critical thinking (of the kind a psychologist values). It invented a type of coursework ("critical review") that announces to students what the main point is; it requires them to produce 3 month long pieces of work focussed on it; but also marks their exams with this requirement applied.

It is the hardest thing students must learn; the most important thing; almost all our teaching investment is put into it; and the students rated us 5 out of 107 in the UK.

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Core disciplinary assessment criteria (3)

So on this account, the key question for each discipline is:
 What is the assessment criterion that is closest to meaning:
 display thinking like a scholar in this discipline?

Many disciplines in HE already have much of their assessment organised around a single standard format that exhibits this thinking style e.g. essays for most Arts and SocialScience subjects (but actually, quite different essay types depending on the discipline), "problem solving" involving calculation i.e. inferential maths in most science and engineering.

The argument here is: Focus the feedback more effectively, not on the assessment format (i.e. not simply do lots of essays or whatever) but on learners grasping the core criterion.

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Core disciplinary assessment criteria (4)

In my dept. by having major coursework focussed on the most difficult criterion ("being critical") was part of this. And by having them spend 3 months, rather than the 60 minutes of an exam essay, allowed more focus too.

But I've had promising results from a 5 minute version too: I.e. the radical change in time scale can also help focus on the criterion by changing context.

Reciprocal peer critiquing using the "criticality" criterion also may help here: I.e. exercising the same criterion as a reader-critic as well as as an author.

All of this could be done for other criteria e.g. spelling, reading recent not old literature, etc. But you wouldn't expect the same rewards. This is about focus, not universal tips/approaches to feedback.

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Outline (5)

The conclusion I'm coming to is that feedback effort on a course should NOT be evenly distributed (as you would expect if you believe that feedback is generally necessary for learning), BUT should be extremely selectively targeted on:

- a) Procedural knowledge (not declarative, conceptual knowledge)
- b) Core disciplinary assessment criteria (CDC) e.g. critical thinking

I.e. CT is a criterion in the exams (in all assessment); it is crucial to "being a psychologist" I.e. demonstrating thinking like a psychologist; it is the hardest thing for a student to learn; it is where the bulk of both student and staff time is invested.

Hence success (even if this is a post-hoc, not conscious, rationale)

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Part D:

RPC, microCT

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My current recipe for RPC

Reciprocal Peer Critiquing (RPC)

Psychology level 3 undergraduates.

Done twice, first with past (already marked) work; second for new coursework before submission.

- Students bring in and exchange work
- Prefaced by 1-3 questions they particularly want comments on
- Each critiques 2 others, address criteria plus the questions; rubric: best and worst feature
- Round table, F2F feedback, tutor chairing

My current recipe (2)

Always goes down well with my students, once they've done it.

See Morrow (2006) for evidence.

Most enthusiastic about seeing how other students write, but also about getting feedback.

Perhaps best indicator is that having done it the first time, they commit to finishing the next bit of work a week early to allow time to do it then.

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Prompt sheet

Criterion 1: quality of literature research

What's good?

What could be improved?

Criterion 2: quality of the write-up

i.e. well presented and clearly structured?

What's good?

What could be improved?

Criterion 3: quality of Critical analysis

What's good?

What could be improved?

Prompt sheet 2

This rubric was for an English course:

What is the issue that the draft is addressing? Is it interesting, or do you care?

Say what you think is the argument of the draft. If the argument is not clear, suggest what a possible argument might be.

What reasons does the writer offer to support the argument? (You may like to break down the argument into quasi-syllogistic premises or to identify a Toulmin-style warrant for the argument).

Suggest a counterargument to the argument of the draft. This comment may, alternatively, point out unexamined assumptions and/or missing or unacknowledged evidence.

Identify a characteristic sentence of the writer. Say what you think is good about this sentence, or how this sentence can be improved (your chosen sentence may simply identify a repeated writing fault)

Reciprocal peer critiquing: boxes ticked

Boxes ticked = principles enacted:

- Peer assessment (the peer voice)
- Exercise the criteria from another viewpoint
- Peers see each others' work (resource for remedies)
- See how own and others' work compares in quality
- Learners proactive in formulating feedback questions
- Can act on feedback directly (in 2nd application)
- F2F delivery means dialogue around feedback, and not just clarification but multi-party discussion.
- Multiple opinions on same work: information on variability
- Teacher scaffolds first RPC, then leaves it to the learners

Big scale RPC

What about big classes?

As described, it works for groups of 2-6.

1. I've done it in a lecture group of 90 for short (100-200 word) passages: swap with neighbour and do RCP
2. Use software to manage it.
There is free software, and numerous papers reporting experience, on how to do it with big classes (60, 600, ..)
Quintin Cutts has some local experience;
John Hamer: google "Aropa peer"
3. Speed RPC-ing?

Anonymous vs. F2F feedback

Pro-anonymous: data protection, privacy

Pro-face to face:

- More useful and serious critiques are elicited
- Dialogue for clarification of what the feedback means
- Dialogue of a more open-ended and multi-party kind
- Get feedback on the feedback you gave
- Hear critical issues directed to others but relevant to self.
I.e. discussion of other work than only your own.

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The Vygotskian idea

Social constructivists, following Vygotsky, believe that for every form of thought there is a prefiguring type of conversation. That is where learners first grasp and start to join in this new type of dialogue; and later internalise it and so come to do it solo.

I make my students first exchange RPC comments round a table, face to face, with me there. This establishes the tone required: neither hostile, nor vapidly polite.

Then they can (and often do) do RPC without me there.

(This works without the irresponsibly glib, hostile, vacuous reviews often got with anonymous software-mediated RPC.)

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The Vygotskian idea (2)

Possibly, it would be good to introduce students to this by a still more graduated sequence. For example:

1. Tutor "models" the kind of comment appropriate
2. Small groups compose joint critiques
3. Solo students deliver critiques F2F
4. Solo students deliver this by email etc.
5. Informal (self-organised) student use

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Evidence from a puzzle about RPC (Reciprocal Peer Critiquing)

Morrow (2006) found strong student attitude support for RPC's benefits, but strongest for being able to see others' work.

I.e. they seem to say that getting feedback on their work is not as useful as simply seeing alternative possible ways of doing it.

That's also what I find repeatedly in oral feedback.

Price et al (2007) found the same.

This doesn't exactly match published theories of feedback.

Students believe it's useful after having experienced the process; and then act on their belief by doing it voluntarily. But it's not clear how to measure learning gains.

Not least because the gains may only be far in the future and certainly NOT on the current piece of work.

Science version?

That's all about essay based subjects: what about science?

Up to now, I've only talked about critiquing essays, for which human judgment (and uncertainty) seem inherent.

Would RPC be useful for science assignments?

In fact, perhaps. A classic problem with science students is that if (as is usual) the task requires a number to be calculated, they put down a number with no reasons, no "working" or derivation. Thus beneath the surface of a black & white topic are the same issues of providing explanations and reasons for your conclusions.

RPC reverses the learner's role, hoping to get them to appreciate in a new way why explanations are required.

Judging the adequacy for a human reader of a derivation is essentially like judging an essay.

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Part E: micro Critical Thinking exercise

I've also successfully used a further CT exercise in workshops:

In "revision sessions" for our students

In workshops with History students

In a Dundee workshop for students in a variety of essay-based disciplines.

The micro-CT portion takes perhaps 30 mins of a session. Here it is as instructions to students.

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The exercise

In a minute, I'll announce a topic.

From that moment you have 5 minutes to write something on that topic. Most people write a medium length paragraph: about 14 lines of handwriting (depending on how big or small your writing is).

It will then be marked for the format of critical thinking:

1. Mentioning alternative possible views
2. Giving reasons or evidence for the views mentioned.
3. Mentioning reasons against your preferred view.
4. Clear support for **one view in preference to** the others on the topic. (Not sitting on the fence)

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Peer marking

- Now stop writing.
- Swap your workbook with a partner
- Tear off from the back of the workbook a "structured feedback sheet"
- Read your partner's micro-essay, and fill in the mark sheet
- Return both essay and completed mark sheet to your partner.

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Why a micro exercise?

If you want to understand an underlying principle, whether conceptually or operationally, then it is good to vary (perhaps drastically) the examples and time scales on which to apply it, rather than always practising it in one narrow way.

That is why I believe this complements our 3 month critical reviews; and our 60 minute unseen exam essays.

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Practising doing on the spot essay plans

Even very good students often don't believe staff really mean it when they say (or write) that marks will go for the quality of the argument, not reproducing Teacher's opinion / view of the truth.

A student in a CT-focussed history class said when interviewed that he only believed it after the first work had been handed back, and he and his friend both got high marks even though they had argued for radically different conclusions.

A prize winner in last year's psychology graduating group told me it was only during a revision class that she had finally "got" that displaying CT was what counted. I made them repeatedly take a sample exam question, sketch out an essay plan, then discuss it aloud. This requires them to assemble an argument in a few minutes: to play at reconfiguring their knowledge.³⁷

Part E:

Contingent Tutoring (Wood)

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Contingent tutoring

Wood et al. (in 3 papers) report experiments to establish the optimal tutoring technique, which they called "contingent tutoring" (c-tut).

("Contingent" means 'logically conditional upon' some aspect of the situation).

Although applied to young children in a task like a 3D jigsaw, I see this as an exemplar and yardstick of ideal teaching.

C-tut means adapting the level of the tutor's suggestions continuously depending on whether the learner is succeeding or failing. The more they fail, the more the comments are made more and more specific and concrete (put your hand there ...). The more they succeed, the more abstract the comments should become (what about doing a corner next).³⁹

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Contingent tutoring (2)

Consider showing a newcomer the way to a place; or receiving such instructions. If I let myself be taken somewhere, I often don't remember the route. I need to be trying to take the decisions, while having a lot of guidance.

When I really want someone to learn a route, I constantly stop; have them look round and tell them where they are; etc.

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Contingent tutoring (3)

The data supported Wood et al.'s theory.

An interesting additional observation was that the c-tut, although the best tutoring method, appears to be unnatural. It is not seen in care-givers; and the research assistants, even though hired and trained to apply c-tut, nevertheless were not very good or reliable at it.

It is not being as helpful as you could be: which is unnatural.

But actually, it is being unhelpful about speedy and accurate **doing** (of the task), but is (if we follow Wood) being helpful about **learning**.

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Contingent tutoring (4)

It is interactive.

It means Teachers adapting their behaviour continually to the individual learner.

It was applied to a procedure (building a jigsaw), not to declarative content e.g. learning facts. As argued earlier, procedures may be hard to learn otherwise because so many things all have to be right for them to succeed. In c-tut, the teacher holds the overall activity together even when the learner hasn't a clue about its purpose and structure.

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Contingent tutoring (5)

Many (HE) teaching practices only work for learners at one fixed level of competence: c-tut reminds us that in general, we need one kind of behaviour (highly scaffolded, "spoon feeding") at first / for novices, and quite different kind (a few high level hints) later on / for expert students.

C-tut seems therefore to imply that:
Treating all students the same,
or having the same timetable and support throughout a year
are therefore
NOT fair, good, "equitable"
BUT bad teaching.

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Part F:

Dialogue (and feedback)

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Dialogue

Contingent tutoring tells us (among other things) that feedback must be at the right level of detail to be useful for learning. In Wood's work, this was because the tutor could see from the learner's visible actions and past response to instruction, what that level was at a given moment. In general, this is done by dialogue: by the learner asking questions or their response to the tutor. In dialogue, you see whether you are understood and correct the communication dynamically — and you don't have to take care to get it right first time. It is why monologue (e.g. writing) is much harder than dialogue (conversation). Laurillard's underlying principle of iteration and convergence is an educational version of this.

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Dialogue (2)

Applied to feedback, it means it is actually profoundly foolish to produce written feedback: feedback should be given in dialogue. (*class test with EVS*)
Feedback will be much more effective if delivered F2F and with dialogue learner <-> tutor.
It may also be better with peer dialogue as well.

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Sharing feedback

Get together with several other learners, and compare the feedback you each got. Generally this illuminates the issues. Or conversely, the tutor creates a comment bank: a set of the common issues.

- See what the tutor cares about (you might have done OK on the issue by accident without realising it was important)
- See if they gave a better or different comment on an issue that concerns you
- Much more economical of tutor time if not 1 but 100 students see each comment. And they are likely to write it more carefully and fully if the comment is only written once (but seen by many)

Giving generic feedback sheets gets this effect (cf. Mike Burton and L3 stats class). Everyone gets to see the issues, and can judge whether they apply to themselves.

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Dialogue (3)

Jigsaw: many L-designs that are close to Aronson's Jigsaw design have learners in small groups preparing materials, but then have them "deliver" them to a large group. This suppresses the dialogue. Aronson's design has a single "expert" learner deliver their specialist subtopic in a small group (e.g. 4 other learners). Obviously this is much more likely to promote dialogue between presenter and their audience; and any lack of clarity by the presenter will immediately then be addressed by questions and answers; making successful communication more likely and less dependent on the skill of the presenter. If you really wanted the audience to learn (as opposed to doing a token exercise to promote "presentation skills") then dialogue is important.

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Part G: Other feedback issues

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Feedforward

Feedback means commenting on a finished task or product.
Feedforward means giving advice during the activity.
Cf. maxi project supervision vs. exam marking.

C-tut is all feedforward not feedback. (The interventions are not responses to a finished activity or product.)

Feedback is also useful for learning when, but only when, the "same" task is done repeatedly.

Laurillard's underlying principle of iteration and convergence could be seen as missing part of the point (feedforward) if interpreted as about assignments; but if interpreted as about learning and understanding, then it is fine.

We want feedback on our current understanding: is it fully right?...

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Asking for feed back

With RPC or equally with tutor-marked assignments, another element is to ask the critiquer (marker) three things you would like comments on.

Sue Bloxham (Carlisle) has developed this so that students will only get feedback in response to such questions.

- Saves tutor time
- Gets learner thinking actively about feedback, so they are more likely to use it if given
- But crucially: can be the only way the learner will get feedback on the issue if in fact they are doing adequately so that the tutor would normally not pick it out for comment.

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Part W:

Chi (2008)

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Some comments on Chi et al. (2008)

I think this is a top-value paper: not only technically sound, but provokes thinking in many directions, some of them threatening my own views; many of them already touched on in this course. I will be working on this for a long time from now.

Her argument structure is in part explicitly like that of Bloom in his 2 sigma paper. Effect sizes, using 1:1 tutoring as the benchmark, and looking for other cheaper interventions to achieve as-good results.

For her: tape of 1:1 plus peer interaction plus active-learner (they have to actually solve the problems during the session, not just watch tape and/or chat).

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Chi (1)

Firstly: she claims to have shown that having learners watch a 1:1 tutorial on video is as effective as being the 1 learner with the tutor. (And following Bloom, this is probably the best possible teaching.)

If this is true AND if it generalises to other cases (than working on mechanics problems) then it will be **massively cost-effective** and we should be rolling it out (can't think of any better change to learning and teaching in HE).

Could we replace level 3 tutorials with this??

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Chi (2)

Constructivism.

She doesn't use the term much, but has for most of her career focussed on one particular interpretation that could be seen as "how to teach/learn following constructivism": self-explanations. i.e. the benefit to learning of getting learners produce explanations themselves.

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Chi (3)

Scaffolding: This is Wood et al.'s term, but Chi means the tutor tactic of prompting by a question to elicit an explanation.

Cf. My notes under constructivism (2)

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Chi (4)

This is consistent with the data of Mazur, Miyake, Howe, ...
And with the **Piagetian** interpretation that peers are the social stimulus that prompt learners to generate explanations (whether voiced or not); and it is this that causes learning.

A tutor is only effective to the extent they mimic this effect.

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Chi (5)

She uses her data to argue that these videos are most effective when the best students are in them. (not intuitively obvious).
Effective on viewers (vicarious learners i.e. watching the video), whether the viewer is a good or bad learner.

And she presupposed (from her earlier experience) that the best tutor would be best.

This suggests an element of **learning how to learn** from them: cf. Ann Brown and the Jigsaw classroom; and certainly not just getting the answers, or even getting the procedures.

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Chi (6)

Neo-Vygotskyian ("socio-cultural theory").

Is it the **style of conversation** that is being learned, disseminated, picked up and internalised??

Is it important that it is watched by pairs (of peers) and NOT solo?
Yes. Why?

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Chi (7)

Orsmond & Merry: good and bad learners do different things with feedback. Is this why tapes of good learners are more effective, even on bad learners? Seeing how to use input from the tutor better or worse?

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Chi (8)

Anti-feedback message: embarrassing for me, having worked on improving feedback.

Chi says she's shown that whenever the tutor gives feedback in the normal sense of the term: telling them where they went wrong and what they should have done, learning is reduced.

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Chi (9)

Challenges my interpretation of **contingent tutoring** (Wood et al. papers).

Her findings are consistent with theirs; but I want to build on it to say that contingent tutoring is optimal and so should be emulated everywhere.

She, however, implies that it's too hard to do; and with real tutors (even pretty good tutors in ideal 1:1 conditions) they just don't understand where the learner is well enough. Instead, generic tactics of eliciting explanations from learners is what works best.

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Chi (10)

But possibly, that is just the coarseness of her data analysis.

Perhaps really the tutors do show understanding of the learner; and the learner picks that up; and if they didn't perceive the tutor as understanding, then they would be less stimulated and less learning would be prompted.

It is possible to interpret Beebe's work on contingency to support my argument here.

(Beebe analyses, frame by frame, film of mothers and very young infants; and shows 2-way contingency, not transmission or domination in either direction.)

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Chi (12)

Deep and shallow learning distinction.

Uses only measures of deep learning in her analysis.

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**Part F:
end stuff**

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Example exam question

Does a learner in HE need a teacher? Do they need other learners to interact with? Discuss.

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Example exam question (2)

Is dialogic interaction an adequate theory of the important features of learning and teaching in HE?

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Example exam question (3)

Is the Laurillard model simply a generalisation of dialogic interaction as the heart of learning?

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A place to stop

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