How can we make education research a tool for educational improvement?

Prevailing models of education research seek to support the first strategy option while DBIR supports the second.

Strategy #1 – Identify and disseminate interventions that “work”

Strategy #2 – Embed research into policymaking and practice

In this poster, we highlight the ways in which DBIR is a departure from much educational research in terms of both the conceptualization of what it means to conduct research that is useful and usable in education settings and the phasing of different kinds of research activities. An implication of our analysis is that a more flexible, less linear framework for education R & D is needed to make research usable by practitioners.

Prevailing Standards of Evidence

Before discussing the implications of design-based implementation research for structuring research and development, we consider the contrasting case of the prevailing evidence standards and associated sequencing of types of education research promoted by the Institute of Education Sciences (IES) of the U.S. Department of Education. The IES evidence standards are deeply engrained in federal policy for education research funding.

Building on the conception of “gold-standard” evidence of effectiveness as coming from randomized controlled trials (Baron, 2007), IES uses a “goal structure” that reflects a linear model of research and development:

- In the first stage, Development and Innovation, IES expects researchers to develop a new intervention and collect data on its feasibility and usability, as well as some pilot data on student outcomes.
- In the next stage, Efficacy and Replication, the assumption is that the intervention is “fully developed” and proposals seek funding for experimental tests of the intervention’s impact in some limited range of contexts and often with considerable support from the research team (i.e., an efficacy study).
- The next stage in the sequence, Scale-up Evaluation, has the goal of taking an intervention that has already proven its efficacy in the prior research stage and testing whether it is effective under “typical conditions.”

The IES evidence standards are deeply engrained in federal policy for education research funding. If we consider the logic behind the adoption of these standards, we find the basic assumption that there are clearly defined education programs or interventions that either “work” or “don’t work” (see, for example, IES, 2011). Given this assumption, the researcher’s goal is to collect evidence to place an intervention in one or the other category. In this view, the contribution that research makes to practice is through identifying “what works” and disseminating this information to practitioners.

DBIR R & D Model

In contrast to the Department of Education evidence stages and standards, DBIR treats educational interventions not as fixed objects but as practices that will be adapted to local circumstances and can be expected to undergo modifications and improvements throughout their lifespan. Moreover, in the DBIR model, the implementation of an intervention in particular settings is itself an object of research and a critical part of understanding how to scale an intervention without diluting its effectiveness.

DBIR is a departure from the standard Department of Education research framework in that:

- DBIR aims to generate research findings that are not just useful in principle but are actually used by those making decisions that affect education. Thus, DBIR tends to place more emphasis on understanding local actions and outcomes and to make fewer claims for generality than other research approaches.
- DBIR attends to implementation processes, not just “implementation fidelity.” It looks for unanticipated or unintended consequences of introducing a new practice or new instructional material into an educational setting, not just whether an experimental protocol is being followed as stipulated. DBIR has a somewhat more flexible stance toward testing causal hypotheses than is embodied in IES standards, but does not eschew experimental design as an important research tool.
- DBIR follows a research trajectory that is more flexible and less than the prevailing education research and development cycle. DBIR expects variation in outcomes across different contexts and prioritizes the study of implementation in context as a strategy for refining the intervention as well as one for understanding implementation and context.

Evidence Implications of DBIR Principles

The four core DBIR principles (Penuel et. al., 2011) have important implications for how research evidence is defined and used:

Working with practitioners to jointly select the problem to address, the starting point for DBIR, is incompatible with large-scale RCTs.

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