How to scaffold learning from lectures?

Lecture
+ can be an effective way to deliver rich information
— linear inputs, impossible to review without records
— not students but lecturer integrates knowledge

Retrospective interview 5 to 12 months after shows
— 45% of students reported nothing, 21% did only theme or setting (ex. materials or procedures), but
+ 16% reported results, and 19% did implications.
↓ At their end-of-lecture notes
+ 68% summarized results, and 71% did implications.
⇒ Positive effect of verbalization on retention

Scaffold 1: Commentable Movie Sheet on BBS

Scaffold 2: Guided reviewing in the class
1) Teachers clipped a lecture and selected the clips that include results.
2) Students were asked how they had been related in the lecture.
3) They were then asked what implications these results could have and to write them on CSOnBBS.

Research context and assessment
Cognitive science major sophomores; two semesters

2004th course

2003rd course

End-of-lecture notes

From comprehension to question asking

Implications are some abstraction of lecture contents, which enable students to locate each lecture in broader scope, for example, connecting it to other lectures or classes, or to own experience or knowledge.

How can it be possible, and how CSOnBBS supports this process?

Counting questions of levels 2 & 3 in both categories

2004th course
2003rd course

The number of questions dealing with the lecture itself increased first, then that of questions dealing with the relation between the lecture and its outside elements went up.

High-quality Q&A exchanges between T and S or among Ss promoted class culture of question asking though CSOnBBS.

On externalization * by MO 2003/11/26 17:39:56

Concerning to Lecture 8, I think that externalization of knowledge has been gained as our skills through many collaborative works in classes of CogSci. (Outside Level 2)

In problem solving, externalization of solving processes are important for confirming intermediate results. (Significance)

Sharing the processes * by HH 2003/11/29

I agree with you. Externalization of solving processes enables others to provide with new perspectives. (New Significance)

It reminds me of Luchins’ water jar problem and nine-dot problem, where the shareability of processes is a key. (Outside Level 2)

I wonder whether a single condition or a paired condition is better when they are asked to solve the Luchins’ problem without pencil, but I don’t have an answer. (reach for Level 3)

Luchins without pencil * by Teacher 2003/12/01 09:27:50

It’s wonderful to ask such a concrete question. (Level 3- appropriation) I have my answer, but you can go on to ask as:

(Luchins vs. Nine-dot) × (single vs. paired) × (with external records or not)

What do you think? (Level 3- RQ & Design)

“My postulate” * by HH 2003/12/04

About nine-dot problem, the paired members can not solve it easily without pencil, because they cannot see each other’s process. But about Luchins’ problem, where the paired members with pencil tend to try to complete own calculation processes and stuck in fixatedness, without pencil there may happen an exchange between the members like one verbalizing the calculation and the other checking it with the figure, which might lead to better performance. (Level 3-Hypothesis)