BETTY'S BRAIN

The role of feedback in preparation for future learning:
A case study in learning by teaching environments

Tan, J., & Biswas, G. (2006, January)
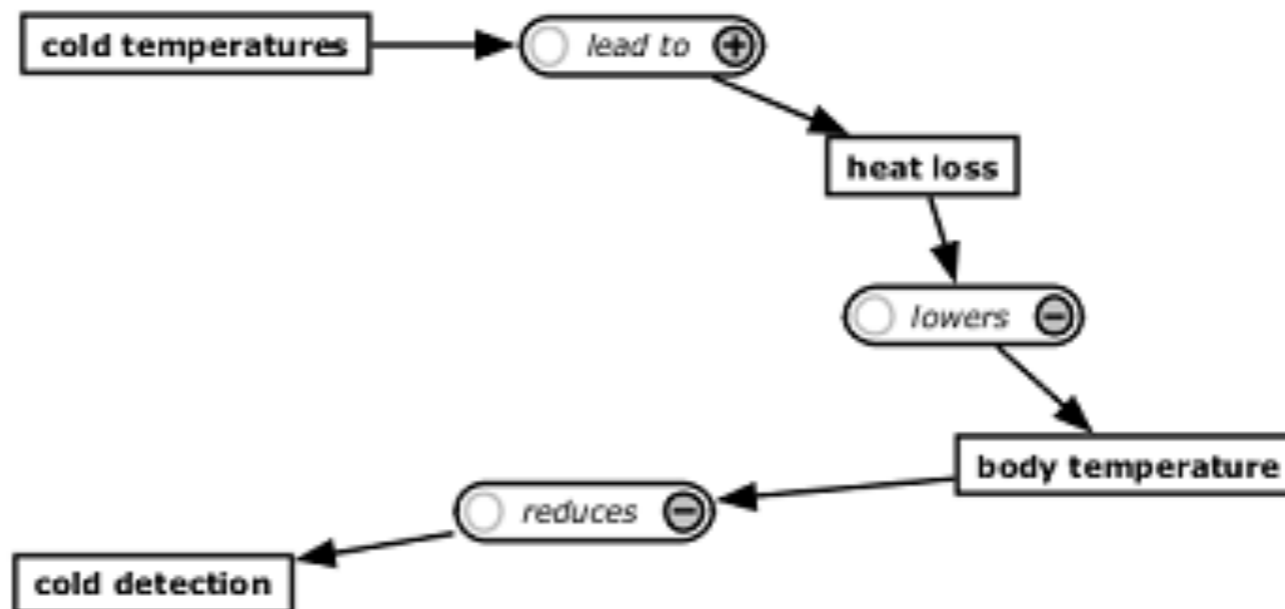
Causal Map | Resources | Quiz Results | Notes | Causal Link Tutorial | Marking Correct Links Tutorial

cold temperatures → ◯ *lead to* ⊕

heat loss

◯ *lowers* ⊖

body temperature

◯ *reduces* ⊖

cold detection

100%

Betty

Start Conversation

Mr. Davis

Start Conversation

Add a note

Conversation History

Conversation History	Conversation with Betty on Sunday, June 17 at 07:53 PM
Betty: Sunday at 07:53 PM	Betty (07:53 PM): Hey, what's up?
Mr. Davis: Saturday at 10:47 AM	User (07:53 PM): I need you to go take a quiz now, please.

Research Question:

Timing and content of feedback - do they affect "preparation for future learning"?

Timing: directed/corrective   ⟷   guided metacognitive

Content: cognitive   ⟷   affective

Method:

3 groups, 3 different versions of Betty's Brain (each has different feedback)

10 weeks later, Betty's Brain again without any feedback

➤   how well does each group learn?

Measures: (looked at how these differed between groups)

1. quality of concept maps
2. behaviours - quiz attempts, query attempts, use of resources
3. were 1 and 2 correlated?

Conclusion: Authors believe their results show ...

➤   guided meta-cog feedback better prepare for future learning in other domains

➤   type of feedback is important

cognitive content > affective content

Diagram: 3 Groups

2.&3. Self-regulated Learning (SRL)

Timing:

- Guided/Metacognitive Feedback from Both Mr. Davis and Betty
- User encouraged to reflect as their knowledge develops

1. Learning By Teaching (LBT)

Timing:

- Directed / Guided Feedback, Mr Davis to Betty
- Gaps in knowledge revealed after quiz attempt

2. SRL-Cognitive (SRL-C)

Content:

"Excuse me. You taught me a concept but didn't teach me any relationships between it and other concepts. Please teach me more and ask questions to make sure I understand"

3. SRL-Affective (SRL-A)

Content:

"Hey, I'm confused and I don't understand what you taught me. Please teach me more and ask me some questions"

Cons

Style
- Previous study mentioned, very similar and is not clear that this is a separate from the study in the paper.
- discussion of different feedback approaches (immediate/ directed/ corrective, self-sought, guided, metacognitive, affective) is slightly confusing, because they are not separated out and introduced individually.
- not clear, without using the software, the difference between versions and the meaning of expert and valid links.

Method
- No control group
- Do not clearly separate difference between timing and content (guided and metacognitive) and the effects that these might have separately.

Conclusion
- Draw conclusions from self-identified non-significant differences in data.
- Tables for the transfer task are not included, which makes it more difficult to look at how behaviours changed or were maintained across the 10 weeks.
- misinterpret a correlation

Pros
- Relatively easy to digest as there is no maths or programming
- An example of what kind of things one can study in the field
- Reasonably informative on a type of ALE
- It is possible to access the actual platform to supplement the text (could include link in text book)

Overall

Written for an audience already familiar with ALE. A study that is doing something specific, rather than explaining the use of their ALE software. Not suitable for the Textbook.