

APEC:
Peer interaction
All the ways other people may
help a learner

(Beyond Laurillard (cont.))

1

Introduction

The homework exercise was to look at the table in my “learning and community” paper and web page; And to think of other examples that might fit in each cell.

Today’s lecture is all about this space of all the ways other people may help someone’s learning.

Course topics to be covered here:

- Peer interaction
- Metacognition
- Social perspectives on learning

The single most important aspect of this is peer interaction (something not addressed in the Laurillard model).

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Miyake and “constructive interaction”

Miyake (1986) got researchers round her lab to discuss their understanding of sewing machines.

Detailed analysis of the conversations showed that this was NOT teaching, yet both did advance their conceptions.

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Christine Howe’s work (1)

Long series of studies on peer interaction causing conceptual development.

Good selected paper:

Howe, C.J., Tolmie, A, and Rogers,C. (1992)

To get effect, need to work on setup:

Peers with different prior beliefs

Elicit commitment to their personal view in advance e.g. write their view, then show peers this opinion.

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Christine Howe’s work (2)

- Benefit is delayed (e.g. 4 weeks)
- Final view is different in solo than group interviews
- More advanced child ALSO advances further
- “not agreement but private conflict resolution”

⇒ Mechanism is metacognition
(Howe, McWilliam, Cross 2005)

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References

(Will be on my web reading list for APEC)

Howe, C.J., Tolmie, A, and Rogers,C. (1992) The acquisition of conceptual knowledge in science by primary school children: Group interacting and the understanding of motion down an incline *British Journal of Developmental Psychology* 10, 113-130

Hunt, D. (1982) Effects of human self-assessment responding on learning *Journal of Applied Psychology* 67, 75-82

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Metacognition

(Short note on it in handout 18)

It means understanding one's own learning processes. However the only strong evidence is for the simpler process of actively monitoring one's own understanding.

- Hunt (1982)
- Howe's work esp. (2005)
- Mazur (Crouch & Mazur; Hake)
- Teaching others;
- Student generated (learner authored) MCQs
- Snyder 1971
- My level 3 student reluctantly believing tutor only after her peers made the same comment

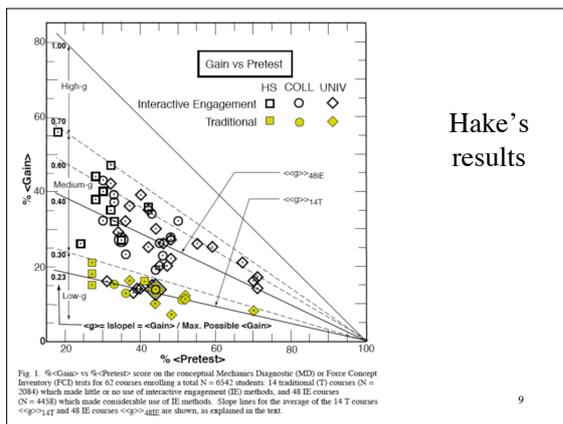
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Hake

Hake (1998) published a survey of 62 courses (6,542 students) all studying the same subject, all using the same standardised test, and using it both pre- and post-.

He graphed the mean gain on each course against whether or not it had used the method of "Interactive engagement".

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Hake's results

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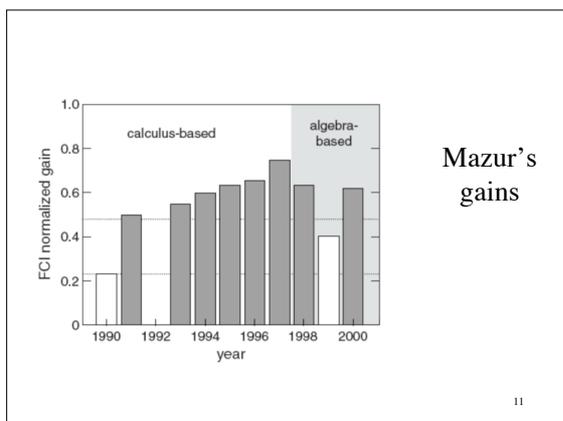
Mazur

Crouch & Mazur (2001) published an analysis of 10 years of Mazur's MIT course.

Again, the standardised pre- and post-test.

He concludes he has doubled the amount of learning, but the graph suggests that really, he tripled it.

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Mazur's gains

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Returning to my 3 dimensions

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Ways a learner may be helped by others

(See handout)

All combinations of these features are possible, and seen:

- Reciprocal: 2 way learning benefit, or not [**expertise**]
- Contingent help: prompted by what the learner just did, or not (**personal knowledge**)
- Intentional help, or not. (Do we have an instinct to teach?)

- *Learner proactive, or not, in initiating the activity*
- *Help on learning content, or on process (management)*

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