TIER
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Public Education Productivity Improvement: The Path Forward for Texas Policymakers

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Introduction

Few can doubt that significant improvements in Texas public education productivity are needed. Performance standards and accountability requirements continue to rise, and resources continue to be scarce. With increasing standards and limited resources, school districts are going to have to do more, perhaps with less. Productivity is likely to be the new watchword in public education.

Improving quality without significantly increasing resources will require significant innovation. And in order for schools and school districts to innovate, policymakers are going to have to effectively link clear goals and performance metrics, performance accountability, new state requirements for financial reporting, and significant deregulation, especially in the area of human resources management. We have written this paper for the Texas Institute for Education Reform (TIER) and the Institute for Productivity in Education to briefly describe these foundational requirements for productivity management, demonstrate their interdependence, and suggest to policymakers the steps required to start Texas down the productivity improvement path.

Trends and Challenges

Public education productivity has always been a state priority. To quote the Texas Constitution, Article 7, Section 1, SUPPORT AND MAINTENANCE OF SYSTEM OF PUBLIC FREE SCHOOLS: "A general diffusion of knowledge being essential to the preservation of the liberties and rights of the people, it shall be the duty of the Legislature of the State to establish and make suitable provision for the support and maintenance of an efficient system of public free schools."

Whatever else courts have determined this sentence to mean, it clearly requires the Texas public school system to be productive, for efficient and effective—specifically, cost effective—are the defining objectives of productivity management. An *effective* system of public free schools would widely diffuse the knowledge essential to the preservation of liberties and rights, and an *efficient* one would do this at the lowest reasonable cost. Surely this is what those who wrote and ratified the Texas Constitution intended.

Texans have always wanted effective and efficient government, but now, more than ever, productivity improvements are required. As government has grown, so too has taxpayers' interest in how their tax

TIER's mission is for every child in Texas to graduate from high school fully prepared for higher education and the 21st century workplace as well as responsible citizenship. Our intermediate goal is that, by 2020, 80% of Texas high school graduates will achieve postsecondary readiness. We believe that this goal can be met through higher standards for teaching and learning; higher standards for academic and financial accountability; better assessments; more effective educators; intensive efforts to attack the reading crisis; and deregulation, innovation, and competition. This TIER policy paper focuses on education productivity, deregulation, and innovation. Policy papers on related topics are available on TIER's website: ***www.texaseducationreform.org****.*

dollars are spent. And as entitlement spending has increased, not only has government gotten bigger, but the public treasury has also been left with less money to fund essential government services such as public education.

In this political and fiscal environment, public education is under considerable pressure to explain what it has done with the increased funding it has been receiving and justify why it needs more. From 1988 to 2008, annual per-pupil costs in constant dollars increased from $6,659 to $11,024—a 66 percent increase. (The comparative national figure is 54 percent.) And over the past decade, Texas public education spending has increased almost five times as fast as enrollment (95 percent versus 20 percent), increasing from $28 billion to nearly $55 billion.[1]

Despite this growth in spending, student achievement gains have been disappointing. We will not rehash Texas performance data here, because it is well known and extensively reported elsewhere. (For example, see TIER's recent publication, *The State of Public Education in Texas*, available at www.texaseducationreform.org.) Overall, there have been steady gains, and we believe that public education in Texas is performing better than it ever has. The world is changing even faster than our education system is improving, however, and far too few students are on track for postsecondary success. The challenges are significant, and the stakes, as everyone acknowledges, are high.

Definitions

Before describing the foundational requirements for productivity management, we should first clearly define the word. Productivity is simply output divided by input. All work is a process, with inputs and outputs. To measure productivity for a specific process, the work of a team (including multiple processes), or an entire organization, inputs and outputs must be clearly defined and measured. It is typically easier to measure inputs, the unit of measurement frequently being hours of labor (labor productivity, the more common measure) or money (total factor productivity). Outputs, sometimes measured as outcomes—a distinction that is often useful—are more difficult, but clarity is required.

Let us start with a simple example: analyzing the production of ball bearings. Inputs include all the costs related to making a certain number of ball bearings, such as raw materials, machines, space, capital, insurance, time, and of course labor. The output is ball bearings, but not just any ball bearings. Quality as well as quantity matter. The only ball bearings that count are those that fall within specifications for size, weight, roundness, hardness, smoothness, etc.

One can see that improving productivity (acceptable ball bearings per dollar) is complex and challenging, even for work as conceptually simple as making ball bearings. Yet throughout all sectors of American business—agriculture, energy, mining, manufacturing, transportation, communication, and services of every conceivable type, including the arts, entertainment, and healthcare—productivity management is at the core of profitability and one of management's highest priorities.

Productivity Improvement in Public Education

Some may argue that productivity management is a very good thing for everyone else to do, but that only minimal productivity improvements in K-12 are possible. Educating children, they will say, is not making ball bearings. Educators cannot control their "inputs;" they do not choose the children they are asked to educate and have no control over home environments. Also, the educational process itself has natural limitations.

Indeed, public school educators are asked to educate all comers regardless of ability, readiness to learn, and home environment. We do not believe this expectation is unreasonable. Except for a very small percentage of children who have severe learning disabilities, all children—no matter what their background—have sufficient ability to graduate from high school, college and workplace ready.

Even if some children are not ready to learn at age six and come from non-supportive home environments, which indeed makes them more difficult to educate, schools control their learning up to 30 hours a week, over eight months of the year, for up to 13 years. Furthermore, taxpayers do not expect "A" grades from every child, nor do they really expect every child to be college and workplace ready at age 18. They would be happy to see 80 to 85 percent graduate to this standard. Consider the revolution that would be for the Texas economy and the quality of life for all Texans.

Though we recognize the challenges that educators face and applaud them for the important and difficult work they have chosen, we reject the idea that public expectations for public school performance are unreasonable and that educators face unique challenges that make significant improvements in productivity impossible. Educators are not the only ones with challenging work and limited control over inputs. Consider almost any professional in health and human services, all of whom are expected to obtain the best possible results and to do so productively.

Another objection to productivity management in education is the claim that the core educational processes—group instruction and individual study—are relatively fixed, making process improvements difficult. Since Socrates interacted in the Agora with the youth of Athens, teachers have provided instruction to students in groups, and solitary study and practice have been the keys to mastery. Just as the talent, labor, and time required to perform a Beethoven string quartet has not changed much since Beethoven, and men's hair is no more productively cut today than in the 1950s, just so, claim many, educating a child is still educating a child; it takes talent, labor, and time, just as it always has, and schools, like symphony orchestras, are about as productive as they are ever going to get.

Paul Hill and Marguerite Roza have examined this issue, referencing the work of 1960s economist William Baumol, who observed that productivity in labor-intensive business sectors lagged behind manufacturing.[2] This occurred primarily because labor-intensive services, like all business sectors, were faced with ever-higher salary and benefits costs; but unlike capital-intensive business sectors, they could not easily cut staffing without reducing output quantity or quality.

Baumol's disease, as it was called, was thought by many to be incurable. As Hill and Roza point out, however, in recent years, productivity growth in most labor-intensive services has outpaced productivity growth in manufacturing—but not so in education. Instead, labor costs in education have been steadily increasing, and productivity has declined. Nationally, since 1960, the number of instructional positions in public education has jumped from near 40 per 1,000 students to more than 100. The ratio of students to instructional positions is now 10 to 1.

How have other labor-intensive services "cured" Baumol's disease? Primarily through deregulation, information technology, and process innovation. Hill and Roza advocate understanding the key cost drivers in the current schooling model, focusing on learning systems outside of schools to identify alternative production processes that could yield higher productivity, and creating a policy agenda for identifying and replicating productivity-enhancing strategies.

Failure to tackle Baumol's disease in education in a systematic way, they believe, would be devastating, resulting in more layoffs, hiring freezes, furloughs, and wage and benefits cuts—with extremely negative consequences for students. If, on the other hand, "depressed revenues are used as a rallying cry for innovation," they emphasize, "the current fiscal crisis could ultimately strengthen public education by opening the door to improved processes that have the potential to do more with less."[3]

Productivity in District Business Systems

The business operations of every school district are foundational, for without effective business systems, nothing happens. For many school districts, business operations are really big business; and for all school districts, the business side of the house is the obvious starting point for productivity management. This

work is conceptually simple, though not necessarily easily done, because the statistical tools needed to understand, control, and improve processes can be quite sophisticated.

There should be no internal resistance to this work, however, and no changes in state policy are required. School districts simply need to apply the experience of business to the challenge of improving productivity for all of their business operations. Metrics can be established by clearly identifying outputs for every business function—and sub outputs for departments, teams, and even individuals—and dividing these outputs by controllable inputs. After metrics come targets, then process improvements to hit those targets.

With the guidance and support of the Council of the Great City Schools (CGCS), this has already been done by many of the nation's best-managed urban districts. In 2004, CGCS launched the Performance Measurement and Benchmarking Program with the following goals:

- Establish key performance indicators (KPIs) in various areas of school district operations.
- Benchmark and compare the performance of the nation's largest urban public school systems on these KPIs.
- Document effective management practices of top-performing districts to help other districts improve their operations.
- Automate the performance data so that districts can improve decisionmaking and resource deployment over time.[4]
- Develop standards of excellence on each of the indicators.

To accomplish the above, district managers and technical advisors with expertise in budget and finance, human resources, business services (transportation, food services, maintenance and operations, safety and security, and procurement), and information technology worked together to define KPIs and conduct benchmarking. Three types of KPIs were defined for each area: 1) "power indicators" for use at the strategic or policy level by superintendents, school boards, and chiefs, 2) "essential few" indicators for use by senior managers or directors, and 3) more technical "performance indicators" for use by managers and directors. Data required to calculate each of the indicators were then collected from a large number of school districts, analyzed, used to create dashboards and other graphic displays for the various indicators, and made available online.

As a result of this extensive work, CGCS has benchmarked 343 KPIs for all major operating and functional areas, including 68 power indicators for boards and superintendents.

The level of detail is impressive. In the Finance category, for example, KPIs were defined for Accounts Payable, Cash Management, Compensation, Financial Management, Grants Management, Procurement, and Risk Management. To illustrate further, in the Risk Management category, the following indicators were defined:

- *Power Indicators:*
    - Average workers' compensation claim duration (in days)
    - Workers' compensation costs as a percentage of payroll
- *"Essential Few" Indicators:*
    - Cost of risk per 1,000 students (adjusted for cost of living)
    - Workers' compensation litigated claims
    - Average cost per liability claim (adjusted for cost of living)
    - Liability claims per 1,000 students
    - Liability claims litigated
    - Workplace incident corrective action

- Employee incident rate
- Average cost per workers' compensation claim
- Annual workers' compensation cost per employee

Such information in the risk management area, for example, enables district leaders to see that the median value for the cost of risk per 1,000 students is roughly $79,000 among urban districts overall but ranges widely, from less than $12,000 in a few districts to more than $184,000 in others. A district with risk costs at the high end of the spectrum can then study what districts at the low end are doing and replicate their successful practices, thus not only reducing costs but also potentially improving other aspects of district operations, such as employee safety. [5]

Productivity in Teaching and Learning

Productivity management of a school district's core business, teaching and learning, is even more difficult than productivity management of its business operations, both conceptually and practically. For purposes of illustration, let us consider a relatively simple example: a summer school program in a small district (with two high schools) for high school students who have failed one or more state end-of-course examination. To keep it straightforward, let's stipulate two performance metrics: 1) the percentage of students who failed an examination who enroll in the program, and 2) the number and percentage of students who, at the end of the program, pass the exam for which they enrolled. The cost is easily calculated: additional building maintenance, such as custodial and utility costs, materials, direct labor, management, etc. A simple efficiency measurement would be cost-per-test-program-student. A simple quality measure would be cost-per-passing-test-program-student.

These numbers would be interesting, but because productivity is always relative, they would shed little light on the actual efficiency or effectiveness of the program. Trend data over three summers—along with innovations to improve productivity and quality by teachers and on-site administrators—would show whether or not productivity was improving. Benchmarking the programs' productivity numbers with similar programs in other districts would provide evidence of the program's actual efficiency and effectiveness. Productivity management usually starts with trend data but must always progress to benchmark data; both longitudinal and comparative data are required.

This simple example introduces the real complexity of productivity management in teaching and learning and illustrates a major point. Productivity measures linked to process improvements are most easily done at the micro level—for example, measuring and improving the productivity of a debate program. Productivity is also fairly easy to calculate at the macro level—for example, the total cost per on-time college and workplace ready graduate (number of graduates divided by sum of per-pupil, per-year costs for four years for entire cohort). Linking macro productivity measurements with specific innovations to improve processes is difficult, however, because so many processes contribute to the complex systems required to produce this result.

The most fruitful arena for productive management is mid-level systems—for example, measuring and improving the productivity of professional development, or elementary school reading and math, or a summer school program (our example above). Consider the challenge to our summer school program providers: to improve productivity, teachers and administrators would have to either enroll more students (in other words, increase class sizes) or reduce labor costs by using technology, or plan and execute more effective instructional approaches to improve passing rates, or all of the above.

We will not attempt to show just how all of this might be done. This paper is not and cannot be a manual on how to redesign major educational processes to improve productivity, though we will later identify the high-leverage points for productivity improvements and provide some examples of innovative districts and schools. Clearly, productivity management to improve the productivity of America's public schools is the lifetime work of educators, especially those with responsibility and authority, just as it is the lifetime

work of American workers in every other business and public sector to improve the productivity of their workplace.

Leadership and Foundational Requirements

The responsibilities and foundational requirements for productivity management are the same in every business and public sector. Those who do the work must manage it for productivity improvement; and those who own, govern, and lead must provide the goals and metrics, incentives, tools, and opportunities.

Productivity management in education is the work of educators. They are the ones who must redesign public education to improve efficiency and effectiveness. Reluctant as many may be to redesign the systems within which they have worked their entire professional lives, and as hard as this work may be, educators are the only ones who can do it, and do it they will if policymakers give them the incentives, the tools, and the freedoms they need to do so.

It is for these reasons that public education productivity improvement in Texas must start with the Texas Legislature, but it is also a school board responsibility, because elected officials—with the need to follow public opinion but also the responsibility to shape it—are ultimately in charge. They set the standards, they provide the resources, and they make the rules.

The five foundational requirements for productivity management in the public sector are:

1. Clear goals and performance metrics
2. Performance accountability
3. Comprehensive and transparent financial information linking costs to outputs
4. Deregulation
5. Innovation[6]

The first four foundational requirements for productivity management make it clear that only state and local policymakers—to be specific, legislators, school board members, and senior appointed officials—can create the environment required for this work to happen. Policymakers set goals, select assessments, establish accountability systems, mandate financial reporting systems, and regulate. The only thing they cannot do is innovate.

In some of these areas, state policymakers have made a good start. But in two areas, financial reporting and regulations, significant changes are required. To put it succinctly, educators will be more productive only if policymakers give them the incentives, the tools, and the freedom to be so. Although some educators may be resistant to the work, it is not educators who are holding back productivity improvements in K-12. It is policymakers. Legislators and school boards have, by design or absence of mind, created the inefficiencies and waste that today characterize public education.

Clear Goals and Performance Metrics

Let us start with outcome measures. Who decides the purpose and desired outcomes of public education? Legislators and school boards, or at least they should. Of course they should be guided in this work by educators, but in a democracy, as representatives of the people, elected officials have the responsibility to decide if high school graduation is the goal for all students, to define graduation standards, and to determine how students, parents, and the public will know if graduates meet these standards. From these policy decisions flow standards and assessments, designed with the help of senior appointed officials, for what children should know and be able to do at each major step on their path to graduation.

Goals, standards, and assessments are not easily chosen, for public education has been placed under the heavy burden of doing almost everything. Schools are expected to prepare children for success in college and the workplace; for informed and active citizenship in a large, diverse democracy; for understanding

of the natural world and appreciation of the human experience; and for much more. How can any district or school deliver all the outcomes expected by a diverse public that frequently changes its mind?

It cannot—unless policymakers discipline themselves, stick to priority goals, and understand the principles of local control and parental choice. Legislatures should limit themselves to academic standards and assessments in core subjects: English language arts, mathematics, science, and history. School boards should add additional goals, standards, and performance metrics for local priorities, such as upper level high school courses that build on core subjects and requirements or opportunities in liberal arts, languages, music, and sports. And schools, in the context of public school choice, should—to the greatest extent possible—provide additional foci on areas of interest to parents and students.

We know this prescription lacks specificity, but this is a short paper, and our views on specifics are unimportant. The key point is that productivity management requires clearly defined outputs and outcomes, that the state should clearly specify core outcomes and expect districts to productively produce these outcomes, that school boards should be equally clear about defined outcomes as they add desired goals to address their constituents' priorities, and that boards should apply this same standard to programs they authorize and fund at schools. In short, school districts do not establish all output or outcome measures but are nevertheless the unit with responsibility for productivity management.

Performance Accountability

Following immediately on goals, standards, and assessments is accountability for results, because productivity management without accountability is little more than wishful thinking.

In the private sector, the marketplace provides accountability. Organizations that cannot equal or exceed the value provided by competitors lose money and eventually disappear from the market. And what is value? It is customer-driven productivity and quality management.

The public sector is an almost total monopoly. State, county, city, and school district employees have few competitors. What is their incentive to deliver the highest possible value at the lowest possible cost? Without discounting honorable intentions, professional pride, and even passionate commitment, would anyone rely on just these qualities among managers and workers to provide value in healthcare, manufacturing, transportation, or communication?

Like their counterparts in the private sector, public sector managers need incentives to help them use resources wisely, make tough decisions, and put the customer's needs ahead of the wants of the organization. Moreover, workers' evaluations must include metrics that measure organizational effectiveness. Accountability systems provide these metrics and incentives. Public education needs accountability systems at every level. In Texas, the state has done this work far better than have school districts.

A second form of accountability is choice. Schools with a special focus (for example, magnet schools), along with district-wide public school choice and charter schools, generate partial marketplace forces within the public school system. Choice has its limits, though, since school location has such a powerful influence on the choices that parents make. Moreover, choice brings with it the uneven distribution of children, creating overcrowding in one school and underutilization in another. Nevertheless, creative solutions are available, and it is clear that more public school choice—including more appropriately regulated and funded charters and inter-district choice—would contribute to improvements in quality and productivity, not to mention parent satisfaction.

Comprehensive and Transparent Financial Information Linking Costs to Outputs

With outputs or outcomes clearly defined, and working accountability systems, the first two foundational requirements for productivity management are in place. The third requirement is fine-grained

knowledge of all necessary inputs. Specifically, what is required is the cost of every input used to produce an output and clarity on why the input is required and how it is used. Currently, Texas policymakers and interested taxpayers who want to understand just how much money is required to adequately fund public education to meet state standards do not have this knowledge.

The problem is not a lack of data, for districts keep excellent financial records, and many even post all of their checks online. Furthermore, the Texas Education Agency maintains large databases that store detailed information on district expenditures, coded by object and function. The problem is the way in which districts categorize and report their expenditures.

After almost two years of intensive research and analyses, the nonprofit and nonpartisan Texas Education Accountability Project, in a recently published paper entitled *No Financial Accountability*, reached the following conclusion:

> Even though we invest in companies for a living, [we concluded that] the only way we would ever be able to figure out exactly how a district was spending taxpayer money would be to recreate a new general ledger, and from that an annual financial report, by beginning with the thousands of underlying receipts from all of a district's individual purchases and expenditures.[7]

The primary problem with the current financial reporting system, continues the report, is that districts aggregate their expenditures into a small number of very generic functional areas defined by purpose (for example, "Instruction"). Because each functional area contains a hodge-podge of expenditures, it is nearly impossible for anyone other than an in-house district financial expert to link specific expenditures with specific outputs. Even for the district financial team, the work would be difficult and time consuming.

Consider the example of "Instruction." More than half (56 percent) of school districts' expenditures, on average, are bundled together into this line item, and the majority of this money is spent on teacher salaries. But many other items also find their way into this functional area, including staff gifts, and one would go almost crazy trying to identify the loaded salary costs for specific outputs, such as third grade reading proficiency, at a given elementary school.

District financial reporting must be transformed so that policymakers at the state and local level and interested parents and taxpayers can see how tax dollars are being spent and make judgments about effectiveness and efficiency. More specifically, disaggregation (or "unbundling") of financial data and financial reports linking expenditures to the educational outputs of schools and programs are urgently needed. We call this financial accountability. Without financial accountability and the absolutely essential information provided by performance metrics, it is almost impossible to know how much money state and local policymakers should ask taxpayers to provide for public education.

For productivity management, school districts will have to dig even deeper in order to analyze costs linked to specific outputs that are parts of larger systems. But a new financial reporting system will make unbundling for specific productivity improvement projects much easier and become the platform on which productivity management can rest.

What are the essential requirements for a new school district financial reporting system that provides financial accountability for policymakers and taxpayers and the necessary foundation for productivity management? The Texas Education Accountability Project has proposed the following six changes:

1. Include a list of major spending categories with titles capturing the specific type of expenditure (not the general purpose), such as compensation expenses; teacher, administrator, and staff professional development; purchases of supplies and materials directly used for teaching students; athletic facility acquisition and maintenance costs; etc.

2. Include a separate schedule that contains sub-line items that provide detail for each of the major spending categories.
3. Include an organizational chart and narrative explaining the district's operating structure (including the number of students per school, the number of teachers and non-teaching staff by school, etc.).
4. Provide disclosures regarding all agreements with non-district employee contractors, including expenditures and services for each, details on competitive bidding and contract renewals, contributions to school board member campaigns, etc.
5. Include detailed lists of the district's core outputs, including courses taught by grade, number of students who successfully completed each, number of students tutored, standardized test results, etc.
6. Provide additional disclosures regarding shared services agreements with other districts or governmental entities.

"Anyone worried about our State's system of public education," conclude the study's authors, "has a compelling interest that these changes be made."[8] We agree!

Innovation

With clear output metrics in mind and deep knowledge of linked inputs, productivity management can begin. And the focus is always on process—because the key insight of productivity management is that all work is a process, with inputs and outputs; and that productivity improvement is process control to reduce variability, and process innovation to reduce the cost of inputs, time requirements, and output quality and quantity. Only those with deep knowledge of the work, those actually doing it, can redesign work to improve productivity.

Given the purpose of this paper, going deeper into the work of productivity management is unnecessary, and indeed it would be almost impossible to do, because it entails a body of knowledge as rich and deep as other major business disciplines, such as planning, communication, accounting, and human resource management, and in fact includes within it all of the above. However, we would like to indicate what we believe are the major leverage points for productivity improvement in public education.

There are six key and interrelated leverage points for improving productivity in education's core business, teaching and learning. Let us frame these as questions:

- How should students be grouped for instructional purposes, and how frequently should groups be reconfigured?
- How much time should be scheduled for instruction, and how often should time requirements change?
- How much work should be assigned to individual students, and what specific work should be done in class, outside of class, and online?
- How should teachers be chosen, trained, grouped, and deployed?
- How should districts contract for instructional services?
- How should technology be used?

We all know how it currently works. In elementary school, one teacher is assigned to a group of children, about 20 to 25 per class, and the class membership is fixed for the semester. As rigid as this appears, however, there is a fair amount of flexibility. Other teachers come to the class from time to time to teach in their specialty, and the homeroom teacher has significant freedom to create smaller, flexible groups of

children for specific instructional purposes and devote more or less time to subjects and individual children. Presently, technology has not significantly changed the instructional process in most elementary schools.

Though there is more variety in course offerings and more teacher specialization, middle and high school are far less flexible, by comparison. Students and teachers are assigned to classes with fixed times, with freshman and sophomore classes tending to be larger and junior and senior classes tending to be smaller. And for the entire semester, not much changes. The teacher must cover the subject matter. Some students learn quickly and are bored; others learn more slowly and fall behind. No matter, they all share the same time and experience. Presently, technology is used somewhat, and a small percentage of students take entire courses online.

And as for the teachers, aside from substitute teachers and some rare exceptions, all teachers are full-time salaried employees, receiving the same health and retirement benefits, the same rights and job security, and the same salary, depending on degrees and years of service.

This may have been the best way to educate our grandparents, but does anyone believe that this factory model, adapted for education by administrative progressives almost 100 years ago, is still the most productive way to educate children? In today's technology- and information-rich environment, when every other business sector has been transformed and productivity has multiplied again and again, does it still make sense—no matter what the subject or learning readiness of the student—to fix student groups and learning time for an entire semester? To use technology as supplemental instead of integrating it into the core of teaching and learning processes? Or to fail to engage the enormous intellectual and cultural talent embedded in our communities and leave all teaching to a rigidly managed workforce?

Perhaps, from time to time, some teachers should be assigned to feeder patterns, not schools. Perhaps, from time to time, some instruction should be contracted to colleges, museums, hospitals, or professional or trade associations. Perhaps, from time to time, four elementary teachers—reading and language arts, math, social studies, and science—should be placed in a team and assigned 100 or even 120 students (within a two-year age band) with the freedom to configure the students into ever-changing groups: some large and some small, some with longer classes and some with shorter classes, so that the children with the greatest needs receive the most intense instruction, all children reach mastery, and no-one is bored. And perhaps, from time to time, online learning should be blended into the curriculum, especially at the middle and high school level. With expanded online learning options, small high school classes might no longer be needed.

The old paradigm that assigns students to schools and groups them into classes, with a solo teacher at the front of the room, and stair-steps children up through the grades from elementary to middle to high school should be reexamined with an open mind. The current system is built on the assumption that time is the constant and quality is the variable, and that grades, classes, and teachers assigned to classes is the only way schools can be organized. This assumption is no longer valid, and it has not been for quite some time.

Deregulation

Why have schools not innovated more aggressively in some of the ways suggested above? For three key reasons: most school people have not wanted to innovate; most parents have not wanted schools to innovate; and, responding to these wishes, legislators have regulated school districts so that it is difficult to innovate, even if boards and superintendents want to do so.

Some explanation is required. First, school people. We do not believe that educators are significantly more resistant to change than professionals in other business sectors. Like most of us, they are more comfortable doing things the tried and trusted ways they have always done them. The prevailing model—

the so-called "One Best System"[9]—is relatively easy to manage, fairly effective, and remarkably impervious to change.

For generations, teachers have been assigned to semester-long, fixed groups of grade-level children in the lower grades and subject-matter classes in middle and high school. Teachers are more comfortable teaching the way they were taught, and the same goes for parents. They are more comfortable having their children taught the way they were taught. Change always comes with risk, and why take risks with children? The larger society agrees. After all, everyone has gone to school and remembers how they were educated. And for middle class professionals, who have political influence beyond their number, the memories are mostly positive. The One Best System served them well.

What school people, parents, and many active citizens have wanted over recent decades is not innovation to improve productivity. What they have wanted are smaller classes, increased special services, and enrichment. In addition, most teachers have wanted limited entry into the profession, job security, predictable salary increases, and healthy pensions.

The Texas Legislature has obliged, giving teachers and parents what they want. It has also responded to various reports about something gone wrong, or some problem not resolved, with mandates. Some of the mandates make sense, but many do not. The result is a long and extremely complex education code that regulates way more than it should, frequently requires additional administrative staff, and stifles innovation. The number and detail of state regulations will overwhelm anyone who examines all of the mandates in the Texas Education Code, as the Texas Association of School Board does periodically.[10]

Few, if any, of these regulations are designed to improve productivity, and in fact most have the opposite effect. Most are designed to bestow and protect teacher rights, as if the elected Texas Legislature is any more concerned about teacher rights than elected school board members, who have to hire and retain highly qualified professionals in a competitive marketplace and stand for re-election in low turnout elections where most teachers and their families vote. Rather than encouraging changes in how work is done, these mandates encourage hiring more people to do the work and restrict the ability of school districts to effectively and efficiently manage them.

TIER has previously outlined these challenges and proposed statutory changes that would significantly reduce the negative impact of onerous state regulations on the productivity and quality of public education in Texas. Specifically, TIER has recommended changes in Chapter 21 of the Texas Education Code that would give school districts significantly more freedom to manage human resources in the spirit of the core management principle that authority must be commensurate with responsibility and accountability.[11]

Productivity Improvements Benefit Children and Taxpayers

Productivity in public education is already attracting the attention of researchers. Even though state policymakers and school boards are not yet engaged in creating the necessary policy framework for deep work in productivity management, there is sufficient variation in productivity among school districts to show the potential benefits to children and taxpayers if policymakers and school district leaders made productivity improvement a high priority.

A groundbreaking study published by the Center for American Progress (CAP)[12] compared the educational productivity of different school districts in various states and revealed a number of eye-opening findings:

1. Many school districts could reap large gains in student achievement if they spent existing funds more productively. In California, for example, a "low-productivity" school district could see as much as a 25 percent increase in student achievement if it improved its efficiency from the lowest

level to the highest. Overall, CAP found that 41 states have the potential for double-digit percentage increases in achievement without necessarily spending more money.

2. Low productivity is costing the nation an estimated $175 billion annually, which is equivalent to 1 percent of the gross domestic product. After adjusting for variables beyond districts' control, school districts with below-average productivity spent nearly $1,000 more per student than above-average districts did.

3. Additional funding corresponded to higher student achievement in only 16 states. In five states, including Texas, additional dollars predicted slightly *lower* achievement. The CAP authors emphasized that this does not mean that money has no impact on student achievement; it means that money matters only if it is spent in effective ways.

4. School district efficiency varies widely within states. Some districts spent thousands more per student to obtain similar student achievement results. In California, for example, the range of spending among districts in the highest third of student achievement was more than $8,000 per student.

5. High-spending districts are often not high-achieving. In Florida, for example, only 17 percent of the state's highest-spending districts were also in the highest-achieving tier.

6. Low income and minority students are far more likely to be enrolled in school districts with low levels of educational productivity. The least efficient districts tended to have significantly larger percentages of black students (18 percent versus 5 percent) and Hispanic students (14 percent versus 7 percent) than the most efficient districts.

7. The low quality of education data impedes the study of educational productivity. Crucial data on school finance, operations, and outcomes are often unavailable, making it hard to accurately measure districts' outcomes relative to expenditures. When states and districts do gather key education data, they often use inconsistent definitions and weak data collection practices.

8. The most inefficient districts in the country spend (on average) an extra 3 percentage points of their budgets on administration, operations, and other non-instructional expenditures, which translates into large per-student spending differences. "This does not mean that high administrative costs cause low productivity, since inefficiencies are often 'buried deep' within the operation of school systems," the CAP report explained. "The problem may be large expenses on programs or salaries that have little impact on student achievement. Moreover, districts with lower achievement are often subject to increased state regulations, causing increased administrative burdens."[13]

9. There is significant variation in educational productivity across large urban districts in different states. Some urban districts far more per student than others but nevertheless had weaker results on the National Assessment of Educational Progress (NAEP) math and reading assessments.

What distinguished the most productive districts from the least? The CAP study identified a number of characteristics, including a sharp focus on academic outcomes; a priority on high-quality instruction; smart use of data and data-mining practices to reduce inefficiencies; strong community relations; and a willingness to make tough choices.

If, as the above examples indicate, districts have been able to make significant productivity improvements within the One Best System just by taking the first steps in productivity management—controlling

variability and adopting best practices—consider the productivity improvements that would be possible by ongoing innovation in redesigned systems.

Conclusion

Earlier in this paper, we defined the five foundational requirements for productivity management in the public sector as follows:

- Clear goals and performance metrics
- Performance accountability
- Comprehensive and transparent financial information linking costs to outputs
- Deregulation
- Innovation

Currently in Texas, much work remains to be done to clarify goals and align accurate and reliable performance metrics with them. Performance accountability is well underway but remains a work in progress. Indeed this work will never end, because goals, metrics, and accountability are moving targets. Revising and improving them will be an ongoing priority for succeeding generations of state policymakers.

Creating financial reporting systems that will provide transparency to policymakers and taxpayers as well as facilitate productivity management within school districts, and the deregulation that will make meaningful productivity management possible, is work that has not yet begun. This work should be a high priority for the next session of the Texas Legislature and for the Texas Education Agency.

Austin cannot innovate. This is work for school districts. But districts need not wait for Austin to give them all the tools they need for productivity management. They can and should start now by developing district goals and performance metrics, district accountability systems, and accounting systems that enable them to clearly link outputs with inputs. In fact, school boards should demand that they do so.

In the end, as it should be in a democracy, it is up to the people. But elected officials have an obligation to understand basic productivity principles and put them into practice. The Texas Constitution and the public interest of the state demand that they do so. This may require them from time to time to resist the pressure of special interest groups and the wishes of uninformed voters and push back with education to shape public opinion. That, after all, is the definition of leadership.

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[1] We believe these summary statistics are a valid representation of Texas spending patterns, but for those who wish to dig deeper, see: State Comptroller's Financial Allocation Study for Texas (FAST), available at *http://fastexas.org/study/exec/spending.php#ex9*. Also see: Brooke Rollins Terry, Brittany Wagner, and Bill Peacock, Texas Public Policy Foundation, June 2010, available at *http://www.texaspolicy.com/pdf/2010-06-RR07-EducationGrowth-BT-BW-BP.pdf*.

[2] Paul Hill and Marguerite Roza, *Curing Baumol's Disease: In Search of Productivity Gains in K-12 Schooling,* Center on Reinventing Public Education, CRPE White Paper # 2010-1, p. 11.

[3] Ibid.

[4] Now fully mature, the CGCS system (available at http://www.manage4results.org/perf) features online data collection instruments, automated analyses of performance-indicator data, data displays (e.g., dashboards, graphics) that compare member district operations on uniform benchmarks, and Business Intelligence tools that allow districts to conduct predictive modeling to validate improvement plans.

[5] Council of the Great City Schools, *Managing for Results in America's Great City Schools: A Report of the Performance Measurement and Benchmarking Project,* October 2011, p. 6.

[6] In the private sector, customer requirements drive performance metrics; the marketplace provides accountability; comprehensive financial information that links costs to outputs are still required; and the freedom to innovate in every area of the business is assumed. However, private sector businesses must operate within governmental regulatory structures, which are not always trivial. We consider innovation before deregulation in this paper, because in public education, innovation issues make clear why deregulation is required.

[7] Mark P. Hurley, Yvonne N. Kanner, and Jonathan Yu, *No Financial Accountability: Why Texas K-12 public education lacks any real financial accountability and the implications for both the ongoing public school financing litigation and the future of our state,* Texas Education Accountability Project, March 2012; available at http://www.texedap.com

[8] Ibid.

[9] The phrase "one best system" refers to historian David Tyack's definitive book, *The One Best System: A History of American Urban Education*, 1974.

[10] Texas Association of School Administrators and Texas Association of School Boards, *Report on School District Mandates: Cost Drivers in Public Education*, October 2010.

[11] Donald R. McAdams, *Local Control with Accountability for Results, Flexible Workforce Management for Performance and Productivity*, Texas Institute for Education Reform Special Report, March 2011.

[12] Ulrich Boser, *Return on Educational Investment: A District-by-District Evaluation of U.S. Educational Productivity*, Center for American Progress, January 2011; available at http://www.americanprogress.org/issues/2011/01/pdf/dwwroi.pdf

[13] Boser, pp. 31-33.

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