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From Overhead Projectors to Smart Boards

We Need to Better Understand the Growth of Technology in Texas Schools

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Technology is an increasingly important part of the tool kit for Texas school districts. At least we think it is. When we canvassed the state interviewing district officials to learn and disseminate statewide best practices, we definitely heard a lot about districts that were purchasing laptops for every child or investing in the latest technological advancements.[1] It sure sounded like a trend. Unfortunately, we can't be sure, because current data systems at the Texas Education Agency (TEA) provide no way to assess the level of technology spending, much less its impact on academic performance and fiscal efficiency.

Importance of Tracking

Tracking education technology investment is essential in order to understand its impact on learning. Although the rate at which technology in the classroom has expanded has far outpaced research that examines its effect on student learning outcomes, the US Department of Education has determined that technology can improve academic achievement when it:

1) is used to supplement rather than supplant other educational practices,
2) features embedded assessment tools to measure student performance during learning activities, and
3) is equitably distributed across school districts.[2]

Used wisely, technology can have real effects on a student's education and a district's cost-savings potential. It can also have real effects on public school equity. The Texas school funding formula is designed to equalize funding for maintenance and operations costs, but much technology is purchased through interest and sinking funds, which aren't equalized. In order for policymakers to assess whether technology is being used wisely and distributed equitably, there must be more transparency.

Lack of Financial Reporting Requirements

It's hard to get a handle on technology spending by Texas school districts because the Texas Public Education Information Management System (PEIMS) does not have an exclusive financial reporting category for technology-related revenues or expenditures. Instead, technology-related revenues and expenditures are inconsistently captured in the reporting of other cate-

gories that have an indirect relationship with technology. For instance, the Texas Financial Accountability System Resource Guide (FASRG) reporting category "Supplies and Materials: Not Specified" captures some but not all technology expenditures.[3] In all, there are thirteen currently defined state reporting categories that include district technology revenues and expenditures, but there is not one category that captures technology in its totality. Computers, printers, and other technology spending is recorded in a category at a district's discretion—focusing on function rather than form. Although FASRG has a category for "books," it doesn't have the same "form category" for technology, perhaps highlighting the fact that reporting requirements have not been updated since 2010.[4]

Problem of Identifying Technology Revenue

Because data on technology investments are not reported directly to TEA, the Texas Smart Schools (TSS) capstone team turned to other data sources to try and assess technology spending. We examined data from the Texas State Comptroller regarding Texas ISD bond elections since 2013. We found over $19 billion in voter approved bonds that could have involved technology expenditures (those listed as having either "technology" or "new school" purposes).[5] A more in-depth examination of the $19 billion reveals several points of interest. First, it is important to note that not all $19 billion went to technology. Of the 117 approved ISD bonds that the team deemed to capture funds for technology, 69 specifically outlined technology as one of the categories funded, totaling $12.25 billion. Only one passed bond funded only technology, valued at $25.9 million.[6] The other bonds funded some mix of technology and non-technology items. But even if we assumed that only 25% of the bonds passed between 2013 and 2016 with the expressed purpose of "technology" were actually funding the purchase of new educational technology, more than $3 billion in new technology would have been funded.

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The other bonds the TSS team qualified as capturing technology expenditures were "new schools" bonds that did not list technology as a purpose. New schools account for approximately $7 billion of the $19 billion total, and would presumably have the latest technology in the classroom and general operations. Using a 2005 study by the Bush School of Government and Public Service[7] that found that approximately 10% of Texas educational capital is in general equipment (the category under which new technologies would presumably be included) we estimated that new school bonds funded hundreds of millions of dollars in the latest educational technologies from 2013 to 2016. If even 5% of the bonds funded district technologies, $350 million in new technology money was generated via bonds between 2013 and 2016. The same approach can be applied to another $4.2 billion in bonds whose listed purpose was both technology and new schools, funding hundreds of millions of dollars more in new technology.[8]

Further examination of technology expenditures and funding in the state found that in 2015, Texas received $167.5 million in E-rate modernization grants from the Department of Education for Wi-Fi access alone. This total was the second highest amount in the country and a 62% per-

cent increase over the average that Texas had received from 2010 to 2014.[9] Combined, this somewhat convoluted methodology attempting to estimate district technology expenditures demonstrates 1) districts are spending hundreds of millions, if not billions, of dollars on new education technology and 2) there is currently no way to determine with any certainty the full scope of this growth. Texas districts are spending substantial money on new technology, and the impact cannot currently be represented beyond rough estimates from bond election data. The state can and must do better.

Increasing Technology Transparency

Current state reporting requirements fail to capture district practices and movements toward technology despite evidence from bond elections and federal funding that indicates that Texas districts are pouring money into it. Yet current state reporting requirements have a category reserved explicitly for extracurricular activities, mandating that districts tell the state how much they spend on equipment (such as football helmets) and athletic event officials.[10] The state appears more interested in knowing how much districts spend on football helmets than how much they spend on personal laptops. This is especially troublesome as technology expenses become more common in the state.

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Texas has a definite problem with transparency when it comes to education technology revenues and expenditures. The TSS team, however, determined that the state could begin tracking technology spending through FASRG or PEIMS, or it could commission a regularly scheduled study to examine as much. This is not unprecedented. The Georgia Department of Education has conducted an "Annual State Technology Inventory Survey" for the last seventeen years.[11]

Conclusion

Texas must update its reporting practices to better capture the trend toward technology, so that the TEA and outside entities, such as TSS, can accurately assess the effectiveness and efficiency of this trend. Currently, there is no way to know how much districts are spending on education technology, and without this knowledge districts are spending massive amounts of money without definitively knowing the effect of those expenditures on student achievement and fiscal efficiency.

Research shows that benefits for education technology exist if used correctly.[12] Texas districts have drastically increased expenditures on education technology in the last five years, with another 51 ISD bonds that list "technology" as one of their explicit purposes scheduled on May 6, 2017 alone.[13] Yet Texas has no way of measuring technology investments and their impact on student academic success and fiscal efficiency, rendering the state incapable of tracking and evaluating the effectiveness of such spending and programs. Texas and its school districts should record their technology-specific expenditures separately from their other practices so that Texas may begin to parse out the most effective education technology practices to further student achievement and district fiscal efficiency. If the state can track football helmet expenditures, it can do the same for technology. The

state could begin doing so by:

- Subdividing current reporting requirements to include technology-specific expenditures;
- Creating a new reporting category that captures technology related revenues and expenditures; or,
- Conducting a study to examine Texas school district education technology infrastructure and track education technology trends over time.

By implementing one or a combination of these practices, Texas will be able to successfully account for technology-related expenditures and assess their impact.

About the Author

Joseph Hood is a 2017 graduate of the Bush School of Government and Public Service with a Master of Public Service and Administration degree.

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Notes:

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13. Bond Election Results (see note 5).

About the Texas Smart Schools Initiative

TXSmartSchools.org is an online resource which allows anyone to access Texas school and district-level data and "Smart Scores" free of charge. It uses comprehensive academic, financial, and demographic data to create the fairest, most apples-to-apples comparisons available. The goal is to improve education by identifying Smart Schools that are both effective and efficient and then highlighting their successful practices.

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