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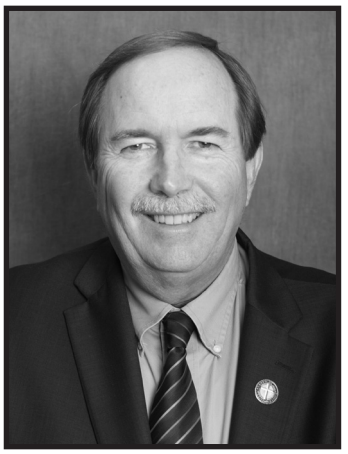
GREETINGS FROM THE DEAN

Neil Dugger, Ed.D.



Greetings,

Thank you for reading the first edition of the DBU Journal for K-12 Educational Leadership, sponsored by DBU's Center for K-12 Educational Leadership! It is our prayer that this journal will be of great service to the practitioners in the field of K-12 education, answering many of the questions you may have in education. These articles are selected from the many outstanding treatises (dissertations) completed in the past year at Dallas Baptist University's College of Education. This will become an annual publication and will be provided free of charge to our K-12 educational partners.

The Doctorate of Education in Educational Leadership K-12 program was established to provide a practitioner's degree that would contribute to educational research. We now have over 130 doctoral students in thirteen cohorts and sixty graduates of the program. Our students are in leadership positions all over north Texas—and beyond—in our traditional public schools, public charter schools, and private schools. While their training is to provide skills in servant leadership and make an impact on students in their schools, another goal is to generate research to identify what truly works in our schools.

Dallas Baptist University is an institution of higher education that serves over 5,000 students, with almost 1,000 identified as K-12 educators seeking a bachelor's, master's, or doctoral degree. In 2016, the National Council on Teacher Quality rated DBU's elementary teacher preparation program in the top 1% of all programs in the United States! Our master's programs serve future administrators, counselors, curriculum directors, special education educators, reading/ESL/bilingual educators, and teachers—usually in a scholarship-aided cohort in their home district. The doctoral program focuses on developing servant leaders. Highlights of each level of programs can be found in this publication.

Thank you for your service as a K-12 educator, and a special thanks for being a great partner with Dallas Baptist University. You have a difficult job, but you produce outstanding graduates who make wonderful contributions to our American society. As we continue to partner with you in this mission, please do not hesitate to contact us if we can be of service.

Wishing you many blessings!

Dr. Neil Dugger
Dean, College of Education
Director, Ed.D. in Educational Leadership K-12

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A WORD FROM THE EDITOR

Sharon Lee, Ph.D.

Dallas Baptist University is proud to present the inaugural issue of the Journal for K-12 Educational Leadership. In this issue, you will read articles written by a selection of graduates of the Doctorate in Educational Leadership K-12. These outstanding school leaders were members of the first two cohorts of students in the DBU Ed.D. K-12 program who graduated in 2015. They conducted research in their home districts on topics that had local interest and local impact. Our degree is based on the premise that school districts have questions that require local answers as well as research problems that need immediate and site-based solutions. While much of the research traditionally available to educators provides a plethora of philosophies and theories about teaching and learning, those theories may not always be easily transferrable to the issues that concern schools in the north Texas region.

In our program, the treatise is the final research project of a four-year program. Just like other doctoral dissertations, the treatise is a five-chapter research report that reviews the existing research literature on a topic, presents an important research problem, and poses research questions with accompanying data on the topic. Based on the servant leader model of DBU, students are directed to bring answers to their districts that could empower learners and teachers alike. What follows in this journal are condensed versions of the complete treatises that were prepared with area administrators and school leaders in mind. (The complete versions of these treatises are available at DBU and through traditional dissertation searches.) Each of our doctoral graduates has also provided an email address for communication purposes. These leaders have a lot more to say on the topics of their research than could be included in these abbreviated journal articles.

Many of the articles focus on instructional topics such as 1:1 technology integration, project-based learning, instructional coaching, and behavior intervention supports. Several articles discuss aspects of English language learning and bilingual/dual language issues that are so important in the North Texas region. Other articles have a state-wide impact and address gifted education, school engagement, and music administration.

All contributors represented in this issue grew as researchers and as educational leaders through their studies in our doctoral program. At the present time, we are pleased to report that over 80% of our graduates have been promoted or advanced as a result of the doctoral degree. Their sphere of influence as leaders and researchers is far-reaching, and we are proud to present their research for others to review. Their servant leadership development makes them outstanding leaders in many districts in this region, and they can now share their insights with other educational leaders. Every article has the potential to make an impact on a broad range of issues in a variety of classrooms, and it is our hope that the research results will make a difference for the children who are educated in the North Texas region, the state of Texas, and beyond.

Dr. Sharon Lee
Director of Research in K-12 Education
Editor, *Journal for K-12 Educational Leadership*

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EDUCATIONAL IMPACT OF BRING YOUR OWN DEVICE PROGRAMS IN 1:1 SCHOOLS

Eric Creeger, Ed.D.

Introduction

For years, giving every student a laptop was seen as the holy grail of educational technology, a strategy that would leverage computers to allow for a much higher level of student achievement, increased problem-solving skills, and, of course, high standardized test scores. As technology has evolved, the multitude of options available—from full scale desktops and laptops to more limited netbooks, tablets, and mobile devices—has made choosing appropriate devices a challenging proposition for school leaders. We have now reached the point where many argue that students and their families can provide their own internet access and technology devices, removing schools from the burden of choosing, purchasing, and maintaining said equipment, but too often the information available for making the best educational decisions has lagged behind the tools available, forcing school leaders to decide by logistical factors such as cost and availability rather than by measuring the impact specific devices may have on student learning.

Literature Review

Deciding between a school issued 1:1 technology program and a program that allows students to bring their own devices to school is complicated, involving a variety of fiscal, political, and curricular factors. Most studies on the impact of technology on learning have focused on one delivery model or the other and have not made direct comparisons within the same population. Measuring the educational impact of school provided netbooks and tablets against the use of personal technology inside a district that has been issuing computing devices to every student provides better data and allows the district to make sound educational decisions for their students.

In response to the funding and support challenges of technology programs featuring full scale laptops, many schools are moving to lighter, cheaper, "netbook" devices. Netbook is a term used to refer to a type of laptop that runs off a solid state drive rather than a traditional spinning hard disk and generally uses a combination of applications, web tools, and software installed on the computer to perform tasks. Netbooks are smaller, lighter, and cheaper than laptops, but do not have as much computing power and are not as versatile (Alien, 2012). Currently, the most popular netbook in educational environments is the Google Chromebook (Herold, 2014). Proponents of the move from laptops to netbooks tend to cite cost, instructional opportunities, and limited administrative burdens as their primary reasons for making the shift. Among commonly cited disadvantages of netbooks are their inability to run popular business software like Microsoft Office and the perception that since the devices are smaller and cheaper than laptops, they are flimsy and will not hold up in a high usage school setting.

The expansion of school issued laptop programs has slowed over recent years and may have reached a plateau (Harris, 2011) making way for a move to mobile devices as the best way for many schools to incorporate technology into their curriculum. When Apple rolled out the Ipad in 2010, it suggested the idea that education's traditional, bulky, expensive textbooks would soon be digitized in a

small tablet promising flexibility and instant access to current information and instructional content. Many schools searching for a 1:1 option began adopting the platform, making IOS devices like Ipads among the most popular devices in the educational market. Although Microsoft Windows devices such as traditional laptops remain the overall leader in the fragmented educational technology market, in the third quarter of 2014, Apple's IOS laptops and Ipads allowed it to retain a small lead on Google's Chromebook netbooks with a 31% market share compared to Google's 27% (Luckerson, 2014).

Some of the concerns with tablet devices include limitations on their abilities, the long term cost due to the need to purchase new apps constantly, rapid obsolescence, and incompatibility with many existing educational products. Additionally, many educators argue that while tablets do many things well, the lack of an integrated keyboard and limited options for expansion of memory and accessories means that they will never be standalone devices and will always work best as a complement to traditional computers or even laptops (Barrett, 2012).

School districts across the country are beginning to allow students to bring their own personal computing devices to school, a policy that was formerly the province of exclusive private institutions with the wherewithal to require computers of all of their students as a condition of enrollment. These programs are often referred to as BYOD for Bring Your Own Device policies. Mobile technologies as used in BYOD programs are defined in many ways. One study defined mobile technologies as "hand-held devices (smartphones, cell phones, PDAs, MP3 players, pocket PCs, tablet PCs, and other hand-held devices) that can create, transfer, or display information via the Internet or other means" (Nelson, 2012, p. 13). The key distinction in defining a BYOD program, though, is not necessarily in the type of device used, but rather in the private ownership of the device.

Many schools cite fiscal constraints as the primary reason for implementing a BYOD policy instead of a 1:1 policy. In this age of ever tightening budgets, providing funding for educational technology is a huge challenge. As educational budgets are tightened, the rapidly shifting technology landscape works the other way and makes specific devices smaller, cheaper, and more affordable for individuals and families. This proliferation of smart phone, tablet technology, and smaller, cheaper, netbook devices has made shifting the burden of providing personal computing devices from the government to the average family feasible for the first time (NPD Group, 2014).

The shift that many schools are making from school sponsored laptop programs, netbooks, or tablets to a BYOD model raises many questions regarding the effectiveness of the various models. Perhaps the most interesting aspects of a change to BYOD policies are in the impact on student achievement that occurs when students are given the option to provide their own technology instead of doing without or relying upon school issued equipment.

The Study

The study's purpose was to measure the educational impact of school provided laptops and tablets against the use of personal technology inside a school that had been issuing a variety of computing devices to every student. To accomplish this, the researcher utilized the results of a district generated technology questionnaire to classify students into groups based on their preferred technology platform: school issued netbooks or tablets; or the student's personal device. Achievement results were then measured using scale scores from the State of Texas Assessments of Academic Readiness (STAAR) tests. The groups were compared using a series of ANOVA tests to determine if their results were significantly different and, when appropriate, post hoc tests were run to determine which technology delivery system produced the highest STAAR results and what the effect sizes were.

Results, Findings, and Implications

In the current study, the researcher focused on one middle school in a large, urban North Texas school district that has issued computing devices to high school students since 2002. Using technology in instruction was a primary goal of the district school board and central administration and all teachers received extensive training in digital pedagogies. The specific middle school se-

lected for the study had provided laptops and tablets to students at a 1:1 ratio from 2011-2014. Additionally, the school had been piloting policies that allowed students to bring their own devices to school for instructional purposes since 2013.

In the Spring of 2014, students in the selected middle school completed a district questionnaire designed to assess technology usage and to gather student feedback for technology purchases. As a part of this survey, students were asked to choose which device they preferred to use to access the class curriculum during the 2013-14 school year. Students chose either *school Ipad, school netbook, or my personal device*. Also in the spring semester of 2014, the students took the STAAR, tests that cover the Texas Essential Knowledge and Skills (TEKS) objectives for various subjects. Students were tested in sixth grade math and reading; seventh grade math, reading, and writing; and eighth grade math, reading, science, and social studies.

The data collected from the survey and the state tests were analyzed in a quantitative research, group comparison design. For each test, the study asked if there was a difference in student achievement levels, as measured by the STAAR test, between sixth grade math students who used school issued netbooks, school issued tablets, or their own personal mobile devices to access the school curriculum. In these questions, the independent variable was the type of device the student used as the primary means of accessing the content; a personal device or the school issued laptop or tablet. In this design, the dependent variable was the actual achievement result on the state tests. Because the type of technology used was determined by student choice and was outside the control of the researcher, the study can be classified as a causal comparative design. Since there were three independent groups for each test (6th, 7th, and 8th grade), the scores were compared using a series of one-way-between-subjects analysis of variance (ANOVA), with the assistance of SPSS software. All hypotheses were tested using the same procedure and the same alpha level ($p < .05$). After each ANOVA run, the researcher determined whether a significant difference between the means existed and, when necessary, used a Tukey post hoc test to explore how the groups differed. Results and effect sizes are listed in Table 1.

(See Table 1 on page 10.)

Implications

Despite the challenges in generalizing the results of this type of study, there is some useful information that can be extracted from the results. In this study, the data reflected that there were small differences in four of the nine tested areas indicating school issued netbooks allowed students to score better than using school issued Ipads or their own personal technology devices. There was one area, seventh grade writing, where netbooks had an advantage over students' personal devices, but in this test, no statistical difference over school provided Ipads was indicated. Since none of the tests indicated an overall advantage for students using school issued tablet devices, these findings confirmed the belief of many educators that school wide tablet programs are not the best model for improving achievement (Barrett, 2012; Herold, 2014). The study results also demonstrated that in the five tested areas where the null hypothesis was rejected, bring your own device programs do not, by themselves, make a positive difference when compared to school issued netbook or tablet programs.

The results of this study do provide some limited statistical evidence that the choice of technology model made a significant impact on student achievement. In four of the nine tested areas, students who used school provided netbooks scored slightly better on standardized tests than those who used school provided tablets and, in five of the nine tested areas, those same netbook students did better than students who preferred to use their own personal technology. There were no tests performed that indicated that students using school provided tablets or their own personal devices scored higher on state achievement tests. In each case, though, the effect size was small, suggesting other factors had a larger impact on student achievement.

Although the netbook students scored marginally higher on state achievement tests, these results imply BYOD programs and policies that are being implemented, largely for financial reasons (O'Donovan, 2009), can continue without a dramatic negative impact on student achievement. Since the results of this study show such small differences in a school that is piloting bring your own device policies in an

Table 1

RQ	STAAR Test	Results	Effect Size
	6th grade		
1	Math	No significant differences	N/A
2	Reading	No significant differences	N/A
	7th grade		
3	Math	Students using netbooks scored higher than those who used tablets and personal devices.	Small .045
4	Reading	Students using netbooks scored higher than those who used tablets and personal devices.	Small .03
5	Writing	Students using netbooks scored higher than those using personal devices. There was no significant difference between those who used netbooks and tablets.	Small .03
	8th grade		
6	Math	No significant differences.	N/A
7	Reading	Students using netbooks scored higher than those who used tablets and personal devices.	Small .039
8	Science	No significant differences.	N/A
9	Social Studies	Students using netbooks scored higher than those who used tablets and personal devices.	Small .052

experimental manner, it is easy to argue the costs savings of a BYOD program would allow for investment in professional development to increase instructional efficacy and lead to net gains in achievement at a lower total cost.

In terms of contribution to the research on technology integration, the question of whether the various laptop and tablet programs or Bring Your Own Device policies influence student achievement remains somewhat open. In this study, the students who used school provided netbooks tended to do marginally better, but the most positive conclusion that can be asserted is that the BYOD policies in the first year of their implementation at the selected middle school did little harm to student achievement levels.

While there were limitations and limited opportunity to generalize the information from the study, the data in its entirety is valuable information for making instructional deci-

sions and recommendations for further inquiry in the school and district where the study was conducted. It is clear that, while school issued tablets do not hinder student learning, they do not provide an advantage in any area. In practical terms, this places them behind the more cost efficient options of a proven netbook program and behind BYOD policies that are potentially even cheaper and more effective and suggests that today's schools are best served by "device agnostic" policies (Johnson, 2014) that permit students to switch back and forth between a variety of technological tools.

Conclusion

The current research study used data comparing the state achievement test results of students who used netbooks, tablets, and their own personal devices, a comparison not made in many of the other technology studies that are available. The data in this study shows a minor statistical advantage for a netbook model in the school under consideration, but very little practical difference in the results for students who are using their own personal devices. Schools, then, should continue to provide every student with technology access by whatever means necessary, whether that is a systemic 1:1 program, through policies that encourage families to provide their own devices, or some combination of the two.

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About the Author

Dr. Eric Creeger currently serves as Senior Lecturer and Program Coordinator for Educational Leadership at the University of North Texas–Dallas. Previous positions held include consultant for the American Alliance for Innovative Systems, instructional technology specialist, and campus level administrator. He holds a bachelor's degree from the University of Dallas, a master's degree from the University of North Texas, and a Doctor of Education in Educational Leadership K-12 from Dallas Baptist University. He can be reached at Eric.Creeger@UNTDallas.edu.

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AN INTERVIEW STUDY OF INSTRUCTIONAL COACHES' AND TEACHERS' EXPERIENCES WITH AN ELEMENTARY INSTRUCTIONAL COACHING PROGRAM

Mindy K. Tolbert, Ed.D.

The face of education across the nation is changing and accountability for increasing student achievement is in the forefront of the minds of today's educators (Darling-Hammond, 2000; Morgan, 2011; Wenglisky, 2000). Elevated demands from federal and state legislation and accountability for academic progress of students have produced an urgent need for sustained, consistent, and job-embedded professional development for classroom teachers (Strawn, Fox, & Duck, 2008). With this in mind, schools across the nation are searching for targeted professional development options for educators that include opportunities for teachers to share what they know, dialogue about what they desire to learn, and opportunities to connect new learning in their own contexts (Darling-Hammond & McLaughlin, 1995).

Professional Learning Communities (PLCs), which provide ongoing discussion and staff support about real life situations, are one way to sustain learning gleaned during professional development experiences (DuFour, DuFour, Eaker & Many, 2010). PLCs are a widely used means for providing educators with targeted learning, opportunities for collaboration, and professional reflection (DuFour et al., 2010; Wiggins & McTighe, 2006). The professional learning community model entails staff focusing on learning rather than teaching, working collaboratively, and practicing mutual accountability to fuel continual improvement (DuFour, 2004). Additionally, PLCs promote change that occurs over time to increase student outcomes (DuFour et al., 2010).

In tandem with PLCs, instructional coaching has also emerged as a promising approach and solution to implementing targeted professional development (Knight, 2009). An instructional coach (IC) offers campus based, job-embedded professional development on an ongoing basis through support and encouragement of teachers by improving teaching strategies, promoting teacher reflection, and focusing on desired outcomes (Knight, 2009). According to Knight (2009), it is the full time, ongoing, job embedded nature of instructional coaching that extends the potential to dramatically improve classroom instruction and student learning. At its most effective, coaching assists teachers in making informed decisions regarding classroom practice and can boost the learning and teaching process when it is embedded in a sustained and comprehensible district-wide professional development plan (Knight, 2007; Neufeld & Roper, 2003).

Purpose of the Study

The study was developed as qualitative, action research to explore the experiences of both elementary instructional coaches and elementary teachers in regards to an elementary instructional coach program in a large suburban district in North Texas. Analysis of information obtained from one-on-one interviews with elementary instructional coaches and elementary teachers as well as an examination of the environment for elementary instructional coaching in the district of study, henceforth referred to as the District, was utilized to deepen the understanding of how an instructional coach program was functioning in the K-5 elementary setting. Guiding questions and sub-questions addressed were:

1. How do elementary instructional coaches describe their experiences working with elementary teachers?
    a. What activities do elementary instructional coaches engage in as part of an instructional coaching program?
    b. How do elementary instructional coaches perceive instructional coaching as a professional development model?
2. How do elementary teachers describe their experiences working with elementary instructional coaches?
    a. What activities do elementary teachers engage in with an elementary instructional coach?
    b. How do elementary teachers perceive instructional coaching as a professional development model?

Procedures and Data Analysis

The study concentrated on participants' experiences and perceptions in response to open-ended interview questions involving a purposeful sample of 15 elementary teachers and 15 elementary instructional coaches. All instructional coach and teacher interview data was transcribed and an analysis of each interview content was conducted. This analysis included coding and examining emerging themes and patterns based on a QSR NVivo 10 analysis.

Additional data collected and included in the study involved a review of existing District documents related to elementary instructional coaching, including the District Elementary Instructional Coaching Program (EICP) Handbook. Findings in the study were increased in accuracy by interviewing participants one-on-one and triangulating data through accurate record keeping, member checks, and an expert panel review of the identified themes.

Identified Themes

As a part of the data analysis, a number of themes emerged throughout the interviews with instructional coaches and teachers. The major themes and coordinating sub-themes identified included: (1) collaboration, including collaborative planning; (2) professional development; (3) relationship building including offering support and trust; and (4) curriculum, including serving as an instructional resource.

Collaboration

Elementary instructional coach participants and elementary teacher participants reported substantial amounts of collaboration in their interactions. Collaboration efforts consisted of collaborative planning, coaching cycles, partnering together, and collaboration on instructional strategies in the classroom. All 30 participants in the study specifically set forth that they collaborated together for planning purposes.

Professional Development

Instructional coach participants in the current study engaged in various professional development experiences as a part of their coaching training and ongoing development. Professional learning experiences were often guided by training and professional development provided by the District as a part of the elementary instructional coaching program.

Instructional coaches also reported facilitating professional development, both job-embedded and workshop style experiences, on their campuses for teachers. Both instructional coaches and teachers repeatedly mentioned instructional coaching as a form of job-embedded professional development and all 30 participants had an overall approval for the elementary instructional coaching program in the District as a professional development model.

Relationship Building

Elementary instructional coaches and elementary teachers both reported that relationship building was an important component of the instructional coaching program and it was valued by all 30 participants in the study. Elements of relationship building mentioned as a part of the interviews included not only working together to establish relationships to support continued growth, but also the importance of sustaining relationships over time. Establishing trust was also an element of relationships that frequently appeared in the interviews by both the instructional coach and teacher participants.

Curriculum

In each of the 30 interviews, there was a belief in and strong

commitment by both elementary instructional coaches and elementary teachers toward the work of education. All 15 elementary instructional coaches and all 15 elementary teachers believed in implementing curriculum with fidelity so that student achievement was positively impacted. References to curriculum by both instructional coaches and teachers participants in the study involved knowledge and implementation of the District curriculum and curriculum writing. Statements referencing curriculum also acknowledged professional development and training regarding elements of the District curriculum and state standards.

Summary of Findings

The study and findings were limited to one large, suburban school district in North Texas, referred to as the District, and were based on two guiding questions, previously presented. Prior to the date of the study, there had been a lack of clarity in the District on whether elementary instructional coaches' roles and practices on individual elementary campuses aligned with District expectations. Data had also not been collected in the District to determine if elementary instructional coaches felt adequately trained to facilitate the expectations of instructional coaches set forth by the District or if elementary teachers supported the use of instructional coaching as a form of professional development in the District. Based upon the findings of the study, determinations can be made regarding these concerns.

Findings of the study established that the practices of elementary instructional coaches in the District do align with expectations set by District leaders for the elementary instructional coaching program. While information gathered from study participants indicated that there was much role confusion and variation in instructional coach practice during the initial implementation of the program, data revealed that there is now much more clarity in practice. All elementary instructional coach and elementary teacher participants reported that District expectations and elementary instructional coach actions now matched.

Findings of the study also indicated that the elementary instructional coaches have had extensive training in both curriculum and coaching areas. The elementary instructional coach participants all felt they were adequately prepared for their coaching role. The elementary teacher participants also revealed they felt elementary instructional coaches in the District had received proper professional development to facilitate their roles.

A final finding of the study indicated that elementary teachers found value in the elementary instructional coaching program. Elementary teacher participants expressed they supported the use of elementary instructional coaches in the District. Elementary teachers felt the elementary instructional coaching program was an effective form of job-embedded professional development.

Generalizations

The current study used a qualitative, interview design, was completed in one school district setting, and was considered action research. Despite the difficulty in generalizing this form of research, there is some useful information that the current study can provide. The themes and subcategories that emerged from the interviews of elementary instructional coaches and elementary teachers clearly illustrated that the support of an instructional coach was appreciated by educators when instructional coaching involved planning, teaching, reflecting, and sharing instructional practices. Also, teachers respected the role of the instructional coach when trust had been established and valued instructional coach activities that provided support to classroom practice, collaborative campus culture, and reflective practice. When the aforementioned characteristics and practices were in place, teachers were more likely to initiate change in their own practice. This confirmed the belief and findings of other research studies that report educators who received coaching are more likely to implement the desired teaching practices and apply them more appropriately than are teachers who participate in district-directed traditional professional development workshops (Guskey & Yoon, 2009; Joyce & Showers, 2002; Knight, 2007; Shidler, 2009).

Implications

Although there were limitations for generalizability because of the action research nature of the study, the implications for the research findings in the study are broad. School districts may benefit by an increased understanding of an elementary instructional coaching program which may allow for identifying ways in which instructional coaches are

supported and trained in their roles. Additionally, school districts that strive to provide additional resources and opportunities for both elementary instructional coaches and elementary teachers could use the information garnered by the study to modify or create new opportunities and experiences to assist in the development of instructional coaches in their school system.

Conclusions

While the study has limitations and a reduced ability to generalize the results to a broader population, the study, as well as the findings obtained, provide valuable information for instructional leaders to use in making decisions that affect the elementary instructional coaching program in the District, and potentially to other districts that utilize instructional coaching for job embedded professional development. Based upon the cumulative findings of the study, the District should continue to cultivate and support the use of elementary instructional coaches.

With the face of education across the nation changing and the accountability for increasing student achievement rising, targeted and viable professional development options for educators must occur. Findings of the study, along with literature and prior studies involving instructional coaching, supports the notion that instructional coaching can be a sustainable option for school leaders to provide the much needed job-embedded professional learning.

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OPTIONS FOR EDUCATING THE GIFTED CHILD

Kathryn Pabst Schaeffer, Ed.D.

Introduction to Educating the Gifted

Giftedness, one quality considered pervasive within an individual for a lifetime, is equated with the ability to learn at a fast rate, to master complex ideas, and to reason at a high level of abstraction (Dai & Chen, 2013). The gifted label generally applies when an ability level exceeds that of the average population of peers by two standard intelligence quotient (IQ) deviations (Gagne, 2007). Those who rank two standard deviations (SD) above the mean on an intelligence assessment are likely to become the cognitive elite and to make significant contributions to society (Dai & Chen, 2013).

National and state standards for gifted education offer no guidance regarding the design of appropriate and consistent grouping to best meet the needs of exceptional students. Recently, Texas has added yearly academic gains to their accountability measures for all students, including the gifted. Thus, designing gifted and talented programming to maximize continuous academic growth is, for the first time, essential to Texas school districts' overall accountability ratings.

Texas Education of Gifted and Talented Students

In Texas, school districts identify gifted students using various assessment instruments and design programming to match their specific educational philosophies or their specific financial constraints (Batenburg, 2014). Lack of consistency results in students being inconsistently identified as gifted and talented between school districts within the state of Texas (Batenburg, 2014). Consequently, a student may be identified as gifted in one district but not in another. Even when a student may be identified as gifted and talented in a given district, he or she can be served through a myriad of programming models. Programming and curricular decisions at the district level are further influenced by ethical, social-political, cultural, and pragmatic considerations. In the politicized educational climate, designing and providing educational services to a selected group of students ignites contentious debate.

Gifted Grouping Practices for Academic Growth

Grouping is a foundational academic practice especially when serving high achieving students (Reis, 2004). Purposeful grouping along with curriculum enhancement or differentiation is a best practice for any gifted program. Gifted learners achieve stronger academic outcomes when they have the opportunity to learn with those at their academic level in all academic contents (Reis, 2004). Table 1 depicts the various delivery models currently in use in K-12 schools.

(See Table 1 on page 17.)

Homogeneous Grouping

The philosophy of homogeneous grouping as a program model rests upon the belief that gifted and talented students by virtue of their increased intellectual capacity are significantly dissimilar to other same-age students and, because of that distinction, their cognitive differences and social and emotional needs are unlike those of same-age general education students (Weinbrenner, 1992).

The research on academic outcomes for homogeneous grouping of gifted students is more consistent than the research on heterogeneous grouping of gifted students. Some unequivocal statements supporting homogeneous

Table 1. Delivery Models' Strengths and Weaknesses

Model	Strengths	Weaknesses
Pull-Out Model	Built-in opportunities for peer interaction Focus on in-depth study or new area of learning One instructional plan required	Limited contact time Part-time differentiation of curriculum Lack of integration with regular classroom work
Push-In Model	Integration into the regular classroom Focus on in-depth study or new area of learning Flexibility to group and regroup based on instructional need	Gifted peer interaction limited to same grade level Limited contact time
Cluster Grouping	Full-time opportunity for curriculum differentiation Built-in peer group Flexibility to group and regroup based on instructional need Full-time grouping	Assumes students represent the same level Gifted peer interaction limited to same grade level Multiple instructional plans required
Full time Classes	Ability to deliver comprehensive differentiated curriculum and programs Intellectual peer group interaction Flexibility to group and re-group based on several variables Teachers can focus on talent development Curriculum can be individualized to a high degree	Perceived as more extreme than other forms May not differentiate curriculum sufficiently

Note. Material adapted for table from Van Tassel-Baska (2006).

grouping have come from respected researchers in the field, such as Gagne (2007) who bid "educators to aim as much as possible for full-time grouping of gifted students" (p. 109). Gagne provided this call to arms only after the findings of earlier studies showed greater academic gains occurred with gifted students who were grouped homogeneously.

Full time homogeneous grouping of gifted students has generated academic achievement and growth. Gagne (2007) articulated that:

> It can be generalized from the research that full-time grouping is the only way to create appropriate conditions for an enriched curriculum. It answers a permanent problem with a full-time solution; it facilitates the enrichment of all subject matters in the regular curriculum and it does not require adding a teacher to the school's personnel. (p. 111)

Even the highest achievers in a homogeneously grouped classroom benefit from having to compete with one another (Kulik, 1992). In addition, when gifted high achievers are removed from the classroom environment, general education low achievers benefit from not having to compete with their more able peers (Kulik, 1992). These early findings still remain relevant and mitigate the concern that low-achieving students are harmed academically when grouped with their academic peers (Brulles, Saunders, & Cohen, 2010). Swiatek (2001) showed that gifted students in like-ability classrooms had larger academic gains in a year than students who had classmates of varied academic ability. Goldring's (1990) and Swiatek's (2001) findings supported the conclusion that gifted students in like-ability classrooms achieve statistically significantly higher scores on state assessments than their gifted counterparts in heterogeneous cluster-

grouped classrooms.

Rogers (2007) conducted a meta-analysis which supported homogeneous grouping for ensuring the academic growth of gifted students. Rogers (2007) also reviewed 13 research studies on homogeneous grouping and concluded that gifted students grouped among intellectual peers "produced marked academic achievement gains as well as moderate increases in attitude toward academic subjects" (p. 9). The researchers in Rogers' (2007) review cited these benefits of homogeneous grouping of gifted students: academic achievement improved (Gentry, 1999); students having a more realistic perception of their academic strengths and weaknesses and increased academic challenge that was more consistent in the classroom (Kulik 2003, Rogers, 2007); teachers had the ability to meet the emotional and social needs of gifted students (Kulik 2003, Rogers, 2007); and teachers were better able to address cognitive demands when the range of student abilities was narrower (Rogers, 2007). In conclusion, homogeneous grouping removes the ceiling for gifted students and diminishes underachievement over time (Gentry & Mann, 2008). By grouping more homogeneously, the "façade of effort and ability can be removed and replaced with more appropriate challenge and rigor" (Gentry & Mann, 2008, p. 15).

Heterogeneous Grouping

The inclusion model, imported from special education, has spawned the impetus for heterogeneous grouping. Kulik's (1992) seminal study of grouping asserted that the "damage to gifted students would be truly great if, in the name of de-tracking, schools eliminated enriched and accelerated classes" (p. 73). Heterogeneous grouping appeases cultural and socio-political ends, but the overall impact to gifted programs is detrimental in the long run (Reis, 2004). Ability grouping and content acceleration "must be attended to in some form in order to ensure that programs are meaningful for this special group of learners" (Reis, 2004, p. 70). The impediments inherent in moving from the theory of cluster grouped heterogeneous classes to the reality of the general education classroom make this model a difficult one to implement and maintain as the model's success lies solely in the hands of an exceptional teacher.

Enrichment instruction: Serving GT Students in Heterogeneous Grouping

Enrichment acts as an express lane for gifted students with an added benefit of increased motivation (Gagne, 2007). Also, by condensing or compacting the regular curriculum, time is created for other learning activities. The amount and level of enrichment or compacting of content should be dependent on the level of giftedness and academic readiness (Gagne, 2007).

Gagne (2007) believed that if the same research survey as Cox, Daniel, and Boston (1985) were conducted at any point in the future, the academic gains for gifted students receiving enrichment in the general education classroom would be similarly categorized as "fragmented and discontinuous" (p. 107).

Proper enrichment activities should be judged from two perspectives. The first is whether they are relevant with respect to the learner's abilities, interests, needs, and personality as well as a learning vehicle to demonstrate maximum academic talent (Gagne, 2007). The enrichment curriculum must be rich cognitively in order to be academically defensible (Gagne, 2007). Especially at the elementary level, learners' needs can be addressed through personalized activities of choice as well as additional time to pursue personal projects (Gagne, 2007).

Enrichment: "How To" for Heterogeneous Classrooms

Enrichment for gifted students in a heterogeneous classroom can be differentiated by content, process, or product (Tomlinson et al., 2006). Differentiating content allows more depth through acceleration. Theoretically, the goal of content differentiation is to remove the learning ceiling and thereby allow highly able students to move through the material at a pace that suits their ability. Content for gifted students can be altered with complexity and abstractness. High ability students can move quickly from acquisition to application and finally to transfer with increased focus on relationships and generalizations (Gentry & Mann, 2008).

Process can be differentiated by shared inquiry, creative problem solving, problem-based learning, and discovery learning (Gentry & Mann, 2008). Because these practices are

seen as highly engaging for all students, criticism remains as to how these approaches are applied any differently for gifted students than for general education students. Gentry and Mann (2008) responded that gifted students' academic products should strongly reflect professional standards which are much higher than grade level standards.

Products that are designed to assess a students' learning can be personalized from a menu of options or be self-created by the students themselves (Gentry & Mann, 2008). Unique products should also offer an assessment of the learning process itself rather than just a final performance task. Products should embed cognitive demand and "stretch students in application of understanding and skill as well as in the pursuit of quality" (Tomlinson et al., 2006). If gifted students need measurably different learning experiences, then the heterogeneous classroom, even with product development, may be insufficient if the cognitive demand is not embedded in the design of the task.

Cluster Grouping with Differentiation in Heterogeneous Classrooms

The differentiated classroom is reminiscent of the one-room schoolhouse where different ages and abilities were a normal part of the classroom experience. Cluster grouping is a type of ability grouping for gifted students within the general education classroom. It is the practice of grouping four to six identified gifted students into a single classroom with a teacher who has received training on differentiation and teaching to gifted students (Walker & Seymour, 2002). Gifted students are clustered into classrooms with a teacher who has been designated as the teacher of record. The cluster grouped classroom also includes non-gifted students. Cluster grouping is cost efficient and also does not disrupt the general education setting. Thus, it has become an attractive model for districts who may not be able to create magnet or homogeneous school-within-a-school models. Cluster grouping represents a model that allows gifted students to receive services on a full time daily basis. Strategies used within the cluster-group classroom for gifted are: acceleration, compacting, enrichment, independent studies, and flexible grouping (Brulles & Winebrenner, 2011). Ongoing assessment invites flexible grouping according to the needs and results of both formative and summative assessments.

Discussion Regarding Effectiveness of Cluster Grouping

Purposeful and intentional differentiation lies at the heart of the cluster-group model. Although cluster grouping for gifted students is widely promoted, varying empirical evidence exists to support its practice for improving academic growth. Because enrichment and differentiation is largely left up to the individual classroom teacher to implement, the difference between ideal and actual effectiveness is recognized. Gentry and MacCougall (2008) found that "curricular differentiation is more efficient and likely to occur when a group of high-achieving students is placed with a teacher who has expertise, training, and a desire to differentiate curriculum than when these students are distributed among many teachers" (p. 12).

The differentiation movement was born of political and monetary necessity and not what research has shown offers gifted students the best opportunity for their largest yearly academic growth. Questions remain about the theory of cluster grouped differentiation for gifted students. Dr. Carol Tomlinson, the originator of the whole school cluster model, discussed the practical problems related to differentiation in an interview with Wu (2013). Wu (2013) concluded the following:

> With the ever expanding needs in the general education classroom, the teacher's job to help each of the students understand that everybody has a next step in learning. When everybody's next step is the same, great. But if the next steps differ for different students, which is typical, then it becomes the teacher's role to create more than one ''next step.'' (p. 130)

In defense of the differentiated cluster grouping model, Dai and Chen (2013) blamed the poor results on weak teacher training and lack of will on the part of the campus or district administration. When reacting to the criticism that differentiation is unrealistic due to the many constraints on the classroom teacher to cover grade level standards for all students, Dai and Chen (2013) stated that the theory of differentiation is not invalidated by poor implementation. However, Dai and Chen (2013) acknowledged that "as the diversity of students in the same classroom escalates, the question of how to meet precocious and advanced learners' unique educational needs through appropriate, personalized education

services in the regular classroom becomes even more salient for educators" (p. 157).

The seminal research of Kulik (1992) used a meta-analysis to examine findings on grouping from research conducted from 1916 to 1992. The author found that academic gains for gifted students were directly influenced by the degree of curricular adjustment and not the form of grouping per se (Kulik, 1992). In other words, grouping in a cluster model is effective if the curricular differentiation is consistent and on-going. If cluster grouping is not led by a curriculum or teacher who differentiates as a matter of practice, then gifted students will not see academic gains (Kulik, 1992). The author's conclusion was that gifted students are able to have their academic needs met through cluster grouping and that such grouping is an "appropriate and necessary function of the school system" (Kulik, 1992, p. 127).

Weinebrenner (1992) promoted the cluster grouping model as a means to diminish the elitist attacks against gifted education in homogeneous classrooms. Theoretically, all students would benefit from the same differentiated instructional model. Years later, Hertberg-Davis (2009) responded to Weinebrenner's research and reported finding a lack of differentiation in heterogeneous classrooms. Hertberg-Davis (2009) concluded that differentiation in the regular classroom in a cluster model is not an effective substitute for homogeneous grouping programming and that current instructional practices fail to meet gifted and talented learners' needs.

Researched Guidelines for Effective Cluster Grouping

While cluster grouping, as a model for serving the gifted, is a practical means to an end, maintaining recommendations from past research are believed to increase the model's effectiveness. First, students should be clustered with their intellectual as well as same-age peers (Bryant, 1987; Delcourt & Evans, 1994; Hoover, Sayler, & Fedlhusen, 1993; McInerney, 1983; Oakes, 1985; Rogers, 1991; Slavin, 1990; Winebrenner, 1992). Secondly, cluster grouping provides for full-time gifted student services without requiring additional programming or staffing (Hoover et al., 1993; Rogers, 1991; Winebrenner, 1992). Third, the highest achieving, or highly gifted students, should be removed from general education classrooms so that other general education students can emerge as intellectual leaders (Kennedy, 1989; Winebrenner, 1992). Fourth, the achievement levels within a single classroom are reduced to offer more differentiation opportunities for students at the upper levels of achievement (Coleman, 1995; Delcourt & Evans, 1994; Rogers, 1993).

Discussion of Recent Trends

"Homogenization of educational experience is advocated primarily as a means to social change; the rush to heterogeneous grouping and cooperative learning for the gifted is probably heavily influenced by these same social and political value systems" (Feldman & Moon, 1992, p. 84). Reis (2004) warned that the social-political demands that have served gifted students in heterogeneous classrooms may have detrimental effects. Cluster grouping may "detract from achieving what is basic to a quality gifted program, namely acceleration and constant ability grouping. Acceleration and grouping are the lightning rod issues that test the level of endorsement that gifted programs enjoy in a local school district" (Reis, 2004, p. 70).

The expanding range of academic readiness in most public schools has exacerbated the ability of teachers to effectively differentiate (Petrilli, 2011). "By the fourth grade, public-school children who score among the top 10 percent of students on the National Assessment of Educational Progress (NAEP) are reading at least six grade levels above those in the bottom 10 percent. Even differences between students at the 25th and at the 75th percentile are huge—academic readiness is separated by at least three grade levels" (Petrilli, 2011, p. 49). De-tracking advocates have claimed the victory in the classroom as cluster grouping and within-classroom differentiation have gained acceptance while homogeneous grouping programs for the gifted have retreated. Meanwhile, in the classroom, the level of support needed by all students, even the gifted, has risen along with the increasing range of academic readiness.

Conclusions

In conclusion, the inherent democratic tension between excellence and equity in the classroom is far from resolved. In the politically charged educational environment, gifted educators have been urged to embrace the inclusive model with

cluster grouping and a reliance on differentiation of both curriculum and instruction. Gifted programming models that previously offered homogeneous grouping through pull-out programs or full-time programs have been criticized as elitist, even though the research results comparing homogeneous and heterogeneous grouping models as best practices for gifted students remain inconclusive.

A growth model for accountability measures performance gains rather than performance against a criterion referenced grade level standard assessment. This measurement ensures that gifted students' learning is as valued as every other student's learning. This performance gains model for accountability may shift the focus back to educating students to their full potential and not simply educating students to reach the same expected measurement of success. Educators' overriding concern for gifted students is their students' ability to be challenged with the opportunity for continuous academic growth.

Resource allocation is to be considered for any educational program. Cluster grouping is considered cost neutral since the enrichment of curriculum occurs within the general education classroom. A homogeneous classroom may require a school district to increase gifted programming funding. The search for one best model for gifted programming may be inconclusive, but the investment in programming will continue to be necessary in order to ensure equity for academic yearly growth for gifted students.

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THE EFFECT OF ENGAGEMENT ON AT-RISK STUDENT ACHIEVEMENT: A CORRELATIONAL INVESTIGATION

Debbie Cano, Ed.D.

Introduction

The destiny of a nation rests upon the shoulders of its children. Educational entities bear the burden of reaching, teaching, and preparing students for a future which not only shapes individuals and families, but cultures and the global society. The dramatic rise of at-risk student populations in Texas and the United States is a collective challenge and of foremost importance. Students who are ill prepared to become productive members of society become burdens upon society. If schools do not authentically and meaningfully engage all learners, the result can contribute to the cumulative liability.

Review of Literature

Schools are not engaging for all students, and students who are at-risk are most negatively affected by this deficiency (Neild, Balfanz, & Herzog, 2007; Reyes, 1997). Student dropout rates, State of Texas Assessments of Academic Readiness (STAAR) achievement scores, attendance rates, and discipline removal incidents provide measurable data demonstrating a continued and expanding crisis in at-risk student achievement, thus indicative of a major educational issue (Nichols, Glass, & Berliner, 2012; President and Fellows of Harvard College, 2000).

According to Busteed (2013), the longer students remain in school, the more disengaged they become. Research conducted by the Gallup organization found student engagement reaches a peak at fifth grade, and begins a steady decline through the middle school years (Busteed, 2013). Results from a 2012 Gallup Student Poll, which "surveyed nearly 500,000 students in grades five through 12 from more than 1,700 public schools in 37 states . . . found that nearly eight in 10 elementary students who participated in the poll are engaged with school" (Busteed, 2013, para. 3). In contrast, the student engagement percentage drops to six out of 10 students during middle school, and to just four out of 10 in high school.

Poverty

The exponential growth of children in Texas living in poverty is a profound concern. "Texas ranks among the worst 15 states for child poverty" (Johnson, 2012, para. 8). Between 2004 and 2012, children living in poverty increased from one of every five children in the state of Texas, to one of every four in a brief eight years (Potter, 2012). In addition, Texas is the second largest state in terms of population and Texas' growth exceeds that of all other states between 2000 and 2010. Sixty-five percent of the increase, or roughly 2.8 million people is attributed to the growth of the Hispanic population (Potter, 2012). The population of Texas is rapidly evolving and the poverty rate is on a parallel trajectory.

Latino student poverty is a unique, multifaceted challenge. According to Aber, Morris, and Raver (2012), "for Latino children, the complex factors of race, language, culture, and immigration status mixes with poverty to create challenges… hopefully our society will address, in the coming years" (p. 2). Childhood poverty is more than a mere subsistence issue, in fact "poverty in childhood, and especially deep poverty in early childhood, is associated with a very broad range of problems in physical-biological, cognitive, academic and social-emotional development" (p. 3).

State Assessment

In Texas, an achievement gap in STAAR math performance is evident in the middle grades (Green, 2014). Students classified as ELL are underperforming, and "results reveal they [lag] 26.2 percent behind non-ESL students. [In addition], economically disadvantaged students also struggle with passing rates [and perform] 20.2 percent behind their peers" (Green, 2014, para. 2-3). Research conducted by Flores, Batalova, and Fix (2012) for the Migration Policy Institute found "the low passing rates of…ELL [students raised] serious concerns [regarding] their chances of remaining in school, graduating, and pursuing postsecondary education" (p. 14). Flores et al. (2012) reported ELL student performance on Texas achievement tests lagged far behind the all student group indicator. In fact, ELL students "had alarmingly low scores in math…[with] a gap in performance on the math exam [of] 22 percentage points in third grade, 31 points in fourth grade, 28 points in fifth grade, [and] 58 points in eighth grade" (p. 15).

Gallup Student Poll

The Gallup organization developed "the Gallup Student Poll [which] tracks the hope, engagement, and wellbeing of students in grades 5 through 12 across the United States" (Gallup, Inc., 2014, p. 1). Data drawn from the Gallup Student Poll (2014) indicated:

> Students who are ready for the future are also hopeful for the future, engaged at school, and thriving in life (i.e., high wellbeing). These students possess high levels of motivation and describe their lives in very positive terms. Furthermore, these students report that the conditions at their school promote involvement and enthusiasm. (p. 1)

Engagement

Christenson et al. (2012) contended behavioral engagement attributes include attentive focus during instruction, acceptance and compliance with expectations and rules, and voluntary participation. Students who are engaged behaviorally are physically involved in the learning environment and demonstrate a willingness to accept and apply understandings. Christenson et al. (2012) claimed students who are involved in school clubs, sports teams, or performance groups display higher levels of behavioral engagement in academic environments, and higher levels of engagement have been found to correlate to student achievement gains.

Research in the neurosciences has recently uncovered the "intricate interactions between the emotional and cognitive brain systems" (Hardiman, 2010, p. 2). Information is first processed through the "brain's limbic system, located just above the brain stem at the base of the brain, [and] is responsible for our emotional responses" (Hardiman, 2010, p. 2). Hardiman (2003) recommends schools and teachers consider the environment in which students interact with new learning, and "maximize strategies that promote positive emotion" in the learning process (p. 2). Stress and "threats impede learning, [but] positive emotional experiences, during which the brain produces certain chemicals or neurotransmitters, can contribute to long-term memory" (Hardiman, 2010, p. 2).

Behavioral, emotional, and cognitive engagement structures interact with and influence achievement. The most vulnerable student, the at-risk child, is particularly impacted by the lack of an engaging and supportive school environment. Educational leaders are faced with a formidable challenge to increase student engagement while simultaneously improving the educational experience and achievement of all student groups.

Results

The current study investigated the relationship between student engagement, as measured by the engagement section of the Gallup Student Poll, and three indicators of campus performance: academic achievement, attendance rate, and the number of behavioral removals.

The correlational investigation was designed to answer the following research questions:

Research Question 1: Does a relationship exist between scores on the engagement indicators of the Gallup Student Poll and the math achievement scores on the State of Texas Assessments of Academic Readiness (STAAR) of middle school campuses?

Research Question 2: Does a relationship exist between scores on the engagement indicators of the Gallup Student Poll and student attendance rates of middle school campuses?

Research Question 3: Does a relationship exist between scores on the engagement indicators of the Gallup Student Poll and the number of behavior removals at middle school campuses?

The current study was conducted in a school district in the Dallas-Fort Worth area, which includes three high schools, seven middle schools, 21 elementary schools, two early childhood centers, an alternative high school, and an advanced technology complex. The enrollment of more than 26,000 students is culturally diverse, composed of approximately 52% White, 32% Hispanic, and 12% African American students, with 43% of students considered to be economically disadvantaged (ED) and 14% English language learners (Texas Education Agency, 2013b).

The unit of study in the current investigation was the school. The six middle schools within the district which participated in the Gallup Student Poll from 2010 through 2013 constituted a convenience sample.

Research Question 1

Research Question 1 addressed the potential relationship between student engagement and mathematics performance. To determine whether a relationship exists between these variables, a correlation analysis was performed using the difference in Gallup Student Poll grand mean scores between the Fall 2010 and the Fall 2013 as the measure of student engagement, and the difference in the percentage of students passing the STAAR mathematics assessment between the Spring 2012 and the Spring 2014 as the measure of mathematics performance.

Scatter plots were generated to visualize the relationship between gains in engagement and math performance for each student group. The plot for the all students group suggests that a linear relationship may exist for five of the six campuses, and one campus may represent an outlier in the data set. Based on this evidence, the correlation analysis was re-run with the apparently aberrant data point removed, which resulted in a statistically significant correlation (r = .974, $t(3)$ = 7.45, p = .003). The results suggest that a true relationship may exist between student engagement and math performance. Figure 1 displays the scatter plot of Gallup Student Poll gains and STAAR math gains for all students.

Research Question 2

Research Question 2 focused on the potential relationship between student engagement and school attendance. A statistically significant relationship between student engagement and attendance was not detected for all students ($t(4)$ = 0.812, p = .462), economically disadvantaged ($t(4)$ = 0.185, p = .862), and LEP ($t(4)$ = 0.020, p = .986) student groups. Since all p-values quantified were reported at greater than .05, the statistical test failed to reject all null hypotheses.

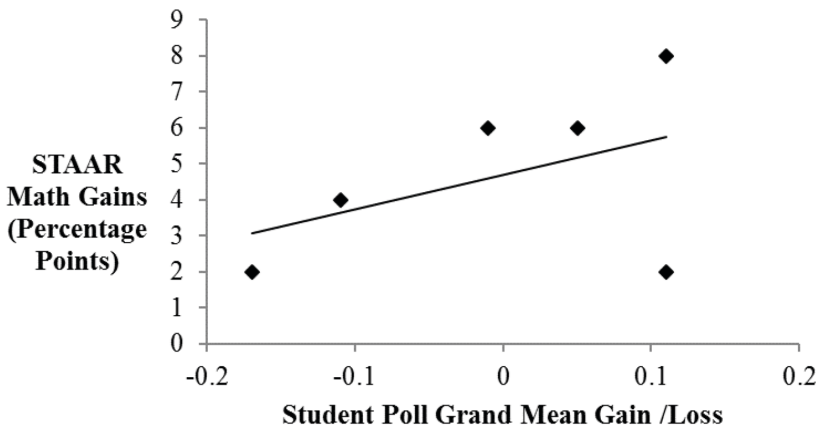

Figure 1. Scatter plot of Gallup Student Poll gains and STAAR math gains for all students.

Research Question 3

Results of correlation analyses related to Research Question 3 indicated a statistically significant relationship appears to exist between student engagement and student behavior, measured either as behavior removals to Disciplinary Alternative Education Program (DAEP) ($t(4) = 8.776$, $p = .001$) or as total behavior incidents ($t(4) = 8.431$, $p = .001$). The p-value for the statistical test was reported as smaller than .05, thus the null hypothesis was rejected. Further, the sign of the Pearson correlation coefficient indicates that the nature of the relationship is negative, that is, as gains in engagement increase, gains in discipline events decrease.

The coefficient of determination (r2) for this relationship is .956, indicating the variance in student engagement explains 95.6% of the variance in discipline removals. Figure 2 shows the scatter plots for the correlation between engagement and discipline.

Findings

With the current study, the research found evidence to suggest a statistically significant relationship appears to exist between student engagement and student behavior, measured either as behavior removals to DAEP ($t(4) = 8.776$, $p = 001$) or as total behavior incidents ($t(4) = 8.431$, $p = 001$). Further, a statistically significant relationship between student engagement and attendance was not detected for the all students ($t(4) = 0.812$, $p = .462$), ED ($t(4) = 0.185$, $\boldsymbol{p} = 862$), or LEP ($t(4) = 0.020$, $p = .986$) student groups. Lastly, a statistically significant correlation ($r = .974$, $t(3) = 7.45$, $p = .003$) suggests a relationship may exist between student engagement and math performance; however, the analysis was based upon an extremely small sample size, thus the results should be considered with caution.

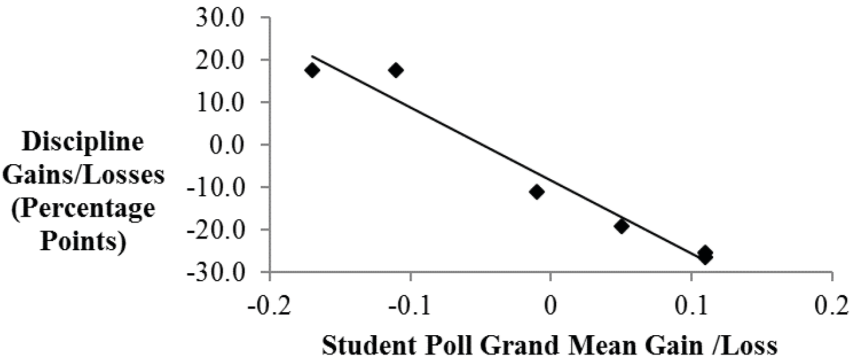

Figure 2. Scatter plot of Gallup Student Poll gains and discipline removal gains for all students as determined from AEIS/TAPR reports.

Implications

Educators and students are faced with ever rising accountability standards required by both the State of Texas and federal mandates. As a result, the unique needs of students at-risk compel educational entities to take decisive action to address discrepancies in performance and achievement. The findings of the current study lead to the following implications with regard to practice:

- Campuses and districts should employ the Gallup Student Poll as a resource for measuring, tracking, and responding to student engagement.
- Gallup Student Poll data should be analyzed annually at the campus and district level to identify strengths and opportunities for improvement.
- Gallup Student Poll data should be made public, and be provided to faculty, students, parents, and the community.
- School districts and campuses should provide ongoing teacher and faculty training in the areas of engagement attributes, engagement strategies, and increasing authentic student engagement.

Student behavior and achievement are influenced by the impact of student engagement. Schools are not engaging

for all students and the cost of disengaging classrooms and campuses is most profound for the at-risk child. Sadly, the longer students remain in school, the more disengaged they become. Educational leaders are faced with a rapidly mounting population of at-risk learners in the state and the nation. Immediate and decisive action is required to address deficits and gaps in performance, and to increase and expand practices which provoke engagement. All students, and most especially at-risk children, should have teachers and school administrators committed to them, who will support and develop their strengths, and will engender excitement about their future. The fate of our society is inextricably connected to learning environments created for children, for those who one day will be expected to lead, to serve, and to contribute.

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SECONDARY TEACHERS' KNOWLEDGE AND ATTITUDES TOWARD ENGLISH LANGUAGE LEARNERS AND THEIR IMPACT ON ACHIEVEMENT

Kevin N. Dixon, Ed.D.

Introduction

In the last several months, it has been difficult to turn on the television or the radio and not see or hear something about immigration, building a wall on our southern border, and/or travel bans. However, as educators in the state of Texas, we cannot afford to allow the politics on these issues to affect how we run our schools. Over the past decade, Hispanic students showed the largest percentage increase in school enrollment in several states, including Texas (Callinan and Ramirez, 2012). In 2011, the United States Department of Education reported that there were 5.5 million students enrolled in K–12 public education who were identified as English Language Learners (ELLs), and ELLs were the fastest growing student subgroup, increasing annually by 10% (Global Institute for Language and Literacy Development, 2011).

Background

All students are guaranteed an appropriate education by law, and ELLs are afforded special protections guaranteed by the Supreme Court. Based on the decision of the 1972 case of *Lau v. Nichols*, ELLs must have equal access to the same opportunities offered to English fluent students. It was mandated that these opportunities be supported by state and local districts through funding, qualified personnel, and research–based educational programs (Global Institute for Language and Literacy Development, 2011; Lau v. Nichols, 1972).

In 2002, twenty years after the Supreme Court decisions, the Reauthorization of the Elementary and Secondary Education Act finally closed the legal gap for ELLs. Within the rewrite, a comprehensive and integrated system of standards, assessments, achievement, and accountability for ELLs was outlined–the same as for every other student in a state. The statute affirmed the responsibility of states to establish standards for raising English language proficiency levels through the four domains of speaking, listening, reading, and writing. For the first time in history, states, districts, and schools were required to provide an equal education to ELLs.

These cases were brought before the courts and the laws were created because students from Mexico and other countries were moving to Texas and other states at increasing rates, enrolling in high schools, but graduating at a much lower rate than English fluent students. Callinan and Ramirez (2012) reported that from 1999 to 2009, "the percentage of Hispanic students increased in the four most populous states (California, New York, Florida, and Texas) as well as the United States as a whole" (p. 44). The report also stated that Texas and California had the largest increase in Hispanic students and lower percentages of white students as compared to the rest of the United States.

Whether it was due to a lack of knowledge of how to educate ELLs or poor teacher attitudes toward ELLs, equal educational opportunities were not provided and achievement gaps between ELLs and English fluent students grew. Minority students and their advocates filed the lawsuits cited above and laws were created to rectify the achievement gap

between ELLs and English fluent students.

More than 40 years after the first Supreme Court case, the achievement gaps still exist. In 2013, ELLs scored 41 percentage points lower in reading and 47 percentage points lower in writing on Texas' state achievement test than their English fluent peers at the high school level (Texas Education Agency, 2014). There are limited-English and non-English speaking students in secondary classrooms who are not learning at desired rates because they do not sufficiently understand academic English. Often, teachers also struggle to understand the language of the ELLs. When students and teachers do not understand one another, effective teaching cannot occur and "experts on…language minority children… agree that effective teaching is critical to student learning" (Calderón, Slavin, & Sánchez, 2011, p. 118). Teacher knowledge about students and teacher attitudes toward students have long been associated with student achievement. Teacher knowledge about second language acquisition (SLA) and a teacher's attitude toward ELLs can affect the achievement of these students.

Research Questions

The over–arching question of the current study was: How well do teachers' knowledge and attitudes about ELLs and SLA predict ELLs' achievement on the STAAR test? Specifically, the current study examined the following four research questions:

Research Question 1 (RQ1) Do teachers' years of experience and hours of ELL professional development predict ELLs' achievement on the STAAR and STAAR EOC tests?

Research Question 2 (RQ2) Do secondary teachers' knowledge about ELLs and SLA, as scored on the *Content-Area Teacher Survey*, predict ELLs' achievement on the STAAR and STAAR EOC tests?

Research Question 3 (RQ3) Do secondary teachers' attitudes about ELLs and SLA, as scored on the *Content-Area Teacher Survey*, predict ELLs' achievement on the STAAR and STAAR EOC tests?

Research Question 4 (RQ4) When taken together, do secondary teachers' knowledge and attitudes about ELLs and SLA, as scored on the *Content–Area Teacher Survey*, predict ELLs' achievement on the STAAR and STAAR EOC tests?

Results & Findings

Hierarchical multiple regression was used to compare teacher survey results with ELLs' state achievement test scores to determine if teacher knowledge and attitudes about ELLs and SLA were statistically significant in predicting student achievement on Texas' state achievement test. Fifty-seven secondary teachers and 58 ELL students participated in the study. Table 1 reveals a mean of 8.8 years and a mean of 14.7 hours for the two covariates, teacher's years of experience and teacher's hours of ELL training, respectively.

(See Table 1 on page 30.)

Table 2 also reveals the mean of the two predictor variables, teacher knowledge and teacher attitudes toward ELLs and SLA. The mean for teacher knowledge was 211.8 and the mean for teacher attitude was 400.9. A high score of 300 with a low score of 60 was possible for each student in teacher knowledge and a high score of 450 with a low score of 90 was possible for each student in teacher attitude.

(See Table 2 on page 31.)

A teacher's years of experience and hours of ELL and SLA professional development, the two covariates or nuisance variables, were entered into the regression equation first to establish a baseline beta-weight. Once the baseline beta-weight was established, teacher's knowledge about ELLs and SLA was entered into the equation to determine its predictive ability, or change in R^2, of ELLs' STAAR scores. Finally, teacher's attitude about ELLs and SLA was entered into the regression equation to determine its predictive ability, or change in R^2, of ELLs' STAAR scores.

When taken individually, teachers' years of experience was a strong predictor of ELLs' STAAR scores, but teachers' hours of ELL professional development was not a strong predictor of ELLs' STAAR scores. However, as model 1 in Table 2 shows, the two covariates, when taken together, have a large effect in practice (Cohen, 1988), accounting for 34% ($R^2 = .340$) of the variance in STAAR scores. An ANOVA was conducted to test whether the regression model, with both covariates included, significantly predicted ELLs' STAAR

Table 1
Descriptive Statistics from Survey Results and STAAR Scores

Variable	N	Mean	Standard Deviation
STAAR	58	4687.4	630.7
Teacher Years of Experience (SPSS–yrsexp)	58	8.8	2.1
Teacher Professional Development (SPSS–trnghours)	58	14.7	4.1
Teacher Knowledge (SPSS–knowledge)	58	211.8	14.3
Teacher Attitudes (SPSS–attitude)	58	401.0	20.2

scores. The ANOVA resulted in a *p*–value of less than .001, and it was concluded that the combination of teachers' years of experience and teachers' hours of ELL professional development was statistically significant in predicting ELLs' STAAR scores.

In model 2, teacher knowledge about ELLs and SLA was added to the covariates in the regression equation. The change in the beta–weight was then calculated to determine if teacher knowledge was statistically significant in predicting ELLs' STAAR scores. The results of the second regression equation determined that the change in R^2 of .205 was statistically significant. The ANOVA using teacher experience, teacher professional development, and teacher knowledge resulted in a *p*–value of less than .001, and it was concluded that model 2 was statistically significant in predicting ELLs' STAAR scores.

In Model 3, teachers' attitude was entered into the regression equation with the three previous variables. The results of the third regression equation determined that the change in R^2 of .001 was not statistically significant. A teachers' attitude about ELLs and SLA was not statistically significant in predicting ELLs' STAAR scores on their own. However, when the ANOVA was conducted for model 3, a *p*–value of less than .001 was obtained and it was concluded that model 3, with all four independent variables included, was statistically significant in predicting ELLs' STAAR scores.

Implications

Teachers' Years of Experience

The first finding of the study was that teachers' years of experience was a strong predictor of ELLs' STAAR scores. However, some of the most experienced secondary teachers surveyed had some of the lowest ELL STAAR scores and two of the least experienced secondary teachers surveyed had two of the highest ELL STAAR scores. Teachers with six to 10 years of experience showed the largest cluster of high performing ELLs. Although years of experience was statistically important, there may be a point where years of teaching experience has less of an impact on the STAAR scores of ELLs.

Campus administrators must be careful not to assume that a teacher is the best teacher for ELLs, or other struggling students, just because he or she has several years of experience. The instruction of ELLs is still a relatively new learning process for some educators, and sometimes older, more experienced teachers may be more resistant to change and/or have less knowledge about ELLs than less experienced teachers. Additionally, the influx of ELLs into our country has caused a change in the curriculum of some college teacher preparation programs. New teachers to the profession are entering the teaching field with more knowledge about educating ELLs than current teachers may have.

Table 2

Hierarchical Multiple Regression Predicting ELL STAAR Scores From Teacher Years of Experience, Teacher Hours of ELL Professional Development, Teacher Knowledge about ELLs and SLA, and Teacher Attitudes About ELLs and SLA

	ELL STAAR Scores					
	Model 1		Model 2		Model 3	
Variable	B	β	B	β	B	β
Constant	6317.552*		1445.372**		1674.758**	
Teacher Experience	–171.716*	–.570	–161.260*	–.535	–159.994*	–.531
Teacher Training	–7.631**	–.050	–71.086*	–.466	–71.649*	–.470
Teacher Knowledge			26.965	.610	27.890*	.631
Teacher Attitude					–1.068**	–.034
R^2	.340		.545		.545	
F	14.172*		21.530*		15.899*	
ΔR^2	.340		.205		.001	
ΔF	14.172*		24.260*		.092**	

Note. N = 58. *p < .05. **p > .05.

Teacher Hours of ELL Professional Development

The second finding of the current study was that teachers' hours of ELL professional development were not significant in predicting ELLs' STAAR scores. The teachers who reported the most hours of ELL professional development had the lowest ELL STAAR scores. Simply sending teachers to ELL professional development trainings or providing on–campus ELL professional development trainings for teachers does not necessarily mean growth in ELL student achievement.

Hammond (2008) and Newman, Samimy, and Romstedt (2010) provide some insight into the possible reason of the insignificance of teacher hours of professional development on ELLs' STAAR scores. Hammond (2008) stated that for teachers to gain the knowledge and confidence, they need to teach SLA techniques in core content areas, they must have access to high quality professional development that recognizes the complex nature of language. In 2010, Newman, et al. (2010) added that high quality professional development must be "continuous…and promote learning communities and collaboration" (p. 154). The two years prior to the completion of the current study, teachers had participated in an average of 14.7 hours of ELL professional development, yet the training was not continuous or consistent. Campus administrators must ensure that teachers receive consistent and on-going ELL professional development so the teachers' knowledge of ELLs and SLA grows and becomes second nature to the teachers and the campus as a whole.

Teacher Knowledge

The statistical significance of teacher knowledge is consistent with Hammond (2008) and Newman, et al. (2010). Both studies concluded that a lack of teacher knowledge affected the teacher's ability to teach students who had difficulties in learning. At the district level, special care should be given to the vertical alignment of professional development K–12. A vision of what ELL education will look like and a common

set of beliefs should be created so professional development and curriculum is consistent for all teachers at all grade levels. This consistency will ensure that ELLs receive consistent instruction and teachers use consistent techniques from year to year. District-wide consistency will also allow campus level administrators to work together across campuses to help teachers close the achievement gap between ELLs and other student groups.

Teacher Attitudes

The third finding of the current study was the seeming insignificance of teacher attitudes to ELLs' STAAR scores. The results of the study showed that teachers' attitudes, when considered individually, neither positively nor negatively affected ELLs' STAAR scores. However, when teachers' attitudes were combined with the other three variables, the entire model was statistically significant. The statistical insignificance of teacher attitudes about ELLs' and SLA is contrary to years of educational research. Dating back to 1968 and The Pygmalion Effect study conducted by Rosenthal and Jacobsen and as recent as Wayman's 2002 study, it has been shown that teacher attitudes are crucial to student achievement. Teacher attitudes toward students affect the achievement of the student.

One possible reason for the low correlation between teacher attitudes about ELLs and SLA and ELLs' STAAR scores is the high mean attitude score reported by the teachers and the continued lack of achievement by ELLs on the STAAR test. In the current study, teachers reported a mean attitude score of 401 with a standard deviation of 20. The highest score possible on the attitude scale was 450. Teachers self–reported a very high and positive attitude toward ELLs and SLA, but ELLs continued to lag academically in the classroom and on the STAAR tests. Simply because a teacher has a good attitude about ELLs and SLA does not mean students will learn. Teachers must also possess the appropriate knowledge about ELLs and SLA if they are to help ELLs close the achievement gap.

The Full Model

The significance of all four combined factors to improve the effectiveness of teachers is consistent with Darling–Hammond (1996), Hammond (2008), and Brady and Woolfson (2008). In 1996, Darling–Hammond explained, "teachers [must] understand learners and their learnings as deeply as they comprehend [the] subjects [they teach]…" (p. 5). Hammond (2008) stated that to have a positive attitude and to overcome a lack of confidence toward ELLs and SLA, "teachers need considerable knowledge of language…and a knowledge of how to incorporate" (p. 152) SLA techniques into their classrooms. Hammond further discussed the importance of access to high quality professional development for teachers to learn SLA techniques to boost their confidence and their attitude toward ELLs and SLA.

Conclusions

Teachers and administrators must make time to learn the new cultures in their schools and affect change to their own belief systems and attitudes. Teachers and school leaders must view diversity as an "important school characteristic" (Billot et al., 2007, p. 12) and build a trusting and culturally supportive school environment to close the achievement gap. Professional development opportunities must deal with the affective part of educating ELLs as well as the knowledge base needed by teachers to affect academic change. Both are important in closing the achievement gap between ELLs and other student groups.

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THE RELATIONSHIP BETWEEN AN ENGLISH LANGUAGE PROFICIENCY ASSESSMENT AND A STATE MATHEMATICS ASSESSMENT AMONG EXITED ENGLISH LANGUAGE LEARNERS

Nathan S. Frymark, Ed.D.

Introduction

As school districts consider the importance of teaching math skills to all students, many school districts in the United States are struggling to meet the No Child Left Behind Act's academic targets of English Language Learners (ELLs) who do not perform well in math and reading (Zehr, 2008). Many school districts have experienced an increase in their English Language Learner (ELL) population. The ELL population of enrolled public school students has increased by almost 30% in the United States from the 2000-2001 school year to the 2009-2010 school year (ELL Students Increase, 2012). ELLs consist of students who speak a language other than English who have inadequate language skills to properly participate in a classroom dominated by English (Rojas and Iglesias, 2013). The linguistic needs of ELLs can include insufficiencies in speaking, listening, reading, and writing English. ELLs are generally enrolled in English-only classes where educators accommodate the linguistic needs of the students. Since the majority of state assessments are taken in English, many ELLs do not perform well on state assessments according to federal and state standards. The most underperforming academic group in the United States is ELLs (Kihuen, 2009).

Background of the Study

In the North Texas ISD in the study (hereafter referred to as the District), all sixth, seventh, and eighth grade ELLs are underperforming on mathematics STAAR assessments compared to the state of Texas average score for All Students (Texas Education Agency, 2013d). The April 2013 mathematics STAAR performance data between all Texas students and ELL students in the District is indicated in Table 1.

(See Table 1 and 2 on page 35.)

Although all sixth, seventh, and eighth grade ELLs in the District are underperforming in mathematics STAAR assessments compared to the state of Texas, ELLs who met the criteria to exit an ESL program in their first and second year of monitoring are outperforming All Students and other sub-populations including economically disadvantaged, Black/African American, Hispanic, female, male, special education, and Caucasian. The April 2013 mathematics STAAR performance data between All Students, first year of monitoring LEP students, second year of monitoring LEP students, and ELL students in the District is indicated in Table 2.

First and second year of monitoring LEP students are students whose first language is not English. These students have met the state criteria to be exited from the bilingual or ESL program. To exit a bilingual or ESL program, the LEP student has passed a Texas Education Agency (TEA) approved test measuring the student's written and oral proficiency skills, achieved a Met Satisfactory performance on the reading or English language arts state assessment administered in English, passed a TEA-approved criterion-ref-

Table 1

April 2013 Mathematics STAAR Met Satisfactory

	Sixth Grade	Seventh Grade	Eighth Grade
Texas (All Students)	74%	72%	76%
Texas (LEP)	53%	50%	54%
The North Texas ISD (LEP)	59%	36%	65%

Table 2

April 2013 Mathematics STAAR Performance of Students in the North Texas ISD

	Sixth Grade	Seventh Grade	Eighth Grade
All Students	58.40%	36.73%	65.32%
Exited ELL (1st year)	75.61%	46.43%	40.00%
Exited ELL (2nd year)	76.61%	58.46%	65.33%
ELL	37.22%	22.96%	45.52%

erenced written test, and received a subjective teacher evaluation (Texas Education Agency, 2013b). ELLs are expected to meet federal and state standards in mathematics (Moores, 2004). All sixth, seventh, and eighth grade ELLs in the District are underperforming in mathematics STAAR assessments compared to the state of Texas, but ELLs who have met the criteria to exit an ESL program are outperforming All Students. As the North Texas ISD in the study considers the increasing ELL population coupled with the lack of performance on mathematics assessments compared to the state of Texas, new research to improve their mathematics performance was warranted.

English Language Learners and Assessments

The ELL population is growing in public schools, and many school districts have recognized that this population of students is struggling with state standardized tests (Black, 2006). Students who are classified as ELL speak a language other than English, and they have inadequate language skills to properly participate in a classroom dominated by English speakers (Rojas and Iglesias, 2013). School districts are held accountable for their performance on state assessments of math and reading (Sox, 2011), and the increase of ELLs in public schools "raises questions about the extent to which the schools, and more specifically, the teachers, are prepared to meet the needs of their linguistically diverse students" (Sox, 2011, p. 11).

State of Texas Assessment of Academic Readiness (STAAR)

With the passing of House Bill 3 in 2009, Texas school districts were introduced to a new testing program, the State of Texas Assessment of Academic Readiness (STAAR), and accountability system (Texas Education Agency, 2009). The STAAR assesses third through twelfth grade public school students' academic readiness of reading, writing, mathematics, science, and social studies (Texas Education Agency, 2011b).

Texas English Language Proficiency Assessment System (TELPAS)

Public school districts are federally required to assess English language proficiency among ELLs, and Texas public schools utilize the Texas English Language Proficiency Assessment System (TELPAS). ELLs in grades K-12 are assessed with TELPAS in four language domains of listening, speaking, reading, and writing, and it is aligned with the English Language Proficiency Standards (ELPS), which is the state curriculum (Texas Education Agency, 2011a). Scores were composed of four individual proficiency ratings of beginning, intermediate, advanced, and advanced high, and students received a composite language proficiency score (Texas Education Agency, 2011a).

Mathematics Performance

Although there is a system in place to measure and hold school districts accountable for student performance, children who are ELLs are at risk for difficulties in learning mathematical skills (Shaftel, Belton-Kocher, Glasnapp, & Poggio, 2006). According to the Texas STAAR data, first and second year of monitoring limited English proficient students are outperforming English proficient students in the North Texas ISD in the study on state mathematics assessments. Freeman and Crawford (2009) stated that limited English proficient students or English Language Learners are underperforming on state and federal mathematics assessments. Their data was tied to ethnicity results and not specific LEP results. Nationally, 82% of Hispanic fourth grade students and 88% of Hispanic eighth grade students are below proficient level in mathematics assessments (Freeman and Crawford, 2009).

English Language Learners

The identification process for English Language Learners begins when a student is first enrolled in a school district. When the student enrolls in a public school, the parent or guardian fills out a Home Language Survey (HLS). In most states, the HLS is used to identify students who need additional English language support (Bailey and Kelly, 2012). The state of Texas requires school districts to administer a home language survey to determine the language classification of a student. Once the language classification is established, it will determine whether the school district is required to provide a bilingual education or English as a Second Language program (Texas Education Agency, 2013b).

In Texas, a student may exit a bilingual education or English as a Second Language program if they are classified as English proficient at the end of the academic school year. After the student has exited from a bilingual education program or an ESL program, the language proficiency assessment committee (LPAC) will monitor the student's academic progress for two years (Texas Education Agency, 2013b).

Mathematics Performance

Although there is a system in place to measure and hold school districts accountable for student performance, children who are ELLs are at risk for difficulties in learning mathematical skills (Shaftel, Belton-Kocher, Glasnapp, & Poggio, 2006). According to the Texas STAAR data, first and second year of monitoring limited English proficient students are outperforming English proficient students in the North Texas ISD in the study on state mathematics assessments. Freeman and Crawford (2009) stated that limited English proficient students or English Language Learners are underperforming on state and federal mathematics assessments. Their data was tied to ethnicity results and not specific LEP results. Nationally, 82% of Hispanic fourth grade students and 88% of Hispanic eighth grade students are below proficient level in mathematics assessments (Freeman and Crawford, 2009).

English Language Learners and Mathematics

A student's ability to comprehend the language of instruction dictates how successful he or she will be in school (Alt, Arizmendi, and Beal, 2014). English Language Learners have deficiencies in speaking, reading, writing, and listening in English, but they are enrolled in classes of English only instruction (Rojas and Iglesias, 2013). Since English Language Learners have deficiencies in the English language, their "language proficiency can affect academic performance, particularly mathematics achievement" (Alt et al., 2014, p. 220). Their language proficiency puts them at a disadvantage compared to non-English Language Learners (Alt et al., 2014).

Alt, Arizmendi, and Beal (2014) "examined the relationship between mathematics and language to better understand the nature of the deficit and the academic implications associated with specific language impairment (SLI) and academic implications for English Language Learners (ELLs)" (p. 220). The results of the study showed that the relationship between language proficiencies and mathematics performance was positive since the performance of English Language Learners "was less accurate than for those in the NE group for language-heavy, symbol-heavy tasks" (Alt et al., 2014, p. 230). The results of the study by Alt et al. (2014) supported the findings in the study by Abedi and Lord (2001) that language modifications to a mathematics assessment increased the performance of ELL students.

Purpose and Rationale

Abrahamson (2007) called for further research that seeks to identify a connection between different content area instructional programs and student achievement in mathematics; hence, the first purpose of the present study was to determine if there is a relationship between the Texas English Language Proficiency Assessment System (TELPAS) assessment and the mathematics STAAR assessment among six, seventh, and eighth grade ELLs during the year they met the criteria to exit an ESL program. A relationship found between the TELPAS assessment and the mathematics STAAR assessment would provide teachers an instructional focus to use TELPAS assessment results for mathematics interventions.

Allen (2012) called for further research that provides "educators with a significant predictive tool for identifying those students who are at-risk of not meeting the passing standards on the STAAR Math assessments" (p. 86); therefore, the second purpose of the current study was to answer whether the TELPAS assessment predicts the mathematics STAAR assessment among six, seventh, and eighth grade ELLs during the year they met the criteria to exit an ESL program. If the TELPAS assessment predicts the mathematics STAAR assessment, teachers will be able to target their instruction to ELLs who need intervention (Allen, 2012).

There has been an increase of English Language Learners (ELLs) enrolled in public schools in the United States (ELL Students Increase, 2012), and ELLs are the most underperforming academic group in the United States (Kihuen, 2009). In the North Texas ISD which was the focus of this study, sixth, seventh, and eighth grade ELLs who have not met the criteria to exit an ESL program were underperforming all sixth, seventh, and eighth grade students on the mathematics STAAR assessment. All Students in the District were outperforming them from 13 percentage points to 20 percentage points, but sixth, seventh, and eighth grade students who have met the criteria to exit an ESL program are outperforming All Students on the STAAR mathematics assessment. The current study asked and investigated the following research questions.

Research Question 1: (RQ1) Is there a relationship between the Texas English Language Proficiency Assessment System (TELPAS) assessment and the mathematics State of Texas Assessment of Academic Readiness (STAAR) assessment among sixth, seventh, and eighth grade English Language Learners (ELLs) during the year they met the criteria to exit an English as a Second Language program?

Research Question 2: (RQ2) Does the TELPAS assessment score predict the mathematics STAAR assessment score among sixth, seventh, and eighth grade English Language Learners during the year they met the criteria to exit an English as a Second Language program?

Summary of Findings

The study revealed a significant positive relationship between the 2012-2013 TELPAS raw score and the 2012-2013 mathematics STAAR raw score as well as the 2012-2013 TELPAS scale score and the 2012-2013 mathematics STAAR scale score among limited English proficient sixth, seventh, and eighth grade students who exited in the 2012-2013 academic school year. These findings were consistent with the findings of Badgett et al. (2012), and there was a significant relationship between the TELPAS assessment and a state standardized test. In addition, the data revealed a significant positive relationship between the 2013-2014 TELPAS raw score and the 2013-2014 mathematics STAAR raw score as well as the 2013-2014 TELPAS scale score and the 2013-2014 mathematics STAAR scale score among limited English proficient sixth, seventh, and eighth grade students who ex-

ited in the 2013-2014 academic school year. The findings agreed with the results of Alt et al. (2014) who found a positive relationship between language proficiencies and math performance of English Language Learners.

Implications

These findings suggest there is an academic link between the TELPAS assessment score and the mathematics STAAR assessment score, and the results of the current study supported a relationship between language and mathematics (Abedi and Lord, 2001). The TELPAS assessment score is comprised of four domains: listening, speaking, reading, and writing, and the TELPAS assessment is aligned with the ELPS. The mathematics STAAR assessment is aligned with the TEKS. Since there is a relationship between the TELPAS assessment score and mathematics STAAR assessment score, educators can utilize the ELPS with the TEKS through lesson plans, instruction, formative assessment, and summative assessment to improve mathematics performance among ELLs.

The District implemented a new K-12 mathematics curriculum in the 2013-2014 school year, and mathematics educators, administrators, technology specialists, and district coordinators of the District developed the new curriculum. The current curriculum has suggestions and interventions for ELLs, but there is not a separate mathematics curriculum for ELLs. Since there was a significant relationship found between the TELPAS assessment and mathematics STAAR assessment, the District could develop a separate K-12 mathematics curriculum. The curriculum could align the ELPS with the four English language proficiency domains of the TELPAS—listening, speaking, reading, and writing, along with the TEKS. Abedi and Lord (2001) found ELLs benefited on the mathematics assessment more than the proficient speakers of English when there were language modifications on mathematics assessments. The proposed K-12 mathematics curriculum could embed language modifications not normally used in mathematics classes to enhance an ELL student's mathematics performance.

Since there was no significant relationship between the 2012-2013 and 2013-2014 percent score, the findings indicated the validation or reliability of the calculation to convert the raw score to the percent score needs to be investigated. The Texas commissioner of education determined the TELPAS reading proficiency cut score (Texas Education Agency, 2014d) and the STAAR assessment cut score (Weis, 2014). The cut score of any assessment is the passing mark of the test (Weis, 2014). The cut score was based on a subjective measure of what the students are supposed to know (Weis, 2014) where the raw score is the number of correct questions on the assessment (Texas Education Agency, 2015b).

In 2010, Brooks and Thurston indicated that the best strategy to work with ELL students was in small groups and pairs. Their study found that academic language production had a positive probability of occurring during small group and one-to-one instruction (Brooks and Thurston, 2010). From the beginning of the school year, teachers can intentionally pair and group ELLs based on their predicted mathematics scores. Students achieved at a higher level with purposeful grouping based on students' ability and readiness (Tomlinson, Brighton, Hertberg, Callahan, Moon, Brimijoin, Conover, and Reynolds, 2004). In small groups, the teacher can focus the mathematics instruction based on each groups' math skills, readiness, and predicted mathematics score.

Any fifth or eighth grade student who does not meet satisfactory performance on the mathematics, reading, or both assessments after each of the three administrations is required to receive accelerated instruction (Texas Education Agency, 2014c). Instructional interventions can be used between school years to plan and develop accelerated instruction plans for those students who were predicted to not meet satisfactory performance on the mathematics STAAR assessment. The ELL students could receive mathematics instruction based on previous years STAAR expectations

The current study found a relationship between the TELPAS and the mathematics STAAR assessment as well as that the TELPAS was a predictor of the mathematics STAAR assessment among ELLs. The District consisted of an ELL population of almost 40% in 2013, and a non-ELL population over 60% in 2013. There have been many implications suggested of ELL students, but the findings from the study have implications on non-ELLs as well. Texas school districts could develop an English language proficiency as-

sessment similar to the TELPAS assessment to administer to non-ELLs. With the results of the developed English language proficiency assessment, the school district can use those scores to develop interventions for non-ELL students between the developed English language proficiency assessment and the STAAR mathematics assessment. Additionally, the school district can use the English language proficiency assessment as a benchmark assessment to predict mathematics scores for non-ELL students.

Recommendations

A future study should be done to determine if there is a relationship between the TELPAS assessment and the mathematics STAAR assessment between fifth and eighth grade ELLs who have met the criteria to exit an ESL program. Because school districts are to adhere to SSI grade advancement requirements as applied to mathematics and reading assessments of fifth and eighth grade students, all fifth and eighth grade students who did not meet satisfactory performance on mathematics and reading assessments are retained and must receive accelerated instruction after each unsuccessful administration (Texas Education Agency, 2014c).

A future study could also be conducted to determine if the TELPAS assessment predicts the mathematics STAAR assessment between fifth and eighth grade ELLs who have met the criteria to exit an ESL program. When a student does not meet satisfactory performance on the mathematics STAAR assessment in fifth and eighth grade, the student is retained (Texas Education Agency, 2014c).

Since there is a significant relationship between the 2012-2013 and 2013-2014 TELPAS raw and scale score and 2012-2013 and 2013-2014 mathematics STAAR raw and scale score among recently exited ELL students, a duplicate study is recommended to investigate if there is a relationship between the TELPAS raw and scale score and the End of Course (EOC) Algebra I raw and scale score among ninth grade ELL students who have met the criteria to exit an ESL program. If a relationship is found between the TELPAS raw score and the EOC Algebra I raw score among recently exited ELL students, the results could be used for planning, instruction, or assessment among ELLs in the classroom.

The mathematics TEKS changed in fifth through eighth grade starting in the 2014-2015 academic school year (Texas Education Agency, 2014b); therefore, a future study should be done to ask if there is a relationship between the TELPAS raw, scale, or percent score and the mathematics STAAR raw, scale, or percent score among sixth, seventh, or eighth grade ELL students who have met the criteria to exit an ESL program. The results from a future study could be used to plan and develop accelerated instruction plans for those students who do not meet satisfactory performance on the mathematics STAAR assessment.

Conclusion

The population of ELLs in the North Texas ISD in the study is 40%, and ELLs perform lower on state assessments in mathematics compared to All Students in the same district. Freeman and Crawford (2009) found English Language Learners were underperforming on state and federal mathematics assessments. Although ELLs in Texas perform lower on state assessments in mathematics and reading, ELLs in the District who have met the criteria to exit an ESL program perform higher on state mathematics assessments than ELLs who have not met the criteria to exit. ELLs who have met the criteria to exit an ESL program have met the exit criteria on the TELPAS assessment and STAAR reading assessment.

This study is significant in that it responded to calls for research and identified gaps in the existing literature. The study's findings from RQ1 addressed Abrahamson's (2007) call on further research to identify a connection between different content area instructional programs and student achievement in mathematics. The findings from RQ2 answered the call of research by Allen (2012) to provide teachers with a tool to predict STAAR mathematics assessment scores for students who are at-risk and Lopez (2007) who called for future research to develop an instrument to more accurately predict the success of Limited English Proficient students' performance on standardized assessments. The gaps in literature addressed in this study were the lack of research of exited ELLs (Bounds, 2003), and the findings of the current research provided educators with more research on the relationship between language and mathematics.

Teachers have difficulties closing the achievement gaps between classrooms of English speaking and non-English

speaking students (Brooks and Thurston, 2010). As the population of ELL students continues to grow, educators can use the findings of the current study to meet the linguistic needs of ELL students to increase mathematics performance. The TELPAS assessment data can be used to plan and implement instruction to close the gaps between those two groups.

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THE EFFECTIVENESS OF PROJECT BASED LEARNING IN EIGHTH GRADE SOCIAL STUDIES ON ACADEMIC ACHIEVEMENT, ATTENDANCE, AND DISCIPLINE

Cynthia Anne Mika, Ed.D.

Introduction and Background

School districts are faced daily with the need to prepare students for an ever-changing world outside of the walls of education as well as an increasingly stringent accountability system. In the past three decades, legislation at the federal and state levels has challenged school districts across the nation to provide a more meaningful education that is preparing students for an ever changing, technology rich workforce (Graham, 2013). Since the turn of the century, jobs have developed from low skilled and procedural in nature, to more complex while incorporating specialized knowledge and skills (Solomon & Schrum, 2007).

Federal and state legislation over the past three decades coupled with an ever changing work environment is forcing schools to provide a more meaningful education that prepares students for a workforce that relies heavily on 21st century skills (Solomon & Schrum, 2007). According to Ravitch (2010), all roads of the accountability movement lead back to A Nation at Risk, a report that "sounded the alarm regarding the poor quality of America's school" (Danielson, 2002, p. vii). Since the inception of No Child Left Behind, state governments have imposed more rigorous curriculum standards, new assessments aligned to the new standards, more stringent requirements for promotion and graduation, rules for ranking schools, mandatory publicizing of test scores, and new systems for rewards and sanctions based on the test scores (Moe, 2003).

Schools today are looking for a means to engage students in learning while maintaining the standards set by the state accountability systems. Taylor and Parsons (2011) argued that "one common prerequisite for engaging learners is 'relevancy.' Today's learners ask that their learning apply to real-life scenarios whenever possible as opposed to being theoretical and text-based" (p. 12). Project Based Learning (PBL) can be the means to promote engagement of learners partly due to the relevance of the projects as they personalize the experience of the learner by offering the student voice and choice (Boss, 2011).

Students who are not engaged in school can develop attendance and truancy issues in school. "A middle school or high school student's decision to not attend school regularly, or misbehave, or expend low effort are all consequential behavior indicators of a student's growing disengagement from school and thus might be strongly predictive of dropping out" (Balfanz, Herzog, & MacIver, 2007, p. 224). Project Based Learning (PBL) empowers students to actively participate in their learning and collaborate with other students (Pearlman, 2006) and students with more engaging platforms of instruction are motivated to attend school and actively participate in their learning (Chang & Romero, 2008).

Another antecedent of disengagement can be student discipline. Students who are engaged in learning often are less likely to cause discipline issues within the classroom. For students who are struggling with content, "disruptive behavior provides them with an escape from academic tasks" (Howard, 2006, p. 20). PBL is an instructional method that is being implemented across the nation as a means to re-engage the disengaged learner.

PBL emerged more than half a century ago based on a constructivist theoretical foundation as a practical teaching strategy in medicine, engineering, economics, and other disciplines (Holmes, 2012). In PBL, students are challenged to solve problems or create simulations that mimic real life events. A summary of research on PBL by the Center for Excellence in Leadership for Learning at the University of Indianapolis indicates that PBL (a) has a positive effect on critical thinking and problem solving skills, (b) is a successful way of teaching 21st century skills, (c) has a positive effect on student engagement (d) fosters collaboration among students, (e) increases student initiative in utilizing resources and revising, and (f) has a positive effect on student content knowledge (Bradley-Levine & Mosier, 2014).

Purpose of the Study

The purpose of the study was to measure the impact of PBL on student academic achievement, attendance, and discipline in a north Texas school district. The study was an ex post facto, causal-comparative study to determine the impact of PBL on eighth grade students taught social studies with PBL in a North Texas school district. Data analysis determined whether there were statistically significant differences between PBL social studies students and nonPBL social studies students occurring for (a) student achievement as measured by the State of Texas Assessment of Academic Readiness (STAAR) in social studies, reading, and mathematics; (b) student attendance as measured by 2013-2014 PEIMS data; and (c) student discipline as measured by 2013-2014 office referrals. Data analysis sought to answer the following research questions:

1. What is the impact of PBL on student achievement on the 2014 STAAR assessments in social studies, reading, and math for students enrolled in an eighth grade social studies PBL class as compared to students enrolled in a traditional eighth grade social studies class in a North Texas school district?
2. What is the impact of PBL on student attendance for students enrolled in an eighth grade social studies PBL class as compared to students enrolled in a traditional eighth grade social studies class in a North Texas school district?
3. What is the impact of PBL on student discipline for students enrolled in an eighth grade social studies PBL class as compared to students enrolled in a traditional eighth grade social studies class in a North Texas school district?

Procedures and Data Analysis

For the study, the independent variable was the student's platform for social studies instruction; PBL or traditional. In this design, the dependent variables were the following: (a) the actual achievement result on the state tests, (b) attendance, and (c) discipline referrals in relation to the three research questions.

Research Question 1

The *t*-test for independent samples was performed to compare the raw score of the STAAR assessments of the characteristic-present and comparison groups at a significance level of .05 for Research Question 1 addressing the three areas of academic achievement: reading, mathematics, and social studies. The results from the independent samples t-test show the results were t (364) = -4.054 with p = .000062 for social studies, t (364) = -0.889 with a p-value of .369 for reading, and t (364) = -1.103 with a p-value of .271 for mathematics.

The results showed there was a significant difference in scores on the eighth grade social studies STAAR assessment for PBL (M =.577, SD = .150) and nonPBL (M =.499, SD = .156), t (364) = 4.054, $p < .05$, d = .043. Further, Cohen's d, a measure of effect size was computed to be .51. The effect size for the difference in scores between PBL and nonPBL students' STAAR social studies scores was medium. The results showed there was no significant difference in scores on the eighth grade reading STAAR assessment for PBL (M =.674, SD = .152) and nonPBL (M =.657, SD = .160) due to the size of t (364) = .899, $p > .05$. Additionally, there was no significant difference in scores on the eighth grade mathematics STAAR assessment for PBL (M =.554, SD = .150) and nonPBL (M =.531, SD = .176) due to the size of t (364) = 1.103, $p > .05$.

A series of multivariate analysis of variance (MANOVA) tests was performed to test the hypotheses for Research Question 1 that the PBL group outperformed the

non-PBL group on the basis of the outcome measures of mathematics, reading, and social studies in terms of the reporting categories for each of the assessments. The factors of comparison, or dependent variables, were the STAAR reporting categories for each subject. The independent variable was whether PBL was the platform for instruction.

Social Studies MANOVA Results

In Table 1, the results for the multivariate tests of significance indicate whether "there are statistically significant differences among the groups on a linear combination of the dependent variables" (Pallant, 2013, p. 304). Using the Wilk's Lambda Test and the criteria that alpha must be less than .05, if the p-value is less than .05, there is a difference among the groups (Pallant, 2013). There was a statistically significant difference between PBL and nonPBL groups on the combined dependent variables, F (4, 358) = 4.42, p = .002; Wilks'Lamda = .95; η2 = .05). When the results for the dependent variables were considered separately using a Bonferri adjusted alpha level of .0125, all four objectives reached statistical significance: Social Studies Objective 1, F (1, 364) = 10.42, p = .002, η2 = .027; Social Studies Objective 2, F(1, 364) = 13.19, p = .000, η2 = .035; Social Studies Objective 3, F (1, 364) = 11.85, p = .001, η2 = .032; and Social Studies Objective 4, F (1, 364) = 8.83, p = .003, η2 = .024.

The effect size was represented by eta squared (η2) for the MANOVA. Miles and Shelvin (2001) reported the thresholds for small effect to be .01, for medium effect to be .06, and large effect to be .14. All of the η2 represented small effects for the four social studies objectives as indicated in Table 1.

(See Table 1 and table 2 on page 45.)

Reading MANOVA Results

The multivariate tests of significance indicated no statistically significant difference in the PBL and nonPBL groups in terms of academic achievement on any of the three reading objectives. Since the multivariate tests of significance did not indicate a statistically significant difference on any of the three reading objectives between the PBL and nonPBL groups for the null hypothesis, no further investigation of three reporting categories for reading occurred.

Mathematics MANOVA Results

The multivariate tests of significance indicates no statistically significant difference in the PBL and nonPBL groups in terms of academic achievement on any of the five mathematics objectives. Since the multivariate tests of significance did not indicate a statistically significant difference for any of the five mathematics objectives between the PBL and nonPBL groups, no further investigation of the five reporting categories for mathematics occurred.

Research Question 2

The one-tailed t-test for independent samples was performed to compare the attendance of the characteristic-present and comparison groups at a significance level of .05. The t-test was used to compare two groups in terms of outcomes (Creswell, 2014). The one-tailed test was used to determine whether one mean was higher than the other. The one-tailed t-test for independent samples of the hypothesis for Research Question 2 addressed the impact of PBL on student attendance. The t-test produced t (364) = .528 with p = .598. There was no significant difference on student attendance as measured by 2013-2014 PEIMS data of students taught with PBL (M = 6.24, SD = 5.385) and students taught without PBL (M =6.70, SD = 7.364).

Research Question 3

The one-tailed t-test for independent samples was performed to compare the discipline referrals of the characteristic-present and comparison groups at a significance level of .05. An independent t-test was used to test the hypothesis for Research Question 3 addressing the impact of PBL on student discipline referrals. The t-test produced t (103.297) = -1.223 with p = .224. There was no significant difference on student discipline referrals as measured by 2013-2014 PEIMS data between students taught with PBL (M = 1.05, SD = 2.399) and students taught without PBL (M = .71, SD = 1.509).

Findings

This study compared the standardized test results for eighth grade STAAR social studies, reading, and mathematics be-

Table 1
Tests of Between-Subject Effects Effect Size for Social Studies

Source	Dependent Variable	Partial Eta Squared	Noncent. Parameter	Observed Power
Corrected Model	% mastered objective SS1	0.027	10.042	0.885
	% mastered objective SS2	0.035	13.19	0.952
	% mastered objective SS3	0.032	11.848	0.93
	% mastered objective SS4	0.024	8.834	0.842
Intercept	% mastered objective SS1	0.867	2366.793	1
	% mastered objective SS2	0.814	1593.498	1
	% mastered objective SS3	0.857	2177.099	1
	% mastered objective SS4	0.828	1748.234	1
PBLGroup	% mastered objective SS1	0.027	10.042	0.885
	% mastered objective SS2	0.035	13.19	0.952
	% mastered objective SS3	0.032	11.848	0.93
	% mastered objective SS4	0.024	8.834	0.842

Table 2
Comparison of Research Question Results

RQ	Independent Variable	Results	Effect Size
1	Social Studies STAAR Score	Students in PBL social studies classes scored higher than students in traditional social studies classes.	Small
	Reading STAAR Score	No significant difference	N/A
	Math STAAR Score	No significant difference	N/A
	Social Studies Objective 1	Students in PBL social studies classes scored higher than students in traditional social studies classes.	Small
	Social Studies Objective 2	Students in PBL social studies classes scored higher than students in traditional social studies classes.	Small
	Social Studies Objective 3	Students in PBL social studies classes scored higher than students in traditional social studies classes.	Small
	Social Studies Objective 4	Students in PBL social studies classes scored higher than students in traditional social studies classes.	Small
	Reading Objectives	No significant difference	N/A
	Math Objectives	No significant difference	N/A
2	Attendance	No significant difference	N/A
3	Discipline Referrals	No significant difference	N/A

tween PBL and nonPBL groups. Additional tests for differences in eighth grade student attendance and discipline referrals being taught social studies with PBL or in a traditional manner were conducted. The STAAR scores, attendance, and discipline referrals were compared using t-tests for independent samples. Additionally, the reporting categories results for social studies, reading, and mathematics were compared for differences between PBL and nonPBL groups using a series of multivariate analysis of variance (MANOVA) tests. Table 2 illustrates the independent variable, results, and effect size for each research question in the study.

Implications

The results of the study provide some statistical evidence that PBL as a platform for instruction can yield a significant impact on student achievement in the subject in which PBL is utilized. Students enrolled in the PBL social studies classes had a higher passing rate on the social studies STAAR than those enrolled in traditional social studies classes. Additionally, the students enrolled in the PBL social studies class had a higher rate of mastery on the four social studies objectives assessed by the grade 8 STAAR social studies assessment. There were no tests performed that resulted in the PBL students receiving higher academic achievement rates in reading and mathematics nor lower attendance and discipline rates.

Based on the success of the PBL students as compared to the nonPBL students on the subject level test in which PBL was the platform of instruction, the researcher would encourage district and campus leadership to consider the expansion of the PBL platform of instruction to all social studies and science classes. PBL would then become part of the framework from which all students on the campus learned both social studies and science content as well as preparing them for 21st century skills and the workforce of tomorrow.

Conclusions

While this study has limitations and a limited ability to generalize the results to a broader population, the study, as well as the results obtained, provide valuable information for instructional leaders to use in making decisions that affect the instructional capacity of campuses and the District. In an ever-changing world driven by fast-paced changes in technology and a federal and state accountability system placing an emphasis on standardized testing as well as college-and-career readiness, a shift needs to occur in education away from the traditional means of instructing students that has roots in the industrial revolution. The shift must be from the skills training platform to the active learning platform in which students are performing "real-world" activities. PBL is one of the strategies being employed by districts to meet this shift in education (Thomas, 2000). Research has shown that students learn better by doing authentic tasks that are more complex in nature than they do for rote memorization and skill and drill exercises. PBL has evolved over the years as a viable instructional strategy that addresses core content academics through rigorous, relevant, and hands-on learning (Barron & Darling-Hammond, 2008).

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DOROTHY M. BUSH COLLEGE OF
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EFFECTS OF TEXAS BEHAVIOR SUPPORT INITIATIVE ON REDUCING AGGRESSIVE BEHAVIORS IN ELEMENTARY STUDENTS

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Background

Fighting, bullying, and violent acts, once believed commonplace in high schools, is now filtering down to middle and elementary schools (Boothe, Bradly, Flick, Keough, & Kirk, 1994). Subsequently, discipline reports generated by schools continue to show problems with "bullying, disrespect, verbal abuse, and general classroom disorder occurring daily or weekly" (Scott, Park, Swain-Bradway, & Landers, 2007, p. 223). In a recent survey of 1,912 urban students in the fourth and fifth grades, one-third of those surveyed indicated that they would hit peers back if struck by them, and 23%-43% worried about being physically attacked in or around school (Price, Telljohann, Drake, Marsico, & Zyla, 2002). In addition, a direct linear relationship existed between age of the students and whether they would hit a peer back in response to being hit (Price et al., 2002). The older students were more likely than younger students to indicate that they would hit a peer back in response to being hit (Price at al., 2002). Findings of Price's study (2002) indicated a need for early intervention in response to student to student acts of aggression.

In addition to student to student aggression, research has shown an increase in student to teacher aggression. The role of the classroom teacher has become more multidimensional as teachers are being asked to accommodate for students with more diverse academic and behavioral needs in the general education setting (Scott et al., 2007). The increase in disruptive, aggressive student behaviors has resulted in frequent requests for assistance from teachers related to behavior and classroom management (Cotton, 2001). According to the National School Safety Center (2013), during the 2007–2008 school year, 7% of elementary school teachers reported being threatened or physically attacked by students compared to 8% of secondary school teachers. The difference in the percentage of elementary and secondary teachers in city schools who reported being threatened with injury was not statistically significant. However, according to the National School Safety Center (2013), 5% more elementary school teachers reported having actually been physically attacked than secondary teachers.

Although no globally accepted definition of aggressive behavior exists, consensus seems to exist that aggressive behavior is meant to either injure another, to gain something for the aggressor, or to result in both injury and extraneous gains (Zirpoli, 2014). Aggressive behaviors typically expressed by primary aged children include a range of acts from threatening to teasing, to physical fighting, to violence (Loeber & Stouthamer-Loeber, 1998). Along with verbal and physical acts, researchers have increasingly highlighted indirect, relational, or social aggression, such as peer exclusion and gossiping, which harms others through the manipulation of social relationships (Henington, Hughes, Cavell, & Thompson, 1998).

The most common response to the epidemic of youth violence is some sort of consequence or punishment (Sprague & Golly, 2013). The majority of society tends to believe that if the correct punishment can be found, then people, in this case youth, will start doing the right thing (Sprague & Golly, 2013). These formal punishments have often been applied

broadly, based on zero tolerance policies that generally require out-of school-suspension or expulsion for a variety of behaviors (Kang-Brown, Trone, Fratello, & Daftary-Kapur, 2013). Initially instated for possession of a weapon or illegal drugs, zero tolerance policies have been expanded to include aggressive behaviors, such as assaults and fights in schools (Kang-Brown et al., 2013). Multiple studies, both nationally and in Texas, have provided evidence that zero tolerance policies disproportionately affect students of color and students with special needs (Kang-Brown et al., 2013). Additionally, no research exists to support the benefit of zero tolerance policies (Kang-Brown et al., 2013).

The State of Texas originally responded to exclusionary student practices through the passage of Senate Bill 1196. Enacted by the 77th Texas Legislature, Senate Bill 1196 amended the Texas Education Code prohibiting school districts and open-enrollment charter schools from placing a student in seclusion and requiring the commissioner to adopt rules for the use of restraint and time-out (Texas Education Agency, 2010). Following passage of Senate Bill 1196, state-level Texas Behavior Support Initiative (TBSI) training was established and mandated.

The initial TBSI training was provided to Texas educators during the 2002-03 school year (Region 17 Education Service Center, n.d.). The training was designed to provide foundational knowledge for the use of positive behavior interventions and supports (PBIS) for all students, including those with disabilities. Although the TBSI training met legislative requirements related to procedures for the use of restraint and time-out, it also provided a framework for sharing a wide range of foundation-level behavior strategies and prevention-based school-wide, classroom, and individual interventions.

Although the original focus of TBSI was to support the behavior needs of students with disabilities, it quickly became evident in examining the newly expanding PBIS model that in order to address the needs of children in special education, prevention interventions had to be implemented for all students (Region 4 Education Service Center, 2014). Therefore, the original TBSI training evolved, based on current research on school-wide systems and adopted PBIS as its philosophical foundation and supports all three tiers of the model, including school-wide and classroom.

Numerous studies are present on changing the disruptive behavior of students using positive reinforcement; however, most experts in the field agree that school-wide PBIS is in its infancy (Robinson, 2012). The efficacy of school-wide use of TBSI on the rates of exclusionary discipline practices across racial groups, economic groups, and disability categories related to aggressive student behaviors in the primary grades has not been thoroughly explored in the literature. The purpose of the current study is to add to the research literature on Positive Behavior Interventions and Supports and its effects on reducing aggressive behaviors in elementary aged students.

Methodology

Discipline data was examined at nine purposely selected elementary campuses in multiple stages of Texas Behavior Support Initiative (TBSI) implementation to create a better understanding of TBSI implementation and assist in isolating the variables that contribute to a reduction in aggressive student behaviors. Quantitative methods were used to collect disciplinary data for students in grades kindergarten through fourth grade in fall 2014 (August 25, 2014 through January 23, 2015) at: 1) three elementary campuses with no TBSI implementation (control group), 2) three elementary campuses currently implementing TBSI in common areas of the campuses; and 3) three elementary campuses currently implementing TBSI school-wide.

Research Design

The current study was an action-based research project to study the predictive relationship between TBSI implementation and aggressive student behavior. A causal-comparative research design incorporating quantitative methods was used to answer the research question. A causal-comparative design is a research design that seeks to find relationships between independent and dependent variables after an action or event has already occurred (Salkin, 2010). The researcher's goal was to determine whether implementation of TBSI was associated with the number of discipline referrals related to aggressive student behaviors by comparing two or more groups of individuals.

Research Question 1 (RQ1) Does the number of discipline referrals differ based on the degree of TBSI implementation?

$H1_0$: $\mu_{campuses}$ with no TBSI = $\mu_{campuses}$ with TBSI common area implementation = $\mu_{campuses}$ with TBSI school-wide implementation

H1: At least one of the population means is different from the others.

Setting, Target Population and Sample

The setting for the study was a suburban school district in the North Texas region with a total student population in grades kindergarten through 12 of approximately 33,254. The population for the current study was kindergarten through fourth grade students enrolled in elementary campuses in a suburban school district in the North Texas region. A total of 22 elementary campuses serve kindergarten through fourth grade students in the selected district. The sample for the current study was derived from nine purposely selected elementary campuses representing approximately 41% of the elementary campuses in the selected district.

The nine campuses selected consists of 5,578 students. Of the total, 223 students accounted for 463 total discipline referrals. The 223 students were reviewed, and two outliers (students) were removed due to the drastic difference in total discipline referrals received resulting in a total sample size of 221 students and 425 discipline referrals. Of the 425 total discipline referrals, 282 were coded as aggressive and 143 were coded as non-aggressive. Based on data supporting an increase in student aggression towards adults and information discovered in the data collected, the researcher conducted additional statistical analysis by further dividing the aggressive discipline referrals into two sub-categories: aggressive actions directed toward other students and aggressive actions directed toward adults. Two hundred fourteen acts of aggression toward students were identified, and 68 acts of aggression toward adults were identified.

Instrumentation, Measures and Findings

To answer the research question, a one-way MANOVA was utilized with the computed mean scores of each level of the three constructs; aggressive discipline referrals, non-aggressive discipline referrals, and total discipline referrals as the dependent variable. The independent variables—full, common, or none—were levels of TBSI implementation. Additional analysis was conducted based on added dependent variables of total aggressive referrals, student to student aggressive referrals (StS), or student to teacher (StT) aggressive referrals. The data were examined to determine if differences were present between the three groups for the three constructs. Table 1 presents the means and standard deviations for the three dependent variables represented in the research question and the two additional dependent variables analyzed.

(See Table 1 on page 51.)

Statistical Package for the Social Sciences (SPSS) outputs four rows, which each shows the statistics of a separate multivariate test method: Pillai'sTrace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. For the purposes of the current study, the Wilks' Lambda was used, as it is the most widely used and accepted (AERD Statistics, 2013; Crichton, 2000). Table 2 reveals no statistically significant difference among the level TBSI implementation groups on a linear combination of the three dependent variables, F (6, 432) = 1.498, $p > .05$; Wilk's $\Lambda = 0.96$, partial $\eta 2 = .020$.

(See Table 2on page 52.)

Because the MANOVA did not reveal a statistically significant result, further follow-up tests were performed. A Tests of Between-Subjects Effects was conducted to determine how each dependent variable differed. A statistically significant difference was present in non-aggressive discipline referrals based on the level of TBSI implementation, F (2,218) = 3.748; $p \leq .025$; partial $\eta 2 = .033$. Bonferroni correction was applied to alpha ($p \leq .025$) to account for multiple analysis of variance.

Because statistical significance was detected in the Test of Between-Subjects Effects for non-aggressive referrals, it was necessary to complete a Tukey's post-hoc pairwise comparison to determine how the groups differ (AERD Statistics, 2013; Fields, 2013). Results of Tukey's post hoc test

revealed in Table 10 showed mean scores for non-aggressive discipline referrals were statistically significant between full implementation campuses and no implementation campuses only ($p < .05$).

Results and Implications for Practice

The current study demonstrated a link between the number of non-aggressive discipline referrals and the level of TBSI implementation. In doing so, the current study revealed schools can significantly reduce disruptive or inappropriate behaviors when implementing TBSI. While TBSI was formed as the result of a legislative change affecting primarily students receiving special education services, it is clear that implementation aides in the reduction of inappropri-

Table 1

Means and Standard Deviations of Dependent Variables

Dependent Variable	TBSI Implementation	*N**	*n**	*M*	*SD*
Aggressive Discipline Referrals	Full	61	85	1.39	1.67
	Common	74	98	1.32	1.75
	None	86	99	1.30	1.57
StS Aggression	Full	61	67	1.10	1.23
	Common	74	68	0.92	0.84
	None	86	79	1.01	1.29
StT Aggression	Full	61	18	0.30	0.76
	Common	74	30	0.41	1.35
	None	86	20	0.29	0.73
Non-aggressive Discipline Referrals	Full	61	27	0.44	0.70
	Common	74	53	0.72	0.91
	None	86	63	0.86	1.04
Total Discipline Referrals	Full	61	112	1.84	1.72
	Common	74	151	2.04	1.93
	None	86	162	2.16	1.86

Note. N = total number of cases (students), n = number of discipline referrals per category

Table 2

Multivariate Tests

Effect		Value	*F*	Hypothesis *df*	Error *df*	Sig.	Partial ETA Squared
TBSI	Pillai's Trace	.04	1.498	6.00	434.00	.177	.020
	Wilks' Lambda	.96	1.498	6.00	432.00	.177	.020
	Hottelling's Trace	.04	1.498	6.00	430.00	.177	.020
	Roy's Largest Root	.04	2.529	3.00	217.00	.058	.034

ate student behaviors and the creation of safe classroom environments that are more conducive to learning for all students. Additional benefits in a reduction in disruptive student behavior include, but are not limited to, increased instructional time for teachers and students, increased opportunity for academic student success, and adult and peer social acceptance (Bradshaw, Mitchell, & Leaf, 2010; Walker, Ramsay, Gresham, n.d.).

Specifically, the current study revealed links between campuses with full school-wide implementation and no implementation. Generally, campuses implement TBSI in year-long phases, beginning with common area implementation in year one and progressing to full implementation in year two. Common area interventions are small-group efforts created to reduce the number of current cases of problem behavior in specific areas of the campus used by more than one classroom of students at any given time (Trussell, 2008). Colvin, Sugai, Good, and Lee (1997) suggested misbehavior in school common areas accounts for approximately one-half of all problem behaviors in many schools. Full implementation campuses have established behavioral supports for the entire school system including both classroom and non-classroom environments (OSEP, 2002). Full implementation campuses have systems in place designed to address the behavioral needs of as many students as possible in an efficient manner, which in turn frees up resources for students who need the most behavioral support for success (OSEP, 2002).

Statistical significance was established only for the number of non-aggressive discipline referrals between full implementation and no implementation campuses. No statistical significance was detected between other types of referrals and combinations of implementation (i.e. full and common, or common and none). Possible explanations may include lack of staff buy-in, teacher misconceptions, failed attempts to implement other discipline programs, and lack of parent and family involvement, (Cregor, 2008, Durand & Rost, 2005; Markey, Markey, Quant, Santelli, & Turnbull, 2002; Samuels, 2013; Swain-Bradway, Swoszowski, Boden, & Sprague, 2013).

Texas educators interested in adopting and implementing a comprehensive system of TBSI within their campus or district need to attend to several key issues in order to achieve buy-in from vital stakeholders. For example, prior to presenting a system of TBSI to staff, an action plan will need to contain several critical components: 1) a strong core leadership team, 2) a collective vision shared by all staff, 3) a strong sense of shared responsibility for all students by all staff, 4) local demonstrations of successful TBIS campuses, and 5) sufficient support and materials.

While the evidence for the efficacy and effectiveness for TBSI is growing, future research should be directed toward: 1) factors that influence the adoption of evidence-based practices, 2) establishment and sustainability of durable systems of TBSI, 3) identification and selection of specific interventions for the students who are unaffected by traditional and

more general disciplinary approaches, and 4) integration of TBSI with additional types of intervention efforts.

The study revealed full implementation of TBSI aids in the reduction of non-aggressive, disruptive student behaviors, thus reducing the punitive consequences of exclusion, and increasing instructional time for students. The findings suggest that there is merit in further exploring the efficacy of TBSI among campuses and districts.

The information serves as a baseline for comparison for other schools and districts to self-evaluate current levels of TBSI implementation and the relationship to student discipline referrals.

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COMPETENCIES OF THE PUBLIC SCHOOL MUSIC ADMINISTRATOR: TEXAS MUSIC ADMINISTRATOR PERSPECTIVES

Jeremy L. Earnhart, Ed.D.

Introduction and Background

The last decade has featured a substantial increase in the volume of research and literature supporting the benefits of public school music education (Collins, 2014; Davis, 2012; Martin, 2012; Zuk, Benjamin, Kenyon, & Gabb, 2014). This information comes to decision makers at a time when economic conditions have forced reductions in funding for public education, specifically in public school music education (DeLorenzo, 2012; Major, 2013; Sanders, 2014). At the same time, music education (a non-tested subject) faces the fallout from an increased emphasis on standardized curriculum and high-stakes testing (Beveridge, 2010; Elpus, 2014; Joseph, 2011). A robust body of literature exists linking student achievement to school leadership (Labby, Lunenburg, & Slate, 2012; Marzano, Waters, & McNulty, 2005; Soehner & Ryan, 2011). Nearly absent is research concerning the public school music administrator.

System-wide benefits of music education include improved academic performance, improved attendance, and higher graduation rates (Texas Music Educators Association, 2014). In addition, the literature suggests that exposure to systemic arts education is a pragmatic imperative for the future of the American economy (Pink, 2006). Research also exists that demonstrates school district cost savings through strengthening music education—the reverse is true when music education is cut (Benham, 2011). Furthermore, support from an administrator certified in music has been found to have a positive effect on music teacher retention (Siebert, 2008).

The literature contains gaps in the area of public school music administration in comparison to academic administration. While the literature is able to assist in the hiring and evaluation of academic school leadership (Rammer, 2007; Cavazos, 2012), there is little known to assist such practices for the music administrator. Public education has a fiduciary responsibility to ensure proactive stewardship, which includes monitoring evaluation of its music programs.

In 2014-2015, the Texas Association of School Administrators (TASA) and Texas Association of School Boards (TASB) listed 106 Texas public school districts with a Director of Fine Arts—the central office music administrator—which is up from 85 in 2009-2010 (Texas Association of School Administrators & Texas Association of School Boards, 2010, 2014). This 25% increase in Texas music administrators over a five-year period underscores the importance for study in this area.

Purpose

The purpose of the current study was to establish the research-based building blocks for the hiring of music and arts public school administrators. The study sought to determine what educational competencies are considered important in the selection of a central-office music administrator from the perspective of music administrators in Texas. This question is a response to the following educational problem: A robust body of literature links student achievement to academic school leadership. Nearly absent is literature concerning research-based educational competencies

of the music administrator. Consequently, public schools have no research-based method to hire or evaluate the music administrator.

It was therefore important to study (a) how the 21 behaviors or responsibilities (competencies) of effective school leaders (Marzano et al., 2005)—as shown in Table 1—are considered most valuable or important from the perspective of the Texas music administrator, (b) how these competencies were assessed during their hiring process, and (c) to determine if response variety exists to the aforesaid in relation to the arts background (dance, music, theatre, visual art, none, or other) of the music administrator.

Method

The current study was a survey of the 2014-2015 Texas Music Administrator Conference active membership. The population included active members of TMAC (minus the researcher) for an eligible pool of 138. The response rate of the survey for the current study was 70%.

Three specific questions were posed to the membership

Table 1

The 21 Responsibilities of Effective School Leaders and Their Correlations (r) with Student Academic Achievement

Responsibility	The Extent to Which the Principal…	Average *r*	95% CI	No. of Studies	No. of Schools
1. Affirmation	Recognizes and celebrates accomplishments and acknowledges failures	.19	.08 to .29	6	332
2. Change Agent	Is willing to challenge and actively challenges the status quo	.25	.16 to .34	6	466
3. Contingent Rewards	Recognizes and rewards individual accomplishments	.24	.15 to .32	9	465
4. Communication	Establishes strong lines of communication with and among teachers and students	.23	.12 to .33	11	299
5. Culture	Fosters shard beliefs and a sense of community and cooperation	.25	.18 to .31	15	819
6. Discipline	Protects teachers from issues and influences that would detract from their teaching time or focus	.27	.18 to .35	12	437
7. Flexibility	Adapts his or her leadership behavior to the needs of the current situation and is comfortable with dissent	.28	.16 to .39	6	277
8. Focus	Establishes clear goals and keeps those goals in the forefront of the school's attention	.24	.19 to .29	44	1,619
9. Ideals/Beliefs	Communicates and operates from strong ideals and beliefs about schooling	.22	.14 to .30	7	513
10. Input	Involves teachers in the design and implementation of important decisions and policies	.25	.18 to .32	16	669
11. Intellectual Stimulation	Ensures faculty and staff are aware of the most current theories and practices and makes the discussion of these a regular aspect of the school's culture	.24	.13 to .34	4	302
12. Involvement in Curriculum, Instruction, and Assessment	Is directly involved in the design and implementation of curriculum, instruction, and assessment practices	.20	.14 to .27	23	826

13. Knowledge of Curriculum, Instruction, and Assessment	Is knowledgeable about current curriculum, instruction and assessment practices	.25	.15 to .34	10	368
14. Monitoring/ Evaluating	Monitors the effectiveness of school practices and their impact on student learning	.27	.22 to .32	31	1,129
15. Optimizer	Inspires and leads new and challenging innovations	.20	.13 to .27	17	724
16. Order	Establishes a set of standard operating procedures and routines	.25	.16 to .33	17	456
17. Outreach	Is an advocate and spokesperson of the personal aspects of teachers and staff	.27	.18 to .35	14	478
18. Relationships	Demonstrates an awareness of the personal aspects of teachers and staff	.18	.09 to .26	11	505
19. Resources	Provides teachers with materials and professional development necessary for the successful execution of their jobs	.25	.17 to .32	17	571
20. Situational Awareness	Is aware of the details and undercurrents in the running of the school and uses this information to address current and potential problems	.33	.11 to .51	5	91
21. Visibility	Has quality contact and interactions with teachers and students	.20	.11 to .28	13	477

Note. Adapted from *School Leadership That Works: From Research to Results,* by R. J. Marzano, T. Waters, and B. A. McNulty, 2005, Alexandria, VA: Association for Supervision and Curriculum Development.

of the Texas Music Administrators Conference (TMAC) through the design of the survey instrument:

1. What competencies do Texas music administrators perceive as important in the selection of a school music education leader?
2. How were the competencies of a music administrator assessed during the hiring process?
3. How do the perceptions in terms of music education leader competencies differ according to the primary arts background (dance, music, theatre, visual arts, none, or other) of the central music administrator?

The current study employed a quantitative research method using descriptive statistics to analyze the data gathered through an online survey using an adaptation of an existing instrument. Permission was sought and granted by Rammer (2007) and Cavazos (2012). Rammer (2007) developed the instrument to survey superintendents in Wisconsin with regard to research-based hiring practices of principals. Cavazos (2012) modified the instrument for principals in south Texas based on Rammer's findings. This music administrator survey essentially substituted central office music administrator for principal. Cavazos (2012) also disaggregated data based on the building level of the principal: elementary, middle, or high school. This music administrator survey substituted primary fine arts background of the music administrator for building level as used in the survey by Cavazos.

Section one of the survey collected demographic information. Section two of the survey asked respondents to what degree, on a five point Likert-type scale, they felt each of the 21 competencies of an effective school leader (Marzano et al., 2005) is important when hiring a central office music administrator. Respondents were also able to include up to two additional competencies they felt were important when hiring a central office music administrator.

Findings

The current study found that Texas music administrators agreed that the 21 competencies of an effective school lead-

er (Marzano et al., 2005) are important in the selection of a central office music administrator. Strongly Agree was indicated for each of the 21 competencies with a mean ranging from 4.4 to 4.9. The data showed that of the 21 competencies of school leaders by Marzano et al. (2005), Texas music administrators found the two most important skills to be communication and resources. In the 21 competencies Communication was defined as "establishes strong lines of communication with and among teachers and students," and Resources was defined as "provides teachers with materials and professional development necessary for the successful execution of their jobs." Communication and resources each had a mean of 4.9 and were responded to as Strongly Agree by 89.6% and 88.2% respectively by Texas music administrators.

In response to how the 21 competencies were assessed during their hiring process, respondents indicated the most common form was interview by a committee, next by the superintendent or designee. The third most common form of assessment was not to assess the competency at all. In other words, 27.9% of the time, various competencies of an effective school leader were not assessed during the hiring process of the central office music administrator.

Competency Value to Music Administrators: Fine Arts Background Lens

The subgroup of music administrators with a background in music maintained communication as the most important competency at a Strongly Agree response rate of 90.2% and a mean of 4.9. Resources was the second most important competency with the music group indicating a mean of 4.9 with 88.6% Strongly Agree.

The subgroup of music administrators with a background other than music rated knowledge of curriculum, instruction, and assessment as the most important competency in the selection of a music education leader. At 85.7%, with a mean of 4.9 each, the non-music subgroup of music administrators preferred three different competencies as the second most important when selecting a music education leader: communication, outreach, and resources.

Therefore, this study shows that music administrator response variation exists based on the primary fine arts background in terms of the most important competency which should be considered when hiring a music education leader. Communication was most important to those with a music background while for those with a non-music background, the most important competency when selecting a music administrator was knowledge of curriculum, instruction, and assessment.

Comparison to the 21 Competencies in Other Studies

Table 3 demonstrates consensus on the most important of the 21 competencies—Communication—and common ground thereafter in terms of the competencies rated in the top third by superintendents, principals, and music administrators.

(See Table 3 on page 59.)

Also, a review of the most important competency rated by music administrators differed between music and non-music backgrounds. This comparison places superintendents, principals, and music administrators with music backgrounds in agreement that communication is the most important educational competency and music administrators with non-music background projecting a different response.

It is also notable that the competency change agent—willing to challenge and actively challenges the status quo—differs between the three administrator groups. Superintendents value change agent in the middle third while principals and music administrators value this competency in the bottom third. In fact, principals value change agent last while music administrators value change agent 20 of 21.

Additional Competency Responses

More than half of the respondents contributed at least one additional competency that they felt was important to consider or evaluate when hiring a central office music administrator. While it was certainly unknown what the volume of response would look like, it was definitely unexpected that music administrators would contribute an additional 79 competency responses.

Table 2

Music Administrator Survey Results by Music Background

	All Respondents				Music				Non-music			
Competency	*n*	*M*	*SD*	%SA	*n*	*M*	*SD*	%SA	*n*	*M*	*SD*	%SA
1	96	4.6	0.62	66.7	82	4.7	0.50	67.1	14	4.4	1.09	64.3
2	96	4.4	0.63	52.1	82	4.4	0.65	52.4	14	4.5	0.52	50.0
3	96	4.5	0.56	52.1	82	4.5	0.55	52.4	14	4.4	0.65	50.0
4	96	4.9	0.31	89.6	82	4.9	0.30	90.2	14	4.9	0.36	85.7
5	96	4.7	0.45	72.9	82	4.7	0.45	72.0	14	4.8	0.43	78.6
6	96	4.4	0.64	50.0	82	4.5	0.59	51.2	14	4.2	0.89	42.9
7	90	4.5	0.62	61.1	78	4.5	0.62	60.3	12	4.6	0.67	66.7
8	96	4.7	0.49	69.8	82	4.7	0.50	68.3	14	4.8	0.43	78.6
9	96	4.5	0.56	53.1	82	4.5	0.57	51.2	14	4.6	0.50	64.3
10	95	4.7	0.50	66.3	81	4.6	0.51	64.2	14	4.8	0.43	78.6
11	95	4.5	0.65	53.7	81	4.4	0.65	53.1	14	4.5	0.65	57.1
12	95	4.7	0.51	75.8	81	4.7	0.53	75.3	14	4.8	0.43	78.6
13	95	4.8	0.44	83.2	81	4.8	0.47	81.5	14	4.9	0.27	92.9
14	95	4.6	0.56	62.1	81	4.6	0.54	61.7	14	4.6	0.65	64.3
15	94	4.5	0.62	55.3	80	4.5	0.63	52.5	14	4.7	0.47	71.4
16	94	4.7	0.60	71.3	80	4.7	0.62	72.5	14	4.6	0.50	64.3
17	94	4.8	0.41	83.0	80	4.8	0.42	82.5	14	4.9	0.36	85.7
18	93	4.5	0.65	60.2	79	4.5	0.66	58.2	14	4.6	0.63	71.4
19	93	4.9	0.32	88.2	79	4.9	0.32	88.6	14	4.9	0.36	85.7
20	92	4.5	0.64	54.3	78	4.5	0.60	56.4	14	4.2	0.80	42.9
21	92	4.8	0.39	81.5	78	4.8	0.39	82.1	14	4.8	0.43	78.6

Note. %SA - Percentage of respondents selecting Strongly Agree

NVivo is a program commonly used in qualitative research to analyze themes within text-based responses such as the 79 emerging music administrator competencies.

It "provides for visually mapping categories identified" (Creswell, 2012, p. 243) through the free response section of this survey study. Figure 1 is a dendrogram of co-occurring words created with NVivo. This text search query is relational in that it shows frequency and relation to other words.

Discussion and Implications

Based on multiple NVivo methods, combined with the researcher's synthesis of the full text of additional competencies, the following emerging music administrator competencies were proposed:

- Balance: An awareness of and advocacy for multiple arts disciplines
- Equity: The ability to be fair to multiple arts disciplines
- Financial: The skills of finance/budget
- Grounded: The trait of maintaining touch
- Involvement: Actively engaged with students, programs, and the community

Balance and equity are clearly important to Texas music administrators. This is likely the case as, through the demographic data collected, the average Texas music administrator in 2014-2015 was white, male, 51 years of age, and a former band director. Texas music administrators realize that it is important to be cognizant of other music divisions including elementary music, choir, and orchestra as well as the other fine arts disciplines of dance, theatre, and visual art. It is also possible that respondents are insistent about balance and equity because they observe this not to be the case with other music administrators or fine arts directors.

Financial skills also emerged as a theme. In fact 13 of the 79 responses, or 16%, referenced an additional competency related to finance. This is likely in response to the propor-

Table 3

Administrator Competency Group Results by Thirds

Superintendents (Rammer)	Principals (Cavazos)	Music Administrators	Rank Group
Communication	Communication	Communication	Top Third
Culture	Visibility	Resources	
Outreach	Focus	Knowledge of C, I, and A	
Focus	Involvement in C, I, and A	Outreach	
Visibility	Culture	Visibility	
Input	Resources	Involvement in C, I, and A	
Knowledge of C, I, and A	Knowledge of C, I, and A	Culture	
Affirmation	Outreach	Order	Middle Third
Involvement in C, I, and A	Monitoring and evaluating	Focus	
Monitoring/evaluating	Situational awareness	Affirmation	
Ideals/beliefs	Ideals/beliefs	Input	
Change agent	Discipline	Monitoring/evaluating	
Contingent rewards	Input	Flexibility	
Flexibility	Order	Relationships	
Optimizer	Affirmation	Optimizer	Bottom Third
Situational awareness	Flexibility	Situational awareness	
Order	Relationships	Intellectual stimulation	
Resources	Optimizer	Ideals/beliefs	
Relationships	Contingent rewards	Contingent rewards	
Intellectual stimulation	Intellectual stimulation	Change agent	
Discipline	Change agent	Discipline	

tion of the music administrators' work that surrounds budget, accounting, and purchasing.

The themes called grounded and involvement are presented as synthesis of the 79 emerging competencies captured under a heading identified as collaboration/consensus. Soft skills surrounding collaboration require positive relationships. Almost by definition, the central office music administrator is physically removed from that which/whom they supervise. Efforts should be exhausted to be visible and allow students, teachers, and the community to feel supported and to be heard.

Competencies Important to Music Administrators

The current study shows that the 21 competencies of an effective school leader (Marzano et al., 2005) are important to Texas music administrators in the selection of a music education leader. This study further indicates that according to practicing music administrators, communication and resources are the top two educational competencies that should be considered when hiring a music administrator. It was also found that many times the 21 competencies were not assessed in the music administrator hiring process.

Limitations and Recommendations for Hiring

The question arises as to whether the beliefs of Texas music administrators expressed in this survey are a result of a self-fulfilling prophecy. That is to say, it is likely that those district administrators who created job descriptions, screened applicants, interviewed candidates, and made selections for music administrator positions may have based the process on general administrator competencies, rather

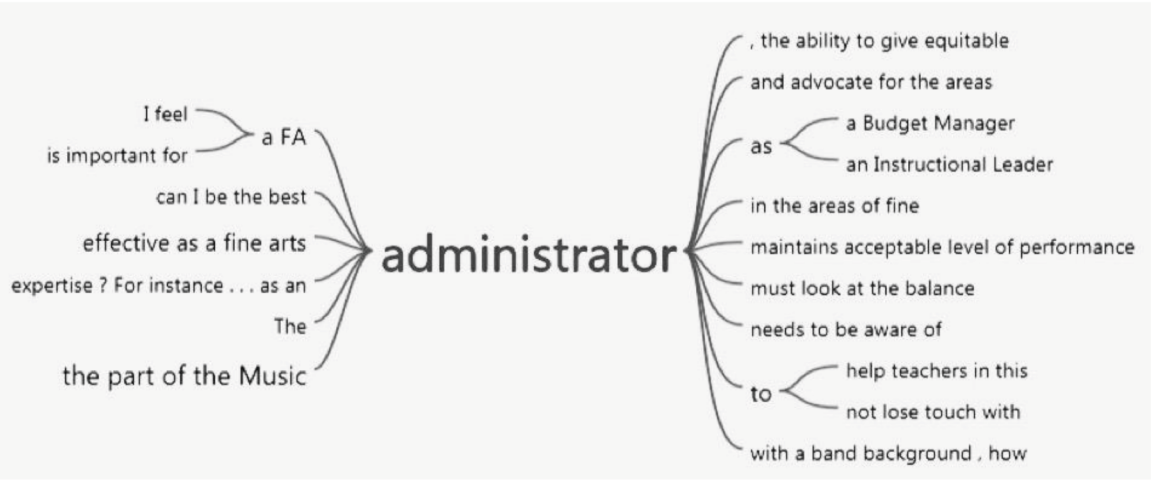

Figure 1 Dendrogram of Co-occurring words in NVivo

than those specific to music administrators.

The body of TMAC who responded to this survey may have been influenced by this general educational administrator paradigm, and based their responses on personal experience in the hiring process, rather than on their actual perceptions of the ideal competencies to be considered for a music administrator position. Benham (2011) noted, "As music administrators assumed their positions, many became painfully aware that they had really been hired by the administration to endorse whatever decisions were passed down to them" (p. 60).

This question surfaces in response to the tepid reception provided by Texas music administrators to the educational competency of change agent. Music administrators ranked the change agent competency as number 20 of 21. It is known that music education is facing funding depletion while curriculum standardization and focus on testing has resulted in reduction of time in the school day for music instruction, yet change agent tied for the lowest mean score of the 21 competencies.

The benefits of strong music and arts programs take longer to manifest than the tenure of an upwardly mobile administrator or elected official. It may be argued that the traditional competencies of educational leadership, as identified by Marzano et al. (2005), are insufficient to assist music administration to reshape the future of music education. It could be that music administrators do not yet recognize their critical role in the change process essential to the survival of music programs as a vital component of a rich and comprehensive educational system.

It is also recommended that the emerging competencies provided by the body of the Texas Music Administrator Conference be valued and utilized. Rather than simply changing the generic title from an existing job description and filling in the title of Fine Arts Director, this list will allow human resource departments and music administrator employment committees to have a better idea of how to (a) create a functional job description and (b) develop pertinent questions to ask when screening and interviewing music administration candidates.

Inside Track: Was the Most Qualified Candidate Hired?

This study did establish that 78% of music administrators have served in a music administration capacity in their current school district only while 22% have served in at least two school districts. Further research could inquire to what extent central office music administrators have been promoted from within their district. This can be juxtaposed with data on whether or not best-practice methods were used to assess the qualifications of the candidates.

Indeed, several of the free responses in the current study indicate that the applicant's competencies were likely already known from experience in previous positions in the district. A study of this kind could begin a research-based conversation about a common question in employment, spe-

cifically public education employment, and through the lens of music administrators: Was the most qualified person for the job actually hired?

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STUDENT ACHIEVEMENT FOR ENGLISH LANGUAGE LEARNERS AND NON-ENGLISH LANGUAGE LEARNERS: DUAL LANGUAGE, TRADITIONAL BILINGUAL, AND ALL ENGLISH PROGRAMS

Shannon Cole, Ed.D.

Year after year students who are labeled limited English proficient (LEP) or English language learners (ELLs) are consistently underperforming in classrooms and on high stakes tests as compared to their peers, with an even wider performance gap when compared to their white peers (Collier & Thomas, 2004; Lindholm-Leary & Block, 2010; National Center for Statistics, 2012a; Texas Education Agency, 2013e).

To quantify the problem, the 2013-2014 Texas Academic Performance Report (TAPR) indicated that 86% of all fifth graders met the established standard on the State of Texas Assessment of Academic Readiness (STAAR) in reading as compared to 72% of ELLs who met standard. In math, 88% of all fifth grade students met the standard and 81% of ELLs met the same standard (Texas Education Agency, 2014b). The performance gaps were more alarming when examining the reported achievement of all students represented in all grade levels during the same year. In reading, 76% of all students met standard on STAAR and 55% of ELLs met the standard. In math, 78% of all students met the established standard for the year as compared to 65% of ELLs (Texas Education Agency, 2014b). The ELL student group equates to 38.2% of a large suburban district's student population and 17.5% of the students in the state (Texas Education Agency, 2014a). This perpetual crisis calls for an evaluation of current programs and best practices as educators seek more effective ways of serving this large population.

Literature Review

There is a plethora of research and political debate regarding the most effective program to support the specific needs of ELLs. The justifications for this research was framed around the desire to better serve the growing ELL population as well as all other children and equip them with language and cognitive skills that would give them choices in a competitive global society. Genesee, Lindholm-Leary, Saunders, and Christian (2006) emphatically stated the critical nature for this research because so much is at stake. "ELLs who had not been in any specialized program but participated in mainstream English classes scored the lowest in comparison to students in any other program and ended their schooling with low levels of achievement" (2006, p. 181). It is evident that English immersion is not the solution for the growing population of ELLs.

There are many types of programs that have been developed with second language acquisition as the goal but not all programs are focused on the maintenance and development of a student's first language. Genesee, Lindholm-Leary, Saunders, and Christian (2005) examined years of empirical research dating back to 1980 and concluded there are many variations of support for ELLs through programs meant to develop their English language proficiency, and in many cases also develop their first language. Through the synthesis of the research, they concluded that ELLs require

some type of support given through a linguistic program to be successful even though the data show that bilingual programs are more effective than ESL (Genesee et al, 2005).

Mora, Wink, and Wink (2001) also examined programs ranging from those that provided English immersion only, transitional bilingual education that provided some instructional support in the native language, and the extreme enrichment additive nature of bilingual two-way dual language immersion. Through their research and the research of many others, they recognized that the goal of a dual language program is bilingualism and enrichment, but also produces higher academic gains for all students who participate in the program.

Collier and Thomas (2004) reported that dual language is the only program that closes the achievement gap for ELLs and is considered enrichment as opposed to remediation because of the intentional benefits built into the program to cultivate two languages (Collier & Thomas, 2004; Estrada, Gomez, & Ruiz-Escalante, 2009; Jong & Howard, 2009). Dual language programs are commonly referred to as enrichment or additive models that respect and cultivate the language minority student's first and second language. Transitional bilingual programs or other models of mainstream bilingual education are recognized as deficiency or subtractive models because the goals of these programs are to eradicate the first language while replacing it with English (Ray, 2009).

There are multiple researchers in the field of bilingual education who are recognized for their research in regard to the benefits of two-way dual language education and have presented longitudinal data that supports the premise that two-way dual language programs effectively close the academic gap of native Spanish speakers in comparison with their English speaking peers (Collier & Thomas, 2004; Lindholm-Leary, 2001; Lindholm-Leary & Block, 2010; Lindholm-Leary & Hernandez, 2011; Sanders, 2010; Thomas & Collier, 2002).

Summary of Study

The study was conducted based on the recommendations from noted researchers and the desire to critically evaluate the two-way dual language program that has been implemented in a north Texas school district for 12 years. With the transition in Texas to a new assessment instrument, there was little research regarding the effectiveness of dual language as measured by STAAR. The setting for the study was a large urban school district, which was located in north Texas between the cities of Dallas and Fort Worth. The district enrollment was 34,961, in 2012-2013 with 81.5% of students identified as economically disadvantaged and 39.4% ELL (Texas Education Agency, 2013d).

The researcher analyzed three years of math and reading STAAR data (2012, 2013, 2014) to determine achievement differences for three student groups at the two campuses where the 50:50 two-way dual language program was offered. The three fifth grade student groups included English language learners (ELLs) participating in dual language, non-English language learners (non-ELLs) also known as the language majority group or native English speakers participating in dual language, and students who receive all instruction in English (monolingual) which also includes a small number of English as a second language (ESL) students.

Data analysis sought to answer the following research questions:

1. Are students who participate in dual language (ELLs and/or non-ELLs) in a large north Texas school district more successful academically in reading and math than their peers who receive all instruction in English as measured by the STAAR test?
2. Are ELLs who participate in dual language more successful in reading and math than ELLs who participate in other bilingual models in a large north Texas school district as measured by the STAAR test?
3. Are non-ELLs (language majority) who participate in dual language in a large north Texas school district more successful in reading and math than non-ELLs in the district who receive all instruction in English as measured by the STAAR test?

Description of the Population

It is imperative to have an understanding of the students in the population of the north Texas school district that included all fifth grade students from the two dual language

campuses in the district who fit the following criteria for inclusion:

1. Dual language students who were enrolled from kindergarten, first, or second grade through the fifth grade at either dual language campus.
2. Monolingual students who were enrolled at the campus during their fifth grade year and enrolled in the district from kindergarten, first, or second grade through fourth grade.
3. Students who fit the previously stated criteria in 1 or 2 and also remained enrolled and were not withdrawn for more than 4 weeks at any time.

After examination of Public Education Information Management System (PEIMS) enrollment records, there were 478 students in reading and 487 students in math who met the criteria for inclusion in the study. For the purpose of the study, the data from Campus A and Campus B were combined based on the three designated groups, and statistical tests were completed for each research question and hypothesis. It should be noted that any student who exited limited English proficient (LEP) previous to the fifth grade was coded as a non-ELL student.

Summary of Findings and Interpretation of Results

The first question asked if there was a statistical difference in STAAR reading and math scale scores between ELLs in dual language, non-ELLs in dual language, and students at the dual language campuses who receive all instruction in English. In 2012 and 2014, non-ELLs achieved a significantly higher STAAR scale score in reading, than those students in all English. Students in all English achieved a significantly higher scale score than ELLs. In 2013 non-ELLs and students in all English achieved a significantly higher scale score than ELLs. There was no significant difference between non-ELLs and those in all English.

For 2012 and 2014 on the math STAAR, non-ELLs performed significantly higher than ELLs and those students in all English where there was no significant difference. The 2013 math STAAR data revealed that ELLs in dual language performed significantly lower than non-ELLs in dual and students in all English where there was no significant difference. After examining all six ANOVA's, non-ELLs were the most successful students on the dual language campuses over ELLs and the students who receive all their instruction in English with the highest mean scale score on the reading and math STAAR test in 2012, 2013, and 2014. In 2012 and 2014 there was a statistically significant difference between ELLs and the all English group. When comparing the three student groups, it was expected by the researcher that the non-ELL group would achieve a higher result than ELLs. The results of the students in all English were helpful in understanding the impact of the dual language program at the two campuses and are reflected in Figure 1.

(See Figure 1 on page 67.)

The second research question sought to determine if there was a statistical difference on STAAR reading and math scale scores between ELLs in dual language in comparison to the local district's mean for students who are enrolled in the district bilingual program. In 2012, there was no significant difference between ELLs and the district mean for students in the district bilingual program. However, in 2013 and 2014, there was a significant difference noted, with ELLs in dual language performing lower than the district mean.

One-sample t-tests were also performed with math data from 2012 where there was a significant difference in STAAR scale scores where ELLs in dual language performed at a higher rate than the district mean. In 2013, students in dual language (ELLs) performed significantly lower than the district mean on the math STAAR and in 2014 there was no significant difference between ELLs and the district mean. The three years of data for the second research question is inconsistent with no identifiable patterns. In addition, the ELL student group from dual language was particularly small leaving questions regarding the validity of the results (Math N= 20, reading N= 24).

The third and final research question sought to compare the differences between non-ELLs in dual language with the district mean of non-ELLs who receive all of their instruction in English as measured by their scale score from the reading and math STAAR. In 2012 and 2014 non-ELLs in dual language achieved a significantly higher scale score in reading and math as compared to the district mean. In 2013,

there was no significant difference between the two groups in reading or math. It should be noted that approximately 1/3 of the non-ELL student group in 2013 were first year monitors from the bilingual program and that generally the non-ELLs achieved at a higher rate than district non-ELLs. This information is reflected in Figure 2.

(See Figure 2 on page 68.)

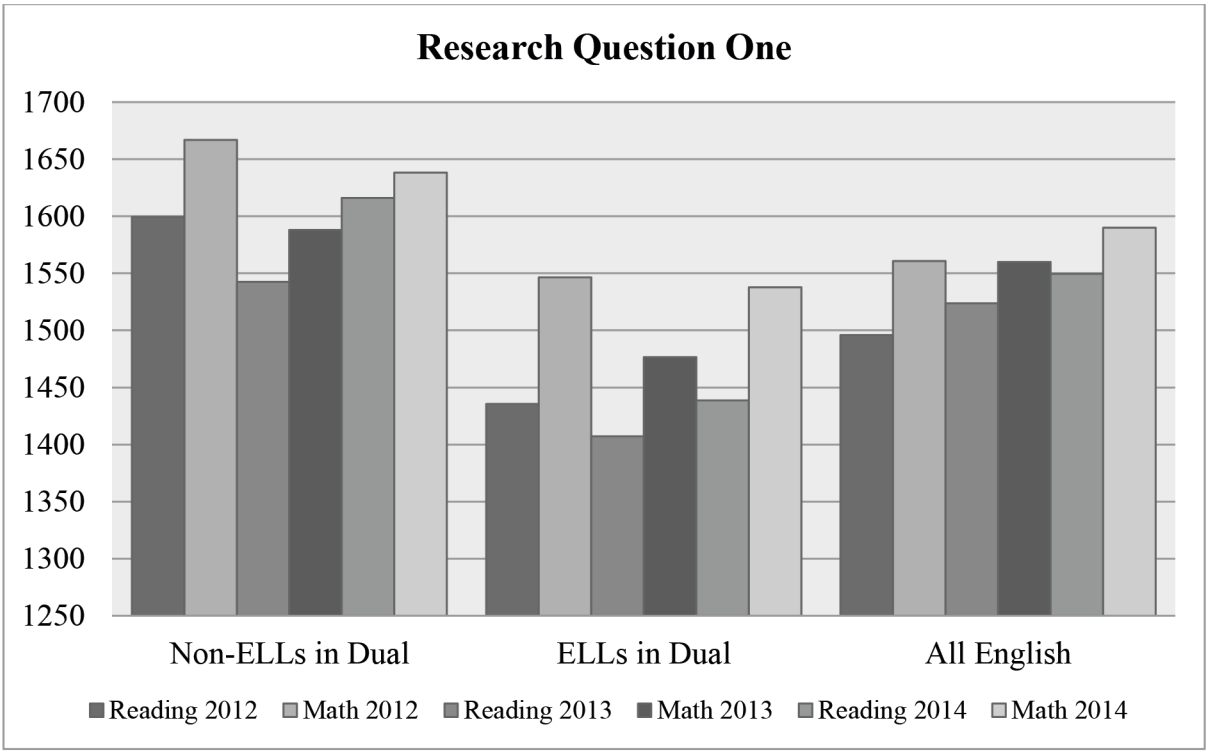

Figure 1. Bar graph representing the mean STAAR reading and math scale scores for statistical tests conducted for research question one.

Implications

The implications of this study and any research that is focused on more effective programs to serve English language learners is valuable. The impetus is on educators and policy makers to find creative and sustainable solutions to meet the needs of this student group. The unique feature of the current study is the use of data from the new Texas assessment instrument (STAAR). The data reported show that students who have participated in dual language and were in the non-ELL student group by fifth grade are more successful than students across the district who participated in monolingual (English only) classrooms. Based on the success of the non-ELL student group in dual language as compared to the other students on the campus and at the district level, the researcher would encourage school leadership to consider the expansion of the dual language two-way program to other campuses that have the demographics to support a 50:50 implementation.

Upon initial examination of the results from the current study, one might infer that ELLs participating in dual language are underperforming. Due to the minimal size of the ELL group, caution should be exercised when assigning weight to the mean scores. It should be noted that by the fifth grade most students who have been in bilingual education from their entry to school, exit the program and are reclassified; therefore, leaving those left in the group representing a very small demographic who have not demonstrated proficiency in English.

Based on the data from the current study, additional research is suggested that focuses on the language majority or English dominant students who participate in dual language as well as students who were previously coded through PEIMS as an ELL but were reclassified based on their level of English acquisition. Additional studies are recommended on a larger scale to fully understand the achievement of these groups as compared to their peers.

Conclusions

The current research study used data from the first three years of the new assessment in the state of Texas (STAAR) making it novel to the many other dual language studies that are available. While the results are valuable in understanding the impact of the dual language program based on one measure of student achievement, it is the hope of the researcher that other measures are used in the future to quantify the success of the students who participate.

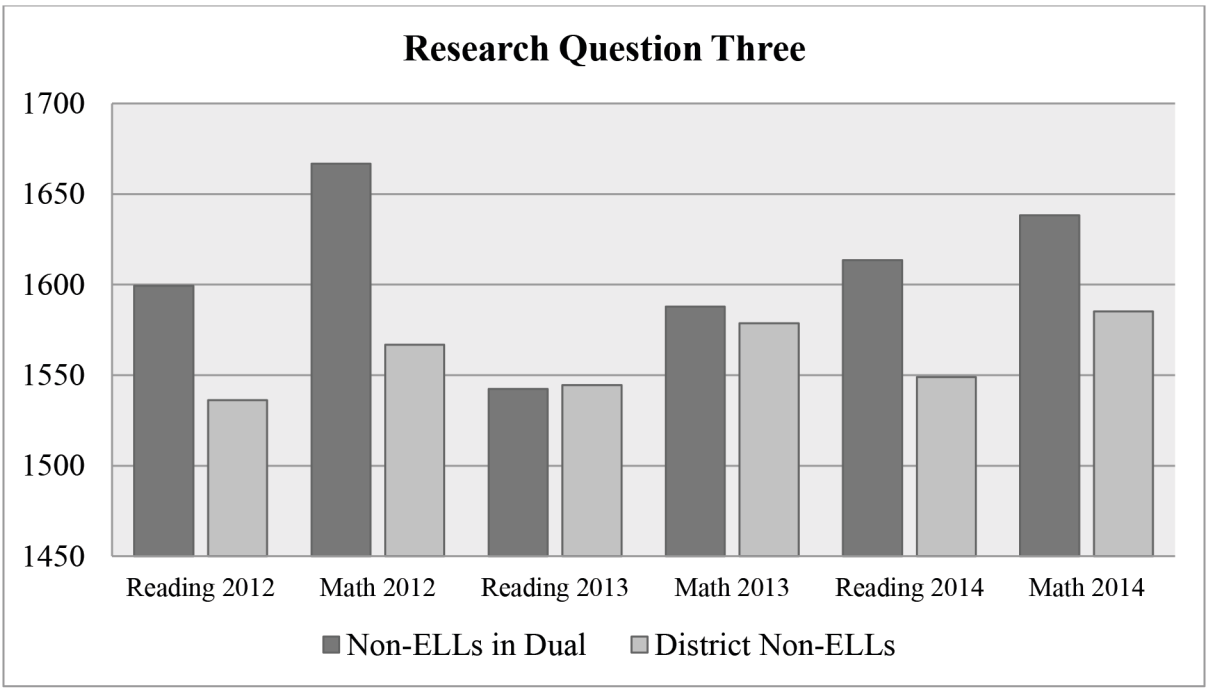

Figure 2. Bar graph representing the mean STAAR reading and math scale scores for statistical tests conducted for research question three.

With high stakes testing and the state and federal accountability system there is an overwhelming urge to abandon the long-term goal of biliteracy for the less noble goal of achieving a passing score on a test. Language acquisition and true biliteracy takes approximately five to seven years and in many cases students in the program appear to be underperforming until approximately fourth grade (Thomas & Collier, 2002). If educators are truly going to be focused on the state's goal of college and career readiness, the researcher believes that the time spent on the front end is well worth the investment so that students are fully prepared to listen, speak, read, write, and collaborate in a multi-cultural world.

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Dr. Shannon Cole is currently the Principal at Silver Lake Elementary in Grapevine-Colleyville ISD. Current or previous positions held include Teacher, Academic Specialist, Assistant Principal, and Adjunct Professor. She holds a Bachelor of Arts from Harding University, a master's degree from Grand Canyon University, and a Doctor of Education in Educational Leadership K-12 from Dallas Baptist University. She can be reached at iamsjcole@aol.com for research inquiries.

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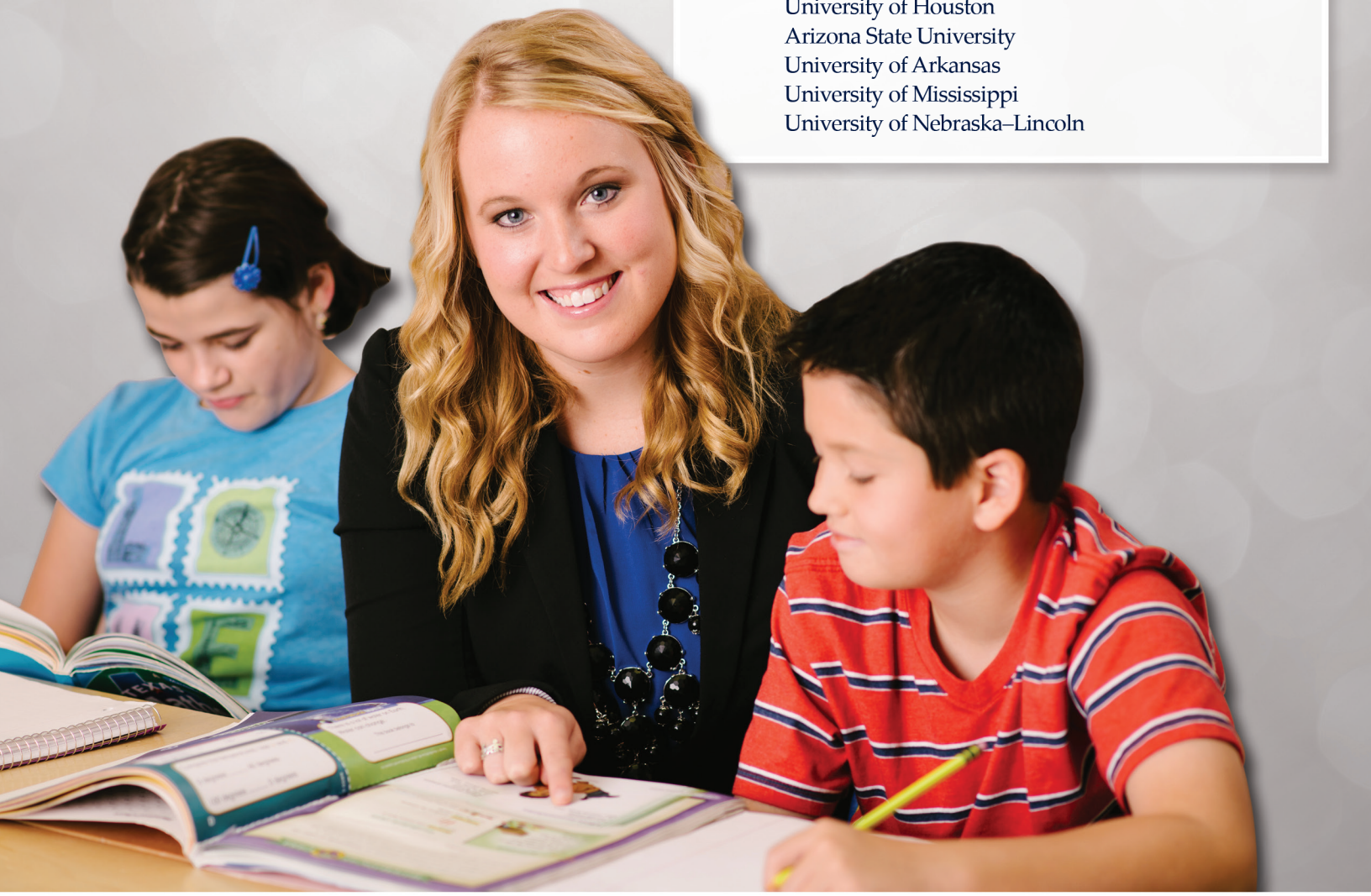

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