Worked Examples Effect

Theory

The worked examples effect was first introduced in 1985\(^1\) suggesting positive effects of providing a learner with an example of the problem solution before requiring him to solve one on his own.

This suggestion is contrary to many constructivist discovery learning methods which suggest a learner should try to solve the problem by himself. Cognitive load theory on the other hand suggests that searching for the problem solution places unnecessary load on the learner's mind preventing him from learning. A worked example will remove the load of searching for a solution and enable easier acquisition of basic steps leading to the solution.

Practice

Learners should be presented with a worked example of the procedure they're expected to learn prior to trying to solve a problem which requires that procedure. For example, when teaching learners the formula for calculating roots of a quadratic formula, learners should first be provided with a worked example of using the formula, and then try to solve a problem on their own.

Still, it should be noted that under some conditions

- “worked examples are no more effective, and possibly less effective, than solving problems.”\(^2\)

This is due to the fact that even worked examples can be badly designed and not follow the principles and effects of proper instructional design (especially see: expertise reversal effect).

Research status

A recent research has systematically compared usage of worked examples, example-problem pairs, problem-example pairs and problem-solving, demonstrating that

- “example study only and example-problem pairs were more effective and efficient than problem solving only and problem-example pairs.”\(^3\)

\(^1\) Sweller, John, and Graham Cooper. The Use of Worked Examples as a Substitute for Problem Solving


3) van Gog, Tamara, Liesbeth Kester, and Fred Paas. Effects of worked examples, example-problem, and problem-example pairs on novice learning. Contemporary Educational Psychology 36, no. 3: 212-218, July 2011.