

# **[K1] Post-secondary science education and the scholarship of teaching and learning: three key cases from the US experience**

**Craig Nelson**

Indiana University, USA

nelson1@indiana.edu

**Keywords:** scholarship, evidence, pedagogy

## **Abstract**

Post-secondary faculty members in the US have tended to ignore even strong evidence on the effects of different pedagogical strategies.

The scholarship of teaching and learning (SOTL) movement invites faculty to see effective pedagogy as a valid and interesting area of research, one that should inform their efforts and, perhaps, one that they might want to advance. I will review three contrasting SOTL approaches as illustrated by three studies, one in calculus, one in physics and one that was multidisciplinary. One produced massive improvements in student success (from 60% below C to only 4% with no dilution of standards), one allows the comparison of the effectiveness of very different pedagogical approaches across a range of institutions and the third defined important barriers to the development of higher level critical thinking.