

Improving IES training programs

sean f. reardon

Stanford University

Acknowledge successes

- Broad acceptance and institutionalization of research paradigm focused on rigorous causal inference
 - Hundreds of phd students and postdocs trained in experimental and quasi-experimental designs who are now professors and researchers
- Broad understanding of the value of/need for research done in partnership between researchers and educational practitioners/agencies/organizations
 - Increased emphasis on training to work in partnership
 - Increased emphasis on “relevance” of research

Three observations/recomendations

- Training is needed in new methods that take advantage of **new forms of data and new analytic tools**
- Remember, it's the Institute of *Education Sciences*
- Training programs should have a **substantive focus**

Training in the use of new forms of data and new methods

- “Found data” (administrative data, clickstream data, social network data, text-as-data, etc).
 - Such data are the residuum of bureaucratic educational processes and/or corporate activity; they are not designed for research
- Machine learning, predictive analytics, natural language processing, data science methods, measurement.
 - An expanded set of measurement methods
 - But beware prediction absent an understanding mechanism
 - Algorithmic bias
- Training to use new, imperfect data wisely and effectively

Remember, it's the Institute of *Education Sciences*

- Education Science aims to construct a generalized understanding of mechanisms underlying the function of educational systems and human learning.
 - More than “what works”
 - More than “what’s the [average, short-term] effect” of a manipulable treatment, policy, or practice
 - More than what’s relevant today to practitioners
- Building education science requires attention to building and testing theoretical models of educational systems and human learning
 - Focus on questions of theoretical and practical relevance
 - Focus on developing skills to understand mechanisms and processes

Training programs should have a core substantive scientific focal area

- e.g., educational equity
 - Theoretical approaches and perspectives, definitions of equity/inequity
 - Historical perspectives
 - Comparative perspectives
 - Policy and practice perspectives
 - Disciplinary perspectives (sociology, economics, philosophy, psychology)
 - Lifecourse perspectives
 - Methods for studying equity/inequity in educational contexts and processes