

Pedersen, S. & Liu, M. (2002). The effects of modeling expert cognitive strategies during problem-based learning. *Journal of Educational Computing Research*. 26(4), 353-380.

### **Abstract**

While problem-based learning (PBL) is widely regarded as an effective instructional approach, research on it has largely been restricted to advanced and/or gifted learners. This study examined the potential of a hypermedia based expert tool to scaffold regular education sixth graders engaged in a problem-based learning (PBL) program. Participants completed *Alien Rescue*, a hypermedia PBL environment on the solar system. The tool under investigation offered students interactive video of an expert modeling his cognitive processes as he performed tasks relevant to the development of a solution to the central problem of the PBL unit. Two other versions of the expert tool were developed to isolate the effect of the cognitive modeling. Results suggest that the cognitive modeling offered through the expert tool brought the way students worked during periods of self-directed study into line with expert actions and impacted the quality of the rationales students wrote for their solutions.