

Analysis, Reporting, and Consultation

We are particularly aware of the need to put findings in context and to provide guidance in the interpretation of research results. Through hundreds of interactions with district personnel, we have developed expertise in bridging the world of rigorous methodology and the practical context of schools. Thus our analyses include measures at the student, teacher, and school levels and our reports provide an interpretation in terms of implementation and purposes of the program under study.

Statistical Analysis

In most cases, we address questions of program or product effectiveness by comparing students' performance on standardized tests, where the classes, teachers, grade level teams, or schools have been assigned to either treatment or control conditions. When assignment is random, we conduct experimental impact analyses. When assignment is non-random we use quasi-experimental analyses. The mean impact is estimated using multi-level models (or hierarchical linear models, HLM) that account for the clustering of lower-level units, such as students, in upper-level units, such as classes or schools. In a similar fashion, impacts on teacher instructional practices are estimated. Aside from the basic analysis of the mean impact, our studies typically identify the teacher- and student-level covariates that are expected to make a difference in the effectiveness of the program being tested. We conduct moderator analyses to test the interactions between these covariates and the experimental condition. We also conduct mediation analyses by determining, for example, the extent to which an impact on student achievement is explained by an impact on teacher practice or by another process measure. In addition to examining impacts and interactions where we anticipate effects, we use other demographics, teacher characteristics, and supplementary observational data in exploratory analyses to better understand unexpected results and to generate additional hypotheses about which factors potentially moderate or mediate the treatment impact. Multi-level models are a general tool applicable across almost any analysis of differences measured in the context of hierarchical organizations such as school systems.

Reporting Results

Our planning process includes an agreement stipulating the types and timing of all our deliverables: written interim and final reports, presentations, and other depictions of our findings. We employ rigorous error checking processes at every stage of reporting. Our style guide mirrors APA format; our reports, while written in accessible language, contain the necessary criteria for submission to peer-reviewed journals as well as to the US Department of Education's What Works Clearinghouse. Because several Empirical Education staff members have been trained in WWC review procedures, we are proactive in our conduct and reporting of research. In addition to the full reports and research summaries intended for a non-technical audience, feedback to the client—whether a school system or a publisher—includes analysis of the product features that worked well or that failed, implementation issues that influenced the outcome, and acceptance by teachers. We also can conduct reviews based on the principles of the WWC and meta-analyses of existing research literature.

Consultation, Workshops, and Grant Writing Assistance

We can work with districts to prepare the rigorous evaluation component required of many federal and state grants. We bring a deep knowledge of school districts' conduct and use of research for decision making. Our workshops for educators focus on understanding the value of rigorous research as well as the application of these methodologies to support the work in their agencies.

Empirical Education Inc.
www.empiricaleducation.com
425 Sherman Avenue, Suite 210
Palo Alto, CA 94306
(650) 328-1734