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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Permalink

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 28(28)

ISSN

1069-7977

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Publication Date

2006

Peer reviewed

The Pitfalls of Overprompting in Writing-to-Learn

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Current research on writing-to-learn suggests that writing allows for the application of beneficial cognitive and metacognitive learning activities (Bangert-Drowns et al., 2004). However, in order to help students elicit such learning activities, they should receive instructional support. A promising method is the writing of learning protocols. A learning protocol represents a written explication of one's learning processes and outcomes. In several experimental studies, we tested instructions for supporting the writing of learning protocols (Schwonke et al., 2006; Hübner et al., in press). Students received different combinations of prompts for writing a learning protocol. The results showed that learning success was highest when the students received prompts that stimulated both the application of cognitive and metacognitive activities, that is, prompts for the organization and elaboration of learning contents as well as prompts for the monitoring and regulation of one's comprehension (Hübner et al., in press).

Prompts evidently are an effective way to enhance learning by writing a learning protocol. In real world instructional settings, however, students typically do not produce just one single learning protocol. Rather, they are required to write learning protocols regularly over a longer period of time, for example as follow-up course work over a whole term. Thus, the question arises, whether prompts will also provide effective instructional support in the long term.

To investigate the long term effects of prompting learning protocols, we conducted a longitudinal study. 50 students of Psychology were randomly assigned to two parallel courses in Developmental Psychology. The students wrote a learning protocol about each weekly seminar session. In one course, the students received a rather vague and non-specific instruction for writing their protocols (control condition). In the other course, the students received the instruction that had proven to be the most effective in our experimental studies (Hübner et al., in press). The instruction contained cognitive prompts for organization and elaboration as well as metacognitive prompts for monitoring and regulation (experimental condition).

The data analyses revealed a significant interaction between measurement time and experimental condition (with versus without prompts) on all three levels of analysis: (1) The experimental group outperformed the control group regarding learning success when measured after the first half of the term. However, when learning success was measured again at the end of the term, the experimental group performed no better than the control group. (2) The analysis of the learning protocols provides a similar pattern

of results: When the learning protocols produced in the first half of the term were analyzed, the students in the experimental condition clearly outperformed the students in the control condition regarding the amount of cognitive and metacognitive learning activities. However, towards the end of the term, this trend became reversed: The students in the control condition now elicited more cognitive learning activities than the students in the experimental condition. (3) The analysis of the students' learning motivation adds to this picture: In the beginning of the term, the students in the experimental condition made a greater effort to writing their learning protocols than the students in the control condition. Again, this trend turned the other way round towards the end of the term: The students in the experimental condition now invested less effort and they perceived their learning as more controlled than the students in the control condition.

In summary, these results impressively demonstrate the pitfalls of prompting procedures in writing-to-learn. In the short term, the prompts effectively stimulated beneficial learning activities in the students' learning protocols. In the long term, however, the students apparently felt more and more restricted and controlled by the prompting instruction. Accordingly, their effort to elicit cognitive and metacognitive activities decreased resulting in a substantially lower learning success. In order to avoid the motivational and cognitive pitfalls of such overprompting, a gradual fading of the prompts might offer a possible solution (Renkl et al., 2004). Further research is needed to explore this possibility.

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