

Poster Title: Adequacy of Social Science Registries to Meet the Needs of Educational Research

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Poster Presentation

Background

The Institute of Education Sciences (IES) website reports a mission of sharing scientific evidence of educational policy and practice with practitioners, policymakers, and researchers in ways that promote access and use of such knowledge (IES, n.d.). To be successful in that mission, structures need to be in place that disseminates the evidence in a timely fashion. To add to the complexity of the mission, the social sciences at large are going through a crisis of credibility in which the accuracy of the knowledge base is being questioned (Christensen & Soderberg, 2016; Kepes, Bennett, & McDaniel, 2014; Kepes & MCDaniel, 2013; Pigott, Valentine, Polanin, Williams, & Canada, 2013; Simmon, Nelson, & Simonsohn, 2011). Results of studies across different disciplines in the social sciences have identified practices that contribute to biases in the knowledge base (Blanco-Perez & Brodeur, 2017; Cybulski, Mayo-Wilson, & Grant, 2016; Polanin, Tanner-Smith, & Hennessy, 2016; Franco, Malhotra, & Simonovits, 2014; Fanelli, 2012, Gerber A., Malhotra, Dowling, & Doherty, 2010; Gerber & Malhotra, 2008; Kerr, 1998). These questionable research practices may occur during the design of the study, the data analysis, or in the process of disseminating findings (Gehlbach & Robinson, 2017).

Purpose

To mitigate the effect these practices have on the knowledge base, researchers across the social sciences have advocated for an increase in use of registries and pre-analysis plans. A registry is a public database where researchers register their studies either before the study begins, during the study, or upon completion (Banks & McDaniel, 2011). Registries allow a researcher to input features of a study that may include a description of the sample, primary or secondary outcomes, data collection methods and data analysis methods. The features of a study that are entered into a registry vary by registry as different fields of research have different needs. With commitment from a given field, registries can help reduce the file drawer problem as registries can house results or publications to studies from the field. It would require, as the word commitment implies, that researchers from that field use the registry at a higher rate than the current rate of publication of results. However, registries are limited in their capacity to mitigate against issues such as p-hacking, HARKing, or other questionable research practices.

A pre-analysis plan (or preregistration plan) details the analysis protocol for a study and is typically posted upon commencement of a study. Pre-analysis plans have largely been documents in which a researcher narrates the analysis plan. A quality pre-analysis plan that

details the decision forks throughout the design and analysis phases of a study would work against previously mentioned question research practices.

To address the need for additional efforts from the field of education to make causal inference studies transparent and accessible to interested stakeholders, this study examined the adequacy of current social science registries that function to disseminate research of impact studies in a timely and transparent manner to meet the needs of educational research. These registries can be used to view planned, in process, or completed studies. Currently, there are four primary registries across the social sciences including: 1) the American Economic Association's registry of Randomized Control Trials known as the AEA RCT Registry, 2) the International Initiative for Impact Evaluation's registry the Registry for International Development Impact Evaluations (RIDIE), 3) the evidence in Governance and Politics (EGAP) registry, and 4) the Open Science Framework (OSF) Registry. Since the OSF has several options for pre-registration, the most comprehensive form, the Prereg Challenge, was used for this analysis. However, we posit that these registries may not meet the needs of those in the educational research community. As such, this study will also include the Registry of Efficacy and Effectiveness Studies (REES), a registry developed by the Society for Research on Educational Effectiveness (SREE) with funding from the IES.

Method

To better understand the current functioning and strengths of the social science registries, a content analysis was completed for each registry. After in vivo coding of all information that could be entered into each registry, categories were developed and analyzed for themes within and between registry. The registries were then compared across all components and assessed for completeness to the transparency standard being set by the literature. The structure and searchability features of each registry were also analyzed and compared to each other in terms of their ability to provide access of the information to interested stakeholders.

Results

The purpose of this study was to examine the adequacy of the structure of available social science registries to meet the need of educational research. Each registry was reviewed for transparency in study design and data analysis along with the capacity for the registry to support access to those interested stakeholders of educational research impact studies. Results suggest that all the registries reviewed are well suited to provide proper information about study design, however only the Prereg Challenge and the REES provide quality information on data analysis without relying on attaching a comprehensive analysis plan to the other registries. While each registry has a system for supporting access of its information, only the REES allows interested stakeholders the ability to narrow searches for studies by many features of the study including, but not limited to a specific design, population, and type of or topic area of intervention. In addition, the four current registries rely on authors to be detailed with every aspect of their design through open response items. The REES takes a different approach and asks for study design and analysis details through a series of selected response questions which furthers the ability of stakeholders to search for specific studies.

Conclusion

Results of educational research need to make their way into schools. This cannot be done without a system in place that provides a reliable source of evidence to policy makers and practitioners. This study shows how the REES may be capable of acting as such a source for the field by providing researchers with a structure to preregister study plans and make them and their results accessible. The adoption and comprehensive use of this registry by funders, journal editors, and researchers will not only make evidence accessible to all stakeholders, but will also provide the much needed credibility to those study findings.

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