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Review of *A Legal Lever for Enhancing Productivity*

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February 2014

Summary of Review

This report examines the extent to which the Texas education system is efficient. It emphasizes *x-efficiency,* a more extensive concept than productive efficiency that includes incentives, information, and adaptability. Applying the concept of x-efficiency, the authors argue that in key areas—teacher training, teacher evaluation, teacher pay-setting, and use of instructional materials—the Texas education system is unlikely to be efficient or cannot demonstrate efficiency. However, because x-efficiency is a more comprehensive concept it requires more evidence and analysis in order to draw conclusions. As the evidence and analysis presented by the authors is insufficient, it cannot be determined whether the Texas education system is x-efficient or x-inefficient. Thus, the authors have in no way proved that the Texas education system is inefficient. That would require a more comprehensive and rigorous analysis than is provided here. Either way, such a determination is academic if there are no alternative ways to make the system more efficient. This report does not provide any alternatives. Its usefulness for policymakers and education professionals is therefore limited to the prescription that x-efficiency is important and should be addressed more rigorously.

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This is one of a series of Think Twice think tank reviews made possible in part by funding from the Great Lakes Center for Education Research and Practice. It is also available at http://greatlakescenter.org.

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Review of *A Legal Lever for Enhancing Productivity*

By Clive Belfield, Queens College, CUNY

I. Introduction

The report under review here—*A Legal Lever for Enhancing Productivity*—was written by Ettema, Sengupta and Kress, who are affiliated with the George W. Bush Institute.[1] The report discusses the Texas state constitution's education clause and emphasizes the constitutional imperative that the system should be efficient.

The analysis in the report relies on the concept of *x-efficiency*. This general concept, which was interpreted for the education sector in an academic paper by Professor Henry Levin in the 1990s, is very valuable.[2] X-efficiency incorporates not only the imperative of minimizing costs but also considerations of how schools might use information and structure incentives to ensure that costs are minimized.

In this report, the authors focus on specific elements of the education system in Texas—teacher effectiveness and the use of instructional materials—and assert that the Texas education system is not x-efficient. However, this assertion does not logically follow from the evidence and is redundant in the sense that no alternative is available that would make the Texas education system more efficient.

II. Findings and Conclusions of the Report

The report asserts that the Texas public school system "does not adhere reasonably to the principles of efficiency" (p.1). This assertion is set within the context of the Texas state Constitution which mandates an "efficient system of public free schools."

The authors of the report find that in four key areas the Texas public school system is not efficient. First, teacher training is deficient in that "information on teacher prep programs is incomplete," in particular that for "measuring the achievement of students taught by new teachers" (p.4). Second, the evaluation of teachers "may not be properly linked to incentives" (p.6) and "may not be rigorous enough to identify teachers in need of improvement in dismissal" (p.7). Third, teacher pay-setting and dismissal practices are inefficient. Pay-setting is inefficient insofar as the Texas salary schedule is based on

education and years of service, and these characteristics are not strongly linked to student achievement; dismissal processes are inefficient on the grounds that very few teachers are ever dismissed. Finally, the effectiveness of instructional materials used in Texas schools is unknown: these materials may be effective, but they may not. Thus, the authors claim the Texas school system cannot establish that it is using the most effective instructional materials.

The report concludes that, although the Texas education is efficient in some respects, while in other respects it is either not efficient or cannot be shown to be efficient. The use

of the State of Texas Assessments of Academic Readiness (STAAR) tests is evidence that the education system does have clear goals and that these can be measured to establish efficiency. However, the incentive system is held to be weak, as is the information system for making decisions. The system's ability to meet changing conditions and its use of the most productive technologies cannot be appraised in terms of efficiency.

III. The Report's Rationale for Its Findings and Conclusions

This report relies on the concept of x-efficiency to evaluate the Texas education system. The concept is more expansive than the basic economic definition of efficiency and so allows for a more comprehensive understanding of how resources might be used more effectively. X-efficiency has five elements. The first element is that schools (indeed any enterprise) must have a "clear objective function with measurable outcomes." Put simply, schools must know what they are doing and be able to tell if they are doing it. As well, x-efficiency includes the standard economic definition of efficiency: the use of the most productive technology subject to cost constraints. But x-efficiency also includes the ideas of incentives, information, and flexibility that enterprises need in order to become efficient. The report applies this concept to make evaluative statements about efficiency.

The report uses published research evidence and Texas school system data to substantiate its claim that the system is not efficient. This evidence and data is set within the context of the State of Texas Constitutional requirements and current state policy on teacher training, pay, and contracts and on the use of instructional materials.

IV. The Report's Use of Research Literature

As well as drawing on the theoretical work on x-efficiency, the report is based on two evidentiary sources.

First, the report cites the research literature on teacher effectiveness. This literature is strong: it is independent, verifiable, and reaches consistent conclusions. This literature finds that simple objective characteristics of teachers, such as greater experience and more advanced training, are not strongly correlated with student test scores. Yet, it also finds

that teachers matter: there is a big difference between effective and ineffective teachers. Second, the report gives detailed descriptions of regulations, organization, and codes of practice for Texas schools in relation to training, pay scales, and use of instructional materials.

V. Review of the Report's Methods

Evaluating a school systems in terms of x-efficiency can be a useful and productive exercise. Thus, the report provides a valuable service in drawing attention to this concept.

However, the report's analysis of the evidentiary sources is not persuasive.

First, although the evidence on teacher effectiveness is often of a high quality, what it means for policy is quite uncertain. Teachers do make a difference, but as yet researchers have not been able to pinpoint the most influential attributes. Therefore, the idea that teachers matter is critical for further research, but as yet there are no obvious policy

> *Overall, this report pays little attention to the gap between research evidence and how the evidence might be applied in practice.*

implications from this conclusion. Also, teacher training and experience are only weakly associated with student achievement. But they are not adversely associated, and the associations are not uniform (teachers with very little experience typically perform the worst, for example). Also, teacher training is not solely directed toward improving test scores: professional development is often undertaken for promotion into managerial positions within the school system or to satisfy workplace regulations. Again, the policy implications are far from clear. For example, even if teacher effectiveness plateaus after a few years of experience, a school that attempted to replace such teachers with less experienced, lower-paid teachers would soon have difficulties hiring any teachers or would have to spend significant amounts on recruitment. Overall, this report pays little attention to the gap between research evidence and how the evidence might be applied in practice.

Second, the report assembles basic tabulations of dismissal rates from the Texas school system. This raw data on dismissal rates across districts is compared with the number of teachers within districts. However, the evidence from the Texas school system on raw dismissal rates is not strong. Raw tabulations on dismissal rates across districts—even if these are tiny—are not compelling evidence that teachers have too much job security. The dismissal rate cannot be described as too low either without specifying what the optimal dismissal rate should be or without understanding the consequences of an increase in the dismissal rate. Dismissal is only one way in which teachers leave their jobs at a given school. Indeed, most teachers quit because of relatively low wages and poor working

conditions; many others are counselled out.[3] Also, if more teachers are dismissed, this will signal that teaching has become a less secure form of employment.[4] When teaching jobs become less secure relative to other work, the wages needed to recruit and retain teachers will have to rise because workers like job security. Here too, there is a big gap between the idea—teaching jobs are overly protected—and its real-world implications.

Finally, the value of the contextual informational on the Texas education system is unclear. The report cites regulations and codes of practice for Texas schools, but it is not clear how precisely these regulations are adhered to or if they are important determinants of efficiency.

One example is the prescribed salary schedule. This schedule—based on experience—is incompatible with evidence that teachers do not become more effective over time. But to prove that this salary schedule is inefficient, it is necessary to establish that it is rigidly applied and that it is the only way in which teacher pay is determined. In practice, there are many ways for teacher pay to diverge from a basic salary schedule, both in monetary terms (such as faster promotions or teacher bonuses) and in non-monetary terms (better working conditions).[5] The existence of a salary schedule does not prove that teachers are not compensated according to their productivity, which is the ultimate test of efficiency.

Similarly, contextual information is used to evaluate the use of instructional materials in Texas schools. Bluntly, there is very little evidence—and almost no research—that can be used to determine whether the instructional materials used are the most effective. It is therefore very difficult to infer practical lessons from the information provided in the report. For instance, the report distinguishes between districts that follow state guidelines and those that have discretion in choosing instructional materials. But, absent any evidence that one approach is more effective, this distinction has no salience.

VI. Review of the Validity of the Findings and Conclusions

In one important sense, the report makes a valid claim: efficiency is a multi-faceted concept, and currently there is not enough information available to determine the extent to which the Texas education system is efficient. This claim strongly implies caution when evaluating practices on efficiency grounds.

However, the authors sometimes do not heed this caution. Instead, they claim that the system is "unlikely" to be efficient. The claim is made specifically with respect to information (which is "lacking") and flexibility; but it is then extrapolated to the use of the most productive technologies (p.13). Yet, it is not logical to conclude that the Texas system is not x-efficient. Inefficiency cannot be established by pointing out practices that "do not seem" efficient, or that the information needed to make decisions has not been formally collected for analysis by researchers.

As well, even though there are five elements to the concept of x-efficiency, this does not mean that each one is equally important. Indeed, the last element—using the most

productive resources taking account of costs—is the ultimate expression of efficiency. The other elements are articulations of this element. That is, if a school has information on what is most efficient and can allocate resources flexibly (two elements of x-efficiency), it is likely to satisfy the last element (productive use of resources). More generally, it is not obvious whether a school that satisfies the conditions expressed in one element is more efficient than a school that does so for another element.

Importantly, inefficiency cannot be reduced unless a more efficient practice can be substituted in its place. The report's arguments rest heavily on identifying unseemly practices; its analysis provides no guidance on what alternative—more efficient—practices might be implemented instead.

Finally, it is important to consider why districts and schools do not spend more time and resource demonstrating efficiency. Many education enterprises are constrained by state mandates and state funding: often they have just enough funds to provide educational programs as mandated and do not have either the resources or capacity to conduct efficiency analyses.

VII. Usefulness of the Report for Guidance of Policy and Practice

The report emphasizes the idea of x-efficiency. This is an important idea for understanding how enterprises might operate. It would be better if policymakers and education professionals applied this more expansive interpretation so that resources were allocated more efficiently. However, because x-efficiency is a more comprehensive concept it requires more evidence and analysis than was provided here in order to draw conclusions. As this evidence and analysis is not yet available, it cannot be determined whether the Texas education system is x-efficient or x-inefficient. Either way, such a determination is academic if there are no alternative ways to make the system more efficient. This report does not provide any alternatives. Its usefulness for policymakers and education professionals is therefore limited to the prescription that efficiency is important and should be addressed more rigorously. This prescription is not news.

Overall, the authors are to be commended for bringing the concept of x-efficiency to greater attention and placing it front and center in their evaluation of the Texas education system. However, it then becomes essential to conduct more comprehensive and more rigorous analysis of each facet of x-efficiency. Unfortunately, the report does not perform this.

Notes and References

1 Ettema, E., Sengupta, K., & Kress, S. (2014). *A Legal Lever for Enhancing Productivity*. Dallas: George W. Bush Institute. Retrieved February 17, 2014, from http://www.bushcenter.org/sites/default/files/GWBI-Legal-Lever-for-Enhancing-Productivity.pdf.

2 Levin, H. M. (1997). Raising school productivity: An x-efficiency approach. *Economics of Education Review*, *16* (3), 303-311.

3 Borman, G. D. & Dowling, N. M. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research*, *78* (3), 367-409.

4 The authors propose a dismissal rate of 5-8%. This would make teaching a very insecure profession, dramatically worse than any private sector occupation. See:

Bureau of Labor Statistics (2014, Feb. 26). Job openings and labor turnover survey. At *Databases, Tables & Calculators By Subject*, BLS website. Retrieved February 26, 2014, from http://data.bls.gov/timeseries/JTS000000000LDR.

5 Belfield, C. R. & Heywood, J. S. (2008). Performance-related pay for teachers. *Economics of Education Review, 27* (3), 243-252.

DOCUMENT REVIEWED:	**A Legal Lever for Enhancing Productivity**
AUTHOR:	Elizabeth Ettema, Krishanu Sengupta, and Sandy Kress
PUBLISHER/THINK TANK:	George W. Bush Institute
DOCUMENT RELEASE DATE:	February 2014
REVIEW DATE:	February 27 2014
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SUGGESTED CITATION:

Belfield, C. R. (2014). *Review of "A Legal Lever for Enhancing Productivity."* Boulder, CO: National Education Policy Center. Retrieved [date] from http://nepc.colorado.edu/thinktank/review-legal-lever.