

# Impact for professional development expenditure on student achievement in Texas public schools

**Dr. Jason L. Johnston.**  
Texas A&M University-Commerce  
Commerce, Texas

**Dr. J. Ray Thompson**  
Texas A&M University-Commerce  
Commerce, Texas

**Dr. Chuck Holt**  
Texas A&M University-Commerce  
Commerce, Texas

## Abstract

The debate over whether money matters in education has been waged in journal articles, legislatures, and courthouses all across the United States of America with no decisive resolution. In a time of heightened focus on educational accountability, district administrators have concentrated on allocating resources to those areas with the greatest impact on student achievement. It is essential that research continue in the area of effective educational resource allocation to determine the choices that yield the highest return on investment when considering student achievement. The purpose of this study was to independently examine the relationship of professional development expenditures for both *property wealthy* (Chapter 41) and *property poor* (Chapter 42) school districts in the state of Texas with student achievement as measured by the data from the Texas Assessment of Knowledge and Skills. The intent of this quantitative study was to narrow the resource allocation focus from the more broad instructional expenditures category by extracting and isolating the professional development sub-category for analysis. Policy makers and school researchers will find significance in the study as they continue to debate whether money matters when determining current funding policy and school accountability measures.

**Keywords:** professional development, school finance, education

## Introduction

Due to the litany of budgetary constraints that the United States of America and Texas faces, some researchers have identified a need to ensure the most effective and efficient use of educational resources (Jones & Slate, 2010a). The debate over the impact of educational funding on student achievement has a long history that dates back at least to the findings of the 1966 publication known as *The Coleman Report*. Two decades later, the 1983 report, *A Nation at Risk*, intensified national concerns for the perceived failures of the country's educational system, specifically, the growing performance gap between economically disadvantaged students and students from districts with more available resources (Burtless, 1996).

The debate over whether money matters in education has been waged in journal articles, legislatures, and courthouses all across the country with no decisive resolution. Hanushek (1994) has conducted studies and insists there is no significant correlation between funding and student academic performance. Hedges, Laine, and Greenwald (1994) refuted Hanushek's findings, stating that the study was inadequately conducted and that funding does yield a positive impact on student performance. Greenwald, et al. (1996) continued to make the case that when the data is properly interpreted, it is evident that educational funding is a relevant variable when seeking to improve academic outputs. Several states passed legislation that required specific spending levels in an effort to improve student achievement. Jones, Bingham & Jackson (2007) found no relationship between instructional expenditures on student outcomes when they examined the impact of the 65% rule on student achievement in Texas. A later study did find a relationship between instructional expenditures and district performance ratings (Jones and Slate, 2010a).

Picus (2004) suggested a more narrow examination of expenditures was necessary to identify what, if any, aspects of educational spending most directly impacted student achievement. Instructional allocations drew the eye of many school leaders and researchers. Higher performing schools tended to allocate instructional expenditures at higher levels than their lower performing counterparts. Picus (2004) used data from the National Center for Education Statistics (NCES) to determine that roughly 61% of expenditures from 1950 onward were spent on instruction and that district expenditures were relatively consistent throughout most school districts. States were quick to pass legislation mandating instructional allotments be allocated at 65% of total expenditures (Jones & Slate, 2010b). Rick Perry, the Governor of Texas, issued Executive Order number RP47 in 2005, mandating school districts to spend at least 65% of district funds on instructional purposes (Perry, 2005). Even though the order was repealed, effective in July 2010, the mandate sparked studies within the state on the impact of the 65% rule (Texas Association of School Boards [TASB], 2010). These studies raised more questions about the categories of spending within the instructional aspect of education budgets and the effectiveness and efficiency of the monies spent on student achievement (Jones et al., 2007).

Professional development expenditures fall within instructional allotments and are a natural focus when discussions of improving academic performance are occurring in most education related discussions. As states continue to measure the return a dollar of instructional spending will yield, it is important to examine the impact of professional development expenditures on student achievement. At the 2011 Texas Association for Supervision and Curriculum Development (TASCD) conference, Thomas Guskey alleged that most professions dedicate roughly 10% of time to professional growth activities, whereas, education tends to hover in the 3% to 5% range (Guskey, 2011).

Educational institutions have taken a varied approach toward professional development implementation and evaluation over the past one hundred years. As accountability from state and federal mandates continues to increase, school systems are seeking to implement ongoing professional development that is consistent and assessable in terms of implementation and effectiveness in regard to improving student achievement (Mouza, 2007). Parry (1996) indicated determining the return on investment of professional development activities is very difficult. The increased focus on accountability has led to increased investigation of professional development effectiveness studies. The examination of available professional development studies has produced concerns among professionals in the field. As noted by Guskey (2011), of the over 1,300 studies collected and examined by Southwest Regional Education Laboratory (SREL) on professional development effectiveness, only nine meet the What Works Clearinghouse's standards for credibility.

When studying the impact of education expenditures in Texas, it is important to consider the distinction of school districts classified as *property wealthy* (Chapter 41) and *property poor* (Chapter 42) by the Texas Education Code (TEC). Local school district property taxes, state funds, and federal funds account for the funding for Texas' public schools (Davis, Dawn-Fisher, McKenzie, Rainey, & Wall, 2012). A complex system of formulas is in place in an effort to ensure equitable distribution of funding to the state's public school system. The Foundation School Program (FSP) establishes the amount of funding due from state and local taxes for each district in accordance with current finance laws. In its current structure, the FSP is meant to ensure that all districts, regardless of property wealth, are allocated "substantially equal access to similar revenue per student at similar tax effort" (Davis et al., 2012, p. 1). This effort has led to a complicated funding system that requires property wealthy districts to return local tax revenues to the state to be re-dispersed to property poor districts. Chapter 41 of the TEC outlines the provisions of the *Robin Hood* plan that property wealthy districts must adhere to when they qualify to have funding recaptured by the state (Davis et al., 2012).

As the state continues to find the most suitable, and legal, formula for funding public schools in an equitable manner, questions loom about the positive or negative impact on academic achievement the funding system has on both Chapter 41 and Chapter 42 schools. Following the lead of Picus (2004) and numerous other educational researchers, this study intends to independently examine the impact of professional development expenditures of both Chapter 41 and Chapter 42 Texas public schools on student achievement as measured by the Texas Assessment of Knowledge and Skills (TAKS) (Greenwald, et al., 1996).

### **Statement of the Problem**

Policy makers and educators who are faced with dwindling resources continue to search to find ways to provide today's school children with the knowledge and skills they need to compete in a global society that promises to be increasingly interconnected (Moak, Casey & Associates, 2011). The legislature of the state of Texas determined to classify and fund schools based on property wealth in an effort to ensure equitable and adequate funding (Benson & Marks, 2005). Fiduciary efficiency is quickly becoming the most challenging issue faced by educational decision makers (Odden & Picus, 2008). It is essential that research continue in the area of effective educational resource allocation to determine the choices that yield the highest return on investment when considering student achievement.

### **Research Design of the Study**

The purpose of this quantitative study was to independently examine the relationship of professional development expenditures for both Chapter 41 and Chapter 42 school districts in the state of Texas with student achievement as measured by the data from the Texas Assessment of Knowledge and Skills (TAKS) as reported by the All Students category. To accomplish the purpose of this study, the following research questions were posited: First, what relationship exists between the district level professional development expenditures based on the preceding 3-year average and overall levels of student achievement of K-12 public school districts that are classified as Chapter 41, property wealthy, in Texas as measured by the TAKS test in the 2010-2011 school year? Second, what relationship exists between the district level professional development expenditures based on the preceding 3-year average and overall levels of student achievement of K-12 public school districts that are classified as Chapter 42, property poor, in Texas as measured by the TAKS test in the 2010-2011 school year?

The hypotheses statements in this study concentrated on student achievement data as measured by state passing percentages from all four areas of the TAKS assessment. First, when

isolating property wealthy schools, Chapter 41, there will be no significant relationship between student achievement on the TAKS test and the district level professional development expenditures based on a preceding 3-year average. Second, when isolating property poor schools, Chapter 42, there will be no significant relationship between student achievement on the TAKS test and the district level professional development expenditures based on a preceding 3-year average.

### **Significance of the Study**

This study has national and international significance to policymakers and educational practitioners regarding the relationship between student achievement and resource allocations. Practitioners in education will find the study significant considering the heightened need for fiscal efficiency amidst increased legislative mandates and increasing student performance expectations. Policymakers may find significance in the study as they continue to debate whether money matters when determining current funding policy and school accountability measures (Hartman, 1999).

Picus (2004) suggested a more narrow examination of expenditures was necessary to identify what aspects of educational spending most directly impacted student achievement. This study narrowed the resource allocation focus from the more broad instructional expenditures category by extracting and isolating the professional development sub-category for analysis. This study laid the groundwork for future examination of efficient use of resources to impact student achievement.

### **Method of Procedure**

This quantitative study was designed to examine the relationship, if any, of professional development expenditures of Chapter 41 and Chapter 42 Texas public schools with student outcomes on the TAKS. In an effort to establish a clearer picture of the impact, a 3-year average of professional development expenditures was established based on the required state financial reporting of the districts. The sample population consisted of K-12 Texas public school districts that reported assessment data from the TAKS for the 2010-2011 school year. Averaged expenditure data of Chapter 41 and Chapter 42 school districts were compared to overall district performance on the state assessment.

### **Collection of Data**

The Texas Education Agency (TEA) requires that all Texas public school districts report their fiscal and assessment data each year. Professional development expenditure data, as reported in budget function code 13, were requested and obtained from the TEA for all districts for the 2008-2009, 2009-2010, and 2010-2011 school years. In conjunction with the financial data, TAKS assessment data for each district were requested from the TEA for the 2010-2011 school year. Requests to the TEA included that all districts be identified as Chapter 41 or Chapter 42 as defined by the Texas Accounting Code (TAC). In circumstances where the chapter designation changed for a district, for the purpose of this study, the district was excluded.

### **Treatment of Data**

Upon completion of data gathering, a quantitative statistical analyses approach was administered. Microsoft Excel was utilized to produce descriptive statistics of the data. Pearson product-moment coefficient was used to analyze the data to determine possible relationships. Scatterplots provided visual representation of the final analyses. The study utilized two state determined groups, Chapter 41 and Chapter 42 districts respectively, and examined the independent variable of percentage of average professional development spending based upon average overall district revenue. The independent variable was compared to the dependent variable of percentage of

overall students passing all areas of the 2010-2011 TAKS assessment. The data were measured at an Alpha = 0.05 level to determine statistical significance.

The data were divided into two separate study groups, Chapter 41 and Chapter 42, for independent analysis. The Chapter 41 study group was comprised of 241 Texas public schools. This group represented approximately 22% of the total population being studied. The remaining 864 school districts, or 78% of the population, were analyzed within the Chapter 42 data set. All data were analyzed utilizing Microsoft Excel for Mac 2011. The software was used to calculate minimum, maximum, mean, standard deviation, Pearson  $r$ , and  $r$ -squared to determine possible relationships between staff development spending and student outcomes on the TAKS from the 2010-2011 school year

## **Findings**

Pearson correlation statistics were utilized to determine whether a relationship existed between district staff development expenditures and student outcomes on the 2010-2011 TAKS assessment for Chapter 41 school districts. The Research Hypothesis<sup>01</sup> conjectured that when isolating Chapter 41 school districts, no significant relationship would be found between student performance on the TAKS test and professional development spending. Two hundred forty-one school districts were analyzed in the Chapter 41 study group. District level staff development expenditures, which were calculated over a 3-year period between 2008-2011, served as the independent variable. The dependent variable was the mean passing percentage of all students of grade levels 3-11 from each Chapter 41 district for all 2010-2011 TAKS assessments administered.

Pearson correlation statistics were utilized to determine whether a relationship existed between district staff development expenditures and student outcomes on the 2010-2011 TAKS assessment for Chapter 42 school districts. The Research Hypothesis<sup>02</sup> stated that when isolating Chapter 42 school districts, no significant relationship would be found between student performance on the TAKS test and professional development spending. Eight hundred sixty-four school districts were analyzed in the Chapter 42 study group. District level staff development expenditures calculated over a 3-year period between 2008-2011 served as the independent variable. The dependent variable was the mean passing percentage of all students of grade levels 3-11 from each Chapter 42 district for all 2010-2011 TAKS assessments administered.

Research Question 1 posited what relationship exists between the district level professional development expenditures based on the preceding 3-year average and overall levels of student achievement of K-12 public school districts that are classified as Chapter 41, property wealthy, in Texas as measured by the TAKS test in the 2010-2011 school year? In an effort to address the initial question, Research Hypothesis<sup>01</sup> was postulated. The hypothesis conjectured that when isolating Chapter 41 school districts, no significant relationship would be found between student performance on the TAKS test and professional development spending.

Research Question 2 posited what relationship exists between the district level professional development expenditures based on the preceding 3-year average and overall levels of student achievement of K-12 public school districts that are classified as Chapter 41, property wealthy, in Texas as measured by the TAKS test in the 2010-2011 school year? In an effort to solve the second question, Research Hypothesis<sup>02</sup> was postulated. The hypothesis conjectured that when isolating Chapter 42 school districts, no significant relationship would be found between student performance on the TAKS test and professional development spending.



## Conclusion and Implications of the Study

The purpose of this study was not to determine how professional development expenditures should be allocated, but to determine if a relationship existed between those allocations and student achievement within Chapter 41 and Chapter 42 designated school districts. This statewide analysis revealed that there is no significant relationship between professional development expenditures and student achievement in Texas public school districts, whether those school districts are designated as Chapter 41 or Chapter 42. The findings of this study suggest that further research is necessary to ascertain specific funding areas that directly yield higher student achievement. This study has extended the research on student achievement, professional development, and resource allocations. Marzano, et al. (2011) identified professional development activities that yield a measurable return on student achievement. While there is growing research to support a positive relationship between school expenditures and student achievement, there is little that identifies a relationship exists between professional development expenditures and student achievement (Guskey, 2011). The findings of this study support the conjectures of some researchers who have cautioned the validity of education professional development expenditure studies because of differences in funding sources, accounting practices, and multiple departmental professional development programs (Chambers, Lam, & Mahitvichcha, 2009). The state of Texas has attempted to create an accountability system, Public Education Information Management System (PEIMS), which more precisely tracks expenditures (TEA, 2007). However, based on the small expenditure percentages reported by districts, it appears that inconsistency in reporting still exists. This study did not conclude that professional development expenditures do not impact student achievement; it only revealed that a relationship could not be determined within the parameters of the analysis. Legislative and educational decision makers have persisted in finding ways to ensure today's students possess the knowledge and skills they need to compete in a global society that promises to be increasingly interconnected with declining funds (Moak, Casey & Associates, 2011). The legislature of the state of Texas determined to classify and fund schools based on property wealth in an effort to ensure equitable and adequate funding (Benson & Marks, 2005). Fiduciary efficiency quickly became the most challenging issue faced by educational decision makers (Odden & Picus, 2008). The implications of this study have the possibility to assist policy makers and educational leaders in discovering which educational resource allocation categories yield the highest return on investment when considering student achievement. Additionally, this study provides a glimpse as to whether designating districts as Chapter 41 or Chapter 42 provides the balance the funding system desired. This aspect of the study adds to the ongoing conversations about wealth equalization among Texas public schools and the corresponding impact on student achievement. Since this study does not allow the researcher to draw definitive conclusions about the impact of professional development spending on student achievement, the researcher cautions generalizations made from analysis of this study, as numerous variables must be considered and analyzed. It is concluded that a weak relationship existed between Chapter 41 school district professional development expenditures and student achievement. Lastly, it concluded that no relationship existed between Chapter 42 school district professional development spending and student achievement.

## References

- Benson, E., & Marks, B. (2005). Robin Hood and Texas school district borrowing costs [Entire issue]. *Public Budgeting & Finance*, 25(2), 84-105.
- Burtless, G. (1996). *Does money matter? The effect of school resources on student achievement and adult success*. Washington, DC: Brookings Institution Press.
- Chambers, J., Lam, I., & Mahitvichcha, K. (2008). Examining context and challenges of measuring investment in professional development: A case study of six districts in

- the southwest region (Issues & Answers Report, REL 2008-No. 037). Washington, DC: Department of Education, National Center for Education Evaluation and Regional Assistance, Regional Education Laboratory Southwest. Retrieved from <http://ies.ed.gov/ncee/edlabs>
- Davis, B., Dawn-Fisher, L., McKenzie, A., Rainey, N., & Wall, K. (2012, Fall). School finance101: Funding of Texas public schools (Manual). Texas Education Agency. Retrieved from [http://www.tea.state.tx.us/index4.aspx?id=7022&menu\\_id=645&menu\\_id2=789](http://www.tea.state.tx.us/index4.aspx?id=7022&menu_id=645&menu_id2=789)
- Greenwald, R., Hedges, L.V., & Laine, R. (1996). *Interpreting research on school resources and student achievement. Review of Educational Research, 66(3), 411-416.*
- Guskey, T. (2011, November 1). *Differentiating instruction with mastery learning. Austin, TX: Texas Association of Supervision and Curriculum Development.*
- Hanushek, E.A. (1994). Money might matter somewhere: A response to Hedges, Laine and Greenwald. *Educational Researcher, 23(4), 5-8.*
- Hartman, W. T. (1999). Education funding disparities: What do the dollars buy? *Journal of Education Finance, 24(3), 389-408.*
- Hedges, L. V., Laine, R. D., & Greenwald, R. (1994). Money does matter somewhere: A reply to Hanushek. *Educational Researcher, 23(4), 9-10.*
- Jones, T. B., Bingham, W. D., & Jackson, S. H. (2007). *Will the sixty-five percent instructional expenditure rule improve student achievement in Texas?* Manuscript submitted for publication.
- Jones, T. B., & Slate, J. R. (2010a). *Instructional expenditures and accountability ratings: A multi-year statewide study.* Manuscript submitted for publication.
- Jones, T. B., & Slate, J. R. (2010b). *The 65% instructional expenditure ratio and student achievement: does money matter?* Unpublished manuscript, Sam Houston State University, Sam Houston State University, Huntsville, TX.
- Marzano, R. J., Frontier, T., & Livingston, D. (2011). *Effective supervision: Supporting the art and science of teaching.* Alexandria, VA: Association for Supervision and Curriculum Development.
- Moak, Casey, & Associates. (2011, February). *Tracking the education dollar in Texas public schools* (White Paper). Author. Retrieved from <http://www.moakcasey.com/search/default.aspx?search=tracking%20the%20education%20dollar>
- Mouza, C. (2007). The impact of professional development on teacher learning, practice and leadership skills: a study on the integration of technology in the teaching of writing.
- Odden, A. R., & Picus, L. O. (2008). *School finance: A policy perspective* (4th ed.). New York: McGraw-Hill.
- Parry, S. B. (1996). Measuring training's ROI. *Training & Development, 50(5), 72-75.*
- Perry, R. (2005, August 22). *Executive order number RP47.* State of Texas. Retrieved August 13, 2012, From <http://www.governor.state.tx.us/divisions/press/exorders/rp47>
- Picus, L. O. (2004). School finance adequacy: implications for school principals. *National Association of Secondary School Principals. NASSP Bulletin, 88(640), 3-11.*
- Texas Association of School Boards. (2010). *Chapter 19: financial accountability* (Policy Brief). Author. Retrieved from [www.tasb.org/.../sch\\_first\\_and\\_finan\\_solveny\\_rev\\_process.pdf](http://www.tasb.org/.../sch_first_and_finan_solveny_rev_process.pdf)
- Texas Education Agency. (2007). *Texas Accounting Code* (Data File). Texas Education Agency. Retrieved from <http://www.tea.state.tx.us/>