

# The Worked Example Effect

Education

Novices learn more from studying full solutions than from solving problems.

**For a novice, studying a worked example beats attempting the equivalent problem. The advantage reverses once the learner is competent.**

**worked example → completion problem → full problem**

**New procedure**

Every step shown

**Full worked example**

**Some fluency**

Last steps removed

**Completion problem**

**Competent**

No support

**Full problem**

## THE COMMON MISTAKE

✗ **Keeping worked examples going once pupils are fluent**

✓ **Fading to problems as competence grows**

The expertise reversal effect: support that helps a novice becomes redundant load for a competent learner, and performance drops.

Well supported across mathematics, science and programming. The effect size shrinks, then reverses, with expertise.