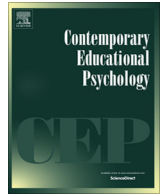


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Editorial

Marking the way: School-based interventions that “work”



Schools need innovation...we need new solutions that improve outcomes—and that can, and will, be used to serve hundreds of thousands of teachers and millions of students.

[U.S. Secretary of Education Arne [Duncan \(October 7, 2009\)](#)]

As Secretary Duncan suggested in an address to research grant recipients at an Institute of Education Sciences meeting, schools need innovation—innovation created in the service of solving the problems faced by billions of teachers and children. Educators worldwide need access to research that will enable the development of model learning communities, marked by effective pedagogical practices, deeper student learning, active engagement, and positive motivation and affect. The challenge is that conducting empirically based research in classroom settings is, at best, difficult. Indeed, as is evident in the pages of this special issue, navigating the dynamic complexities of classrooms, situating relevant interventions within existing curricula, dealing with varying student abilities, school cultures, classroom enclaves, pedagogical nuances, and a general malaise toward research is no simple task.

Resources requisite for school-based intervention research

Overcoming the challenges inherent in school-based interventions requires considerable resources. These resources can be conceptualized as a reciprocal tripartite of time, money, and human resources. Each of these elements is fundamental to school-based intervention research, and any effort to disentangle them seems futile. What is clear, however, is that all of these elements are necessary in sufficient abundance if the research is to bear fruit.

Time

Building partnerships with schools, teachers, students, or caregivers takes substantial time. In much the same way that someone builds a friendship with a new acquaintance and then comes to know about their family or history, one must be embedded within the school community for an adequate period of time to gain an understanding of the culture and climate. In her commentary, [Ebersöhn \(2015\)](#) shares outcomes from school partnerships that have gone on for more than a decade—these partnerships need regular maintenance and renewal just like a friendship.

Time is also required for the research team to gain an understanding of the pedagogical nuances of particular classrooms or school curricula (e.g., leveled reading groups but no leveled math groups). The flipside is that it also takes principals', teachers', and students' time to understand and implement interventions. This implementation often comes at the expense of other curriculum.

This investment of time is a very high cost for teachers and schools. It takes time to build, pilot, and iteratively refine intervention materials that attend to school- and classroom-based factors like student ability, while ensuring that the intervention materials align with prior theoretical and empirical research. Finally, it takes a great deal of time to conduct intervention research, collect the data, and secure a suitable outlet in which to publish the results. When comparing this process to that of a laboratory study, one might conduct, complete, and submit the research to a journal within a semester, whereas the intervention studies within this special issue all took more than a year to complete, not including planning, data analysis, or publication.

Monetary

Equally important, and intimately connected to time resources, is the need for monetary resources. Indeed, all but two of the studies included within this special issue were supported by grants from government agencies. In the two studies pertaining to writing (i.e., [Festas et al., 2015](#); [Harris, Graham, & Adkins, 2015](#)), the researchers struggled to conduct the studies without financial support from government grants and had to pool resources and staff across their institutions in order to fund the work (K. Harris, personal communication, September 25, 2014). Monetary resources are needed to pay for research staff, space, and supplies, as well as school-based expenses like substitute teachers, intervention materials, and incentives for participation. These non-trivial expenses range from \$100 a day for a substitute teacher, so that participating teachers can attend professional development workshops pertaining to the intervention, to in excess of \$35,000 per year for a graduate research assistant to work on a project—these costs accumulate quickly.

Funds are also needed to travel back and forth to schools, many of which are long distances from locations where the research staff are employed. This is to say nothing of the costs associated with searching for, hiring, and training qualified research staff or the costs required to mitigate attrition among teachers or schools. These issues are exacerbated by the fact that resource allocations in terms of government grants are extremely competitive and limited, and the availability of monies varies widely depending on country and content. As a case in point, research on writing is funded at a much lower level than other content areas, including reading ([Fidalgo, Harris, & Braaksma, 2015](#)). This point is underscored by the fact that the two articles in this special issue that were not funded were on writing, despite the fact that both studies employ methodological techniques encouraged by funding agencies.

Human

In addition to the abundance of time and money necessary to complete intervention research, one must not underestimate the requisite human resources. By human resources, I am referring to humans involved in any way in the intervention process. Perhaps most fundamental are the research staff, school personnel, and students involved in the implementation of the intervention. Planning, implementing, and iterating school-based interventions requires vast knowledge of relevant theoretical and empirical literature, research design, and assessment, as well as knowledge of how schools function and how to negotiate the social dynamic of school cultures and curriculum. Teachers also must be willing to devote their time to learning new or varied pedagogical approaches. This type of human resource is quite scarce, as teachers are often under pressure to use mandated curricula and assessments, and they must meet predetermined benchmarks during the year, which are beyond the control of the researchers.

Finally, like farmers whose crops might succumb to draught or pestilence, intervention research requires resilience. In reality, interventions may not work as intended. Such failure may be due to issues of implementation (e.g., dosage; Greene, 2015) or lack of congruency from one context to the next (e.g., place; Ebersöhn, 2015). Regardless of the reason, school-based interventions require researchers who can adequately evaluate their resources and risks so as to reframe their interventions in response to teacher and student needs, school contexts, social dynamics, and sound theoretical and empirical understandings.

Marking the way and establishing what “works”

Despite formidable challenges, educational psychology researchers, like those represented in this special issue, are endeavoring to meet the call to action issued by educational stakeholders at all levels (e.g., politicians, school district and building personnel, families, or citizens); that is, these researchers are working to conduct research aimed at understanding the educational process across the lifespan, in school-based settings and embedded within school curricula and culture. In doing so, they are marking the way for those that may follow. The articles included in this special issue are a testament to the fact that such research, even in the face of the obvious challenges, can be done successfully. As such, the goal is that these articles may serve as beacons to researchers attempting to navigate the dynamic complexities of school-based intervention research. In order to better guide future research, every author was asked to specifically address the complexities they faced in conducting their research and to share, in detail, how they dealt with those complexities. Additionally, two scholars were asked to write commentaries that weighed what they felt were the most substantive barriers to conducting school-based intervention research.

From my perspective, however, conducting such research is necessary, but not sufficient, to fulfill the daunting charge issued by educational stakeholders like Secretary Duncan. What is also needed is a mechanism by which to disseminate the important, school-based intervention research being conducted by contemporary educational psychologists. As highlighted by Hsieh et al. (2005), there was a noticeable decline in published intervention studies within educational psychology journals between 1995 and 2004. This paucity continues today. Yet curriculum-aligned interventions are a critical step in putting theoretical notions to rigorous empirical test. Arguably, theoretical accounts of interest and strategy use in reading comprehension or the role of working memory in developing arithmetic fluency gain value in their translation into classroom practice. Yet, just as important is the failure to replicate strong laboratory finding in an applied setting (e.g.,

Hulleman & Cordray, 2009). That is, it is vitally important to gauge which interventions improve student learning in classrooms beyond the confines of research laboratories.

Of course, increasing the number of school-based intervention studies requires not only researchers willing to conduct such studies, but also it requires editors and editorial boards open to publishing studies that are marked by the nuances and complexities that reside in schools and classrooms. Indeed, this requires that editors and reviewers consider the research in light of such complexities. For example, it seems unreasonable for reviewers to fault a researcher for lacking a laboratory standard of control over the research design (e.g., sample sizes, curriculum/substantive topics, or consent/response rates). However, it would be completely reasonable for reviewers to expect researchers to report on fidelity and feasibility, which are features of intervention research not commonly addressed in laboratory studies.

In essence, I would contend that the field of contemporary educational psychology is in need of a refined understanding of publishability standards for intervention research. As editors, board members, and researchers, we need to think deeply about the standards we use to gauge what counts and what “works” when it comes to school-based intervention research. The articles within this special issue are meant to be springboards for such a discussion. As highlighted by Greene (2015), traditional understandings of what “works” may need to be expanded when it comes to intervention studies, and the role of “place” likely lacks the richness called for by Ebersöhn (2015). In sum, as you read the articles in this issue, I would ask that you begin to think critically and analytically about the nature of school-based intervention research, its importance to our field, educational stakeholders, and learners. I would also ask you to consider re-assessing the criteria applied to judging this specific class of empirical inquiry, as we sought to do in this issue.

Overview of the issue contributions

In order to be considered for inclusion in the special issue, manuscripts had to meet a number of fairly stringent requirements prior to being subjected to the full review process. In creating the requirements, Cromley and I attempted to target a very specific genre of intervention research. That is, theoretically and empirically driven, programmatic school-based intervention research being conducted by contemporary educational psychologists around the globe. In doing so, we stipulated that submissions must meet *all* of the following criteria:

- (a) taking place in K-12 or primary-secondary formal educational settings in any country;
- (b) employing random assignment of classes, groups, or individuals to treatment(s) and comparison/control condition(s);
- (c) occurring in intact classroom settings (i.e., either whole class or small group);
- (d) researcher- or teacher-delivered instructional treatment;
- (e) lasting for longer than one class day; and,
- (f) addressing the assessment of treatment fidelity.

The articles included in this special issue represent a great deal of diversity in terms of country of origin, construct of interest, subject-matter content, school demographics, and intervention focus. Specifically, the included studies and commentaries represent research conducted in six different countries (i.e., Korea, The Netherlands, New Zealand, Portugal, South Africa, and the United States) and pertain to seven unique subject-matter areas or constructs of interest (i.e., teacher expectations in mathematics and reading, writing, amotivation in physical education, reading comprehension, mathematics computer games, supplemental Algebra

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