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**EVIDENCE-BASED INVESTMENTS IN EDUCATION:  
RECENT RESEARCH BEGINS TO POINT THE WAY**

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**השקעה בחינוך על בסיס הוכחות**

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# *Evidence-Based Investments in Education: Recent Research Begins to Point the Way*

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## *Abstract*

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*Recent advances in education research have led to more reliable evidence about the effectiveness of education reform initiatives. Class-size reduction, for example, was evaluated rigorously in a state-wide randomized experiment in the US, and led to important knowledge about the potential payoff of this reform. Generalizing from research in other contexts is problematic, even if the research was well designed, so rigorous studies of education in Israel are needed to determine which programs are effective in this country.*

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**R**ecent advances in education research have begun to build an evidence-based field. Findings based on reliable evidence point the way towards educational investments that are likely to pay off in the future.

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Historically, research on education has not been a reliable guide to decision making (Lagemann 2000). Much of the research was descriptive rather than prescriptive, and the literature was plagued by an inability to distinguish the effects of programs from the effects of selection into programs (Whitehurst 2003). For example, research on teacher professional development might examine outcomes for teachers who participated in a program compared to those who did not, but because participants were volunteers, it was difficult to tell whether favorable outcomes reflected something about the program, or simply reflected pre-existing differences between those who had volunteered to participate and those who had not. (Likewise, if outcomes were unfavorable, one could not discern whether the program was actually damaging or whether the weakest teachers signed up for additional training)

A landmark in building an evidence-based field of education research was the Tennessee STAR study, a large-scale study of class-size reduction that took place all across the state of Tennessee in the late 1980s (Finn and Achilles 1990). Students and teachers were randomly assigned to classes that were designated as regular-sized (22-25 students), regular-sized with a teacher aide, or small (13-17 students). Despite some imperfections in the random assignment process, the study succeeded in ruling out selection patterns as the cause of outcome differences (Ehrenberg et al. 2001). The results of the study showed significant and sustained benefits of smaller classes in kindergarten and first grade, and paved the way for a variety of class-size reforms across the US (Mosteller 1995; Ehrenberg et al. 2001).

The Tennessee class-size experiment led to an expanded focus on real-world field experiments in US education. Since 2002, the US Department of Education has encouraged US researchers to adopt research designs that allow for judgments of cause and effect. It established the What Works Clearinghouse to evaluate and synthesize rigorous studies of education programs and policies. The Clearinghouse now contains hundreds of “intervention reports” and dozens of “practice

guides” intended to help educators decide which programs to implement in their schools and classrooms.<sup>1</sup>

Class-size reduction provides an excellent example to identify the limitations as well as the benefits of random assignment studies for decisions about educational investments. Other states have not realized the success of Tennessee. In California, for example, state-wide class-size reduction did not yield the expected payoff, apparently because classroom spaces did not suffice to accommodate the additional classes, and there was a lack of well-prepared teachers to staff the larger number of classrooms. In Florida, meanwhile, a state-wide class-size reduction law has not been well implemented due to cost considerations. A nationally-representative, quasi-experimental study of class-size reduction found no overall benefits, suggesting that class-size reduction may not confer universally the benefits it brought in Tennessee without the accompanying conditions of adequate space and a supply of well-trained teachers (Milesi and Gamoran 2006). The broader lesson to be drawn from these findings is that experimental research must have sufficient nuance and complexity to address questions about what programs work for whom, and under what circumstances, before it will be fully reliable as a basis for decisions about investments.

This holds even more strongly when one considers taking lessons learned from research in one country and applying them to another – such as drawing lessons for investments in Israel based on research in the US. Few studies of education in Israel provide rigorous estimates of causal effects, yet the need for such research is great. Israeli decision-makers can look to findings from elsewhere for suggestions of how to proceed, but major resource commitments should rely on knowledge that is specific to Israel. For example, class sizes in Israel are large, particularly in secular schools in the upper elementary and lower secondary grades. Based on US research, reduction of class sizes could yield significant and lasting improvement in student outcomes. Yet other countries, notably

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<sup>1</sup> The What Works Clearinghouse may be found at: <http://ies.ed.gov/ncee/wwc/>

those in the Far East, have large classes and perform well on international tests. Which model is appropriate for Israel? A well-implemented randomized study could answer this question. Similarly, Israeli schools stand out in the relatively low number of hours spent in the core academic subjects of reading and science (Ben-David 2010). Increasing class hours in these subjects could be a powerful lever to elevate academic achievement – or it could be a wasted effort, depending on how the hours are used. Asking schools to volunteer for increased hours could lead to a biased comparison if schools that are already more effective are overrepresented among the volunteers. By contrast, a randomized study would provide a more accurate and useful indicator of whether a reform that increases hours of instruction would benefit achievement all across schools in Israel.

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