Synthesizing Evidence in Systematic Reviews

The federal government funds a number of systematic review efforts, both within federal agencies and outside of the government. The Department of Education’s What Works Clearinghouse (WWC) is one of the oldest of these efforts. Since 2002, the WWC has conducted reviews of thousands of education studies. It has released various reports since 2005, with the intent of helping educators and policymakers make evidence-based decisions about programs and practices. In the early years, the WWC addressed many issues related to assessing the degree of confidence readers should have in findings from individual studies. As the education research base has expanded and improved, the WWC has faced issues related to replicating studies and summarizing evidence across them.

By definition, systematic reviews focus on replication. Has more than one study assessed the effectiveness of an education intervention? If so, are the findings similar or different? How do the studies compare with regard to sample and context? The development of standards to evaluate the internal validity of other causal designs has created additional challenges, such as how to include evidence from diverse study designs and summarize the findings across them. For example, how should the findings from single-case designs be summarized and integrated with evidence from group designs? How should we combine student- and school-level findings? The answers to these questions will shape future reports from systematic reviews.

As the WWC and other systematic reviews are continuing to explore ways to summarize education research, this panel will discuss the WWC’s current practices and some alternatives. For example, in some systematic reviews, the preferred approach for synthesizing evidence is meta-analysis. However, some meta-analytic approaches may not be well suited to summarizing evidence from small groups of studies or small samples.

This panel will help participants understand how the WWC gathers evidence, summarizes it, and provides context from replications to answer the question of whether an intervention will work in a particular school or setting. It will include a discussion of the rationale, using various WWC reports to illustrate the practices and how they have changed over time. It will also explain the effectiveness rating employed in intervention reports and the level of evidence rating used in summarizing the evidence in practice guides, and discuss alternatives such as meta-analysis. Finally, panelists will discuss alternative approaches to synthesizing findings as the body of rigorous evidence in education grows.