

How does courseware's design affect learners' cognitive-strategy?

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Abstrak

The emergence of the computer as an aid to education, with its unlimited range of instructional control options available to designer and user supports the vast development of coursewares. Hundreds of coursewares, aim to increase learners' learning outcomes were developed. However, to have a courseware fits with learners' characteristics many issues need to be explored. Referring to Resnick's (1989) definition of learning as knowledge construction, it is critical for coursewares to support learners in the process of acquiring, retaining, and retrieving different kinds of knowledge and performance. In acquiring, retaining, and retrieving information learners use procedures known as cognitive strategies. It is assumed that cognitive strategies are integral to the process of learning, but initiation of their use may come from the learner's self-instruction, or, from an instructional unit or system. This study intends to show how courseware design affects the use of cognitive strategies, especially from the high-school learners in Indonesia. A close examination on the psychological processes in learning was made to address questions: (a) how does screen density affect the use of cognitive strategies? (b) Does material presented in a linear format differs with material presented in non-linear (hypertext-based) in producing learner's learning outcomes? The results show that learners employed better cognitive strategies when presented with 25% text density material compare to 60%. Hypertext-based courseware was also found to have an effect on how learner processed the information.