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EVIDENCE-BASED PRACTICE MEETS IMPROVEMENT SCIENCE

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Anthony Bryk is one of the most thoughtful and articulate theorists of education improvement anywhere. In his 2014 AERA Distinguished Lecture, published in the *Educational Researcher* (Bryk, 2015), he lays out his critique of current strategies for improving schools at scale. His purpose is to propose a "third paradigm" for school improvement. The first, often called standards-based reform, consists of the use of standards, assessments, and central regulations to manage the practices and policies of state and local school leaders. Flowing from this perspective are policies such as governance reforms, value added assessments, teacher evaluation reforms, and generic instructional coaching. Bryk rightly calls such strategies "solutionitis," and commentators have for decades noted how most of these strategies are oversold, under-implemented, and soon replaced, either because they are perceived to have failed, or at least as often, because political changes sweep away one policy and replace it with another, with little learned in the process. Bryk's critique, that such system-wide changes were poorly understood to begin with and are then weakly supported by educators and implemented without enthusiasm or care (or success) is not exactly a revelation for anyone who observes educational policy.

The second approach to school reform, evidence-based practice, is really Bryk's target. Evidence-based practice involves creating potentially effective and replicable programs, evaluating them (ideally in cluster randomized experiments), and providing incentives for schools to use those that are found to be effective.

It is important to have some context for Bryk's argument. In the U.S. (and the U.K.), evidence-based reform is growing rapidly. Substantial investments, especially since 2010, have funded hundreds of organizations to do development, rigorous evaluation, and dissemination of proven programs. In 2015, the U.S. Congress passed a new education law, the Every Student Succeeds Act (ESSA), which defined three main categories of evidence supporting educational programs: "Strong" (supported by randomized experiments), "moderate" (supported by quasi-experiments), and "promising" (supported by correlational studies). ESSA provides incentives for schools in certain circumstances to adopt and implement programs that meet ESSA standards. My institute maintains a website that provides information on programs that meet these standards [https://www.evidenceforessa.org/]. Currently, it list more than 100 qualifying programs in reading and mathematics, grades k-12, and more are added each month. Bryk's comments, therefore, are not theoretical. He is proposing alternatives to a movement toward evidence-based practice that is well underway, though still early in its development and influence. But the evidence-based train has left the station, and is by far the dominant means by which research is influencing practice and will continue to do so in coming years. In this context, Bryk's critique, written in the ancient days of 2014, should now perhaps be seen as helpful suggestions to improve evidence-based practice, rather than as an alternative to this movement.

In his article, Bryk (2015, p. 468) notes that while "clinical trials are surely worth doing in education, they are a very slow and expensive process… such studies are not likely to be a primary resource for improving our schools anytime soon." He also worries that randomized trials may just report effect sizes indicating that a program *can* work, but may not show how "to make it work reliably over diverse contexts and populations." (p. 469).

Development and randomized experiments are indeed expensive and take some time to show results. Yet the costs of these studies are trivial in the context of trillion-dollar education expenditures in the U.S., and the process is slow because meaningful growth in students' outcomes takes place over years. However, despite these problems, there is no doubt that evidence-based practice is in fact surging in the U.S. and U.K., despite its cost and slow pace. In both countries, the surge in evidence-based reform in education is part of a broader movement in all of human services. Liberals and conservatives alike are embracing the idea that programs should prove their value, and school leaders are participating in evaluations of funded programs in very large numbers.

As an alternative to evidence-based practice, Bryk suggests "networked improvement communities, a paradigm that sees educators as active inquirers who are now bound together by norms and structures akin to a scientific community." (p. 469).

Bryk reminds us at several points how incredibly complex and taxing the jobs of teachers and principals are and how the greatest enemy of progress is variability in practices and outcomes. Yet this is his solution: "…Education engages hundreds of

thousands of people doing similar work every day. If educators joined together in structured improvement networks, our field would have extraordinary capacities to innovate, test, and rapidly spread effective practices." (p. 475).

Bryk suggests that these hundreds of thousands of educators adopt "norms and structures akin to scientific communities." Anyone who has participated in a faculty committee of any size on any topic can anticipate how efficiently and effectively this would work, and how well the work of one committee would become standard practice in others. If speed and cost-effectiveness are the goal, the academic model is hardly an exemplar.

I appreciate Bryk's desire to engage teachers and principals in school reform, and I agree that it is important. But as Bryk notes, teachers and principals are very busy people, and they are really good at practice, not theory.

Bryk poses a false dichotomy between evidence-based practices, where he imagines "knowers" tell "doers" what to do, versus every school inventing its own solutions. Yet in every proven program I know about, practitioners are involved in designing, piloting, giving feedback on and refining programs over time. A developer or researcher would be crazy to sit in his or her office, think up a program, and then evaluate it. Instead, developers and researchers invariably discuss ideas with teachers, principals, and others, try out ideas on a small scale, get feedback from practitioners, and refine the approach until it is acceptable to all. At least in our Success for All programs, teachers and others within schools serve on various committees to constantly refine practices, solve problems, and adapt to local or individual needs (Peurach, 2011; Slavin, Madden, Chambers & Haxby, 2009). This is in fact central to improvement science, and to a related approach called implementation science (Fixen, Blasé, Metz & Van Dyke, 2015): using every opportunity to engage front-line program implementers in improvement of a program they are engaged in. The point is that not every practitioner who will use a program must have been involved in creating it in the first place, but every staff member in a school using an innovative program needs to be engaged in an ongoing process of improvement. The program the practitioners are using can then be disseminated, but a core part of the program (as disseminated) should be the expectation that implementers will participate in constant adjustment and improvement to make sure the program gets better and better over time at reaching every subgroup and every child. This is what evidence-based practice is all about.

In work done since his 2014 AERA address, Bryk has been working with others to solve a key problem in U. S. postsecondary education. In universities and especially community colleges, many students have difficulty in passing remedial mathematics courses which they must pass to go on to take courses for credit. Bryk and his colleagues talked with many practitioners in this area, jointly designed a program called Statway, and are evaluating it in a large quasi-experiment (see Yamada & Bryk, 2016). If I understand it properly, this is exactly the process we and most other developers or researchers follow. The article on Statway (Yamada & Bryk, 2016) describes Statway as "developed by the Carnegie Foundation for the Advancement of Teaching." Networked communities of practice were one of six parts of the intervention. "They collaboratively engage in disciplined inquiries using common conceptual frameworks, measures, and inquiry protocols to advance measureable improvements in teaching and learning" (Yamada & Bryk, 2016, p. 8). This element of the Statway design may be important to the outcomes, but engaging educators in evaluating and continuously improving implementation of treatment is not unique to Statway or to the Carnegie Foundation. Statway is already being disseminated, much as any other successfully developed and evaluated program would be. Statway may have been created in a somewhat different way, but if it continues to be successful, it will, I'd assume, become a proven program disseminated to post-secondary educators nationally, not re-invented in every location.

The programs that meet the ESSA evidence standards were developed and implemented much the same way Statway was. Greater involvement of school staffs in improving implementation and outcomes of these programs is surely desirable, and in this I agree with Bryk's emphasis. But it is counterproductive to attack evidence-based practice while proposing something that, in order to achieve valuable outcomes, has to look very much the same in practice.

Bryk's argument, in practical reality, is not that "networked improvement communities" should rise up, adopt academic norms and values, and create

and evaluate innovations. Instead, what I hope and believe is that he is proposing a melding of evidence-based practice with an improvement science in which teachers and principals operate intelligently within proven programs to plan and ensure high-quality implementation, track implementation and formative outcomes, identify and remediate problems, design and implement solutions and note their effectiveness, and otherwise take a proven program as a point of departure and then act to continuously improve outcomes.

If this is what Bryk means, then I'm all for it.

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