A COMPARISON OF TWO SCHOOLS WITH ADDITIONAL

TRAINING IN EVIDENCE-BASED PRACTICES TO TWO

SCHOOLS WITHOUT ADDED TRAINING: EFFECTS,

STUDENT OUTCOMES, AND TEACHER

PERCEPTIONS OF SKILLS AND

PRACTICES

by

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A dissertation submitted to the faculty of
The University of Utah
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Department of Educational Psychology

The University of Utah

August 2011

STATEMENT OF DISSERTATION APPROVAL

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ABSTRACT

Through providing support with training, coaching, and funding, Utah's Academic, Behavior & Coaching Initiative (ABC-UBI) program strives to assist schools with the implementation of evidence-based practices for both positive behavior support as well as academic instruction. As an increasing number of schools participate in the ABC-UBI program, the goal of this study was to determine what kind of a difference ABC-UBI participation makes for student and staff outcomes. Specifically, this study tested for differences in staff perceptions of the Response to Intervention (RTI) model, the degree of school-wide Positive Behavior Support implementation, school climate, and academic outcomes on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and end-of-year Criterion-referenced tests. Of the 17 areas measured, ABC-UBI schools performed better than non-ABC-UBI schools in 16 areas. With sample sizes of only 2 in each group, statistical significance was nearly impossible to attain, but in spite of limited statistical significance, ABC-UBI participation resulted in large effect sizes. Future directions for research and practice are discussed herein.

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ACKNOWLEDGMENTS

I would like to sincerely thank my project advisor and committee chair, Lora Tuesday Heathfield. No matter what problems occurred along the way with the study, I always knew you were my advocate and that you had my best interest at heart. Thank you for your student-first attitude in all you do as a professor. Your approachable and easy going nature will be a guide for me as a professional in years to come. It was nothing but a pleasure to work with you from the very conceptualization of this project through the end.

Thank you to Lowell Oswald, Heidi Mucha, and the wonderful professionals at the Utah Personnel Development Center for always being available with data and other insight to help this project along the way.

This study would not have been possible without the willingness of four principals and many more teachers to participate in this study. I asked a lot of you, and you willingly accepted despite having no time to complete everything else asked of you. I cannot thank you enough.

To Jamie, my best friend-turned-wife, thank you for helping me find my way into this field in the first place. What started as nothing but crazy talk between two kids on a date ended up as applying for graduate school and ultimately this project. Who would have thought? You deserve this, Jamie. You took all of this head on, talking me through my own neurosis, encouraging me to continue when I wanted to quit, and proof reading

endless drafts of this manuscript. You are the best person I know, and I will always look up to you.

Finally, to my mom: thank you for showing me the importance of education from a very young age. You might have thought I was too young to notice that you were commuting three hours a day to and from your university, leaving before I was awake, but still making sure breakfast was waiting for me when I got up, finding time to help me with my homework while highlighting your own textbooks, and staying up all night studying with four children at home. I wasn't too young to notice. I will never forget it. I will always appreciate it and admire you for all you did for me then and all you do now. Though I could never repay you, I hope this dissertation can in some way act as an additional fruit of your labor during those difficult times. I love you, mom. This is for you.

CHAPTER 1

REVIEW OF LITERATURE

It is generally accepted that educators strive to provide the best education possible

to their students. With the implementation of the No Child Left Behind Act (NCLB) in

2002 (U.S. Department of Education, 2002), providing the best education possible

became a national mandate, with the intent of holding teachers accountable for student

achievement. Because educators often lack the knowledge of and access to the best

resources available, their best efforts and NCLB accountability may not be enough to

provide students with the education that will place them in the best position to succeed.

Recognizing this dilemma, many state offices of education acquired additional funding

through federal grants to help educators and students gain access to the best possible

resources and practices.

With increased time, funding, and professional development offered by these

grant-funded programs, one would expect schools that participate in such programs to

have students who have higher academic achievement, and are therefore more likely to

meet NCLB requirements. Furthermore, schools participating in such programs should

theoretically implement more of the latest research regarding educational best practices

and demonstrate more positive outcomes for their students.

This study is designed to test the hypothesis that schools in Utah that received

additional assistance from grant-funded initiatives would show positive differences from

schools that did not receive such support in the above-mentioned outcome areas. Specifically, it is hypothesized that Utah schools that received this funding and technical assistance would have higher academic outcomes for students as measured by criterion- and norm-referenced measures. These schools also should likely show greater awareness of and implementation of evidence-based practices such as components of a Response to Intervention (RTI) model, including curriculum-based assessment and measurement with fidelity for benchmarking and progress monitoring, school-wide positive behavior supports, along with additional prosocial school-wide behavior that leads to a more positive school climate.

The Utah Personnel Development Center (UPDC) is a staff development program sponsored by the Utah Comprehensive System for Personnel Development that is designed to enhance educational outcomes for students in the state of Utah. Through a variety of initiatives, the UPDC endeavors to facilitate positive outcomes for students with and without disabilities through professional development of educators and parents. The UPDC collaborates with state and local service providers to offer effective professional development to Local Education Authorities (or districts). This is accomplished through the technical assistance of facilitators, coaches, and researchers who provide a link between the latest education research and practical applications in schools (UPDC, 2010a).

Because their focus is to improve outcomes for students, the UPDC has specifically developed and partially funded the Academic, Behavior, and Coaching Initiative (ABC-UBI) to help meet this need. Committed to the implementation of effective behavior and academic support systems in Utah schools, ABC-UBI strives to

match instruction to student needs for improved student outcomes. The primary goal of ABC-UBI is to provide support to participating schools through coaching, supplemental funding, and training (UPDC, 2010b).

Originally called the Utah Behavior Initiative (UBI), the ABC-UBI program began in 2002 with a strict focus on behavioral interventions at the systems level using Positive Behavior Supports (PBS) as its foundation. The UBI project grew and gained support across districts within the state, thereby becoming a state initiative in 2005 that is implemented on a district level. UBI was overseen and supervised by trained district "coaches" under the direction of UPDC personnel. UBI eventually began to include academics in its focus, which led to a name change to the Academic, Behavior, and Coaching Initiative (ABC-UBI) in the 2007-2008 school year.

To become an "ABC-UBI" participating school, a school must apply to their home district using an application from the ABC-UBI website (UPDC, 2010b). That school's district makes the final decision of acceptance based on whether the applying school can meet the demands placed on it by the ABC-UBI team, a team of external consultants employed by the UPDC. If approved, the district then submits the school to the ABC-UBI team for final consideration. Selected schools receive training, supplemental funding, and support from ABC-UBI with the goal of slowly fading their support as school staff become proficient with the components taught and endorsed by the ABC-UBI team. Currently, there are more than 100 ABC-UBI schools that have either completed or are participating in the ABC-UBI training across 16 of the 41 school districts in Utah, plus an additional 2 charter schools. These schools make up approximately 12% of all the schools in the state of Utah. With those schools across

Utah participating in the program, ABC-UBI attempts to enhance education in several areas, including school-wide academic success, response to intervention awareness and readiness, and school-wide positive behavior support, which ultimately might also have a secondary effect in creating a positive school climate.

School-Wide Academic Success

School-wide academic success has always been an essential focus of education, but teacher accountability for student success added to that focus with the signing of the No Child Left Behind Act in 2002. In 2000, the then President of the United States, George W. Bush, acknowledged the overall declining trend in U.S. student achievement and the significant discrepancy of minority and lower SES student achievement when compared to their peers. With the goal of closing that gap and raising U.S. student achievement by holding teachers more accountable, President Bush described NCLB as "the cornerstone of [his] Administration" (U.S. Department of Education, 2002, par. 1). NCLB was signed into law in 2002 in an effort to increase school quality and performance (U.S. Department of Education, 2005) by requiring higher standards and increased accountability for student performance (U.S. Department of Education, 2004).

Teacher accountability is the basis of NCLB, so this legislation made it imperative for states to track and monitor student academic progress. Under NCLB, the progress of schools and districts is measured by Adequate Yearly Progress (AYP), the minimum level of improvement that must be achieved to accomplish the ultimate goal of 100% proficiency, or having every student achieving at grade level. States are responsible for determining annual targets to accomplish 100% proficiency in reading, math, and science by 2014 (Fuchs & Fuchs, 2004). If individual schools do not reach

AYP each year, they are held accountable with reductions in funding or other corrective actions from the U.S. Office of Education (The Education Trust, 2004).

NCLB legislation has received some criticism for its lack of effectiveness. Though academic proficiency continues to rise each year, a study comparing scaled scores provided by the National Assessment of Educational Progress (NAEP) found that there were no significant differences between trend lines before and after the NCLB legislation (Lee, 2006).

The trend in Language Arts and Math scores since 2003 has remained relatively consistent across the state of Utah despite the shift in the focus of ABC-UBI to include academics in the 2007-2008 school year. The Utah State Office of Education tracks the trends in the percentage of students scoring at the 'sufficient' level in Language Arts and Math since the 2003-2004 school year (Utah State Office of Education, 2009b; see Figure 1). With ABC-UBI continuing to expand to include more schools, and focus on the latest research regarding evidence-based practices, ABC-UBI intends to have a large enough impact to push the trend line in the positive direction statewide.

<center>Criterion-Referenced Testing</center>

To monitor achievement and ensure that each school meets AYP, states have developed accountability systems involving exams that test for grade level mastery across core subjects (The Education Trust, 2004). Forty-three states currently use Criterion-Referenced Tests (CRTs) to monitor student achievement and AYP (National Center for Education Statistics, 2006).

CRTs focus specifically on determining the level that a student has achieved academically, placing the academic performance of a student along a continuum of
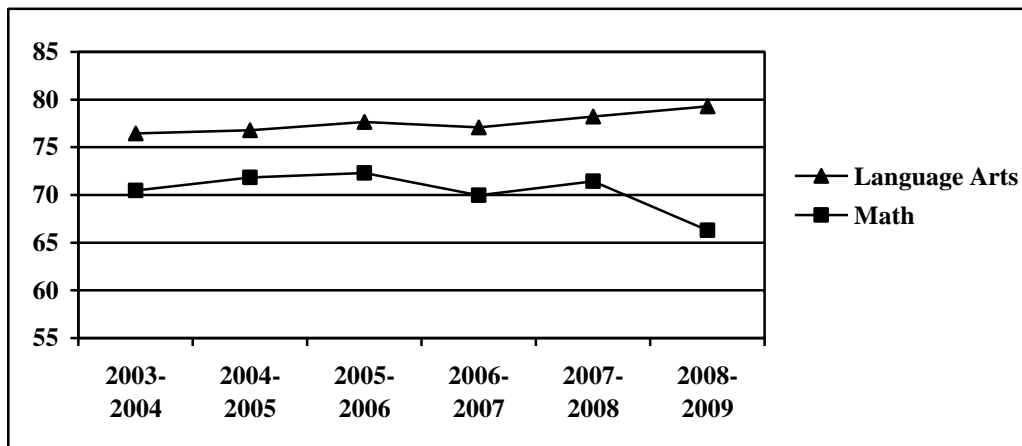
Figure 1. Trends in Percentages of 'Sufficient' Scores on CRT

achievement ranging from no proficiency to mastery (Wixson & Carlisle, 2005). Scores

reported from criterion-referenced tests give an indication of how well students are

performing relative to a predetermined performance level on a particular set of

educational goals or outcomes specific to the school, district, or state curriculum (Bond,

1996).

To track AYP for NCLB in Utah, students are required to take CRTs for

Language Arts, Math, and Science at the end of each school year. These can be grade-

specific or course-specific, as elementary students take CRTs specific to their grade (e.g.,

third-grade students take third-grade Math CRTs), and secondary students take CRTs

specific to their course (e.g., students enrolled in Biology take Biology CRTs) (Utah State

Office of Education, 2006). According to the National Center for Education Statistics

(2010), Utah assesses AYP solely by means of CRTs, generating four levels of

proficiency: Level 1 (minimal), Level 2 (partial), Level 3 (sufficient), and Level 4

(substantial). In the 2009-2010 school year, 80% of Utah schools (for grades 3-8) tested

in the sufficient or substantial levels in Language Arts and 73% in Mathematics (Utah State Office of Education, 2010).

As NCLB requires 100% of students to be proficient by 2014, all states are required to set escalating targets called Annual Measurable Objectives (AMO) for Language Arts and Mathematics. The required AMO in the state of Utah for 2009 and 2010 are that 83% of third- through eighth-grade students must be proficient in Language Arts, and 45% must be proficient in Mathematics. Utah requires that 82% of tenth-grade students be proficient in Language Arts, and 40% be proficient in Mathematics in 2009 and 2010. Finally, 40% of eleventh- and twelfth-grade students must be proficient in Mathematics in 2009 and 2010. There are no Language Arts AMO for eleventh- and twelfth-graders, as they do not take CRTs in that subject (Utah State Office of Education, n.d.). In Utah, all students take the same CRTs relative to their grade level, so all students are held to the same standard with the same CRT cutoff scores.

<div align="center">Importance of Early Reading Instruction</div>

Because the NCLB places particular importance and emphasis on reading proficiency, the mandate asserts that every child should read at grade level by the end of their third-grade year. Hence, ABC-UBI also makes early reading instruction a primary focus of their technical assistance to schools. This emphasis on early reading instruction for children recognizes that when children move further through the educational system, they will have more difficultly attaining grade level achievement if they struggle with basic reading skills (U.S. Department of Education, 2002).

A 1998 study highlighting the need to focus on early reading intervention reported that in the U.S., 37% of all fourth-graders and 60% of minority fourth-graders read below

grade level. The researchers also found that if reading interventions were not provided for at-risk readers by 9 years of age, those students were likely to continue having difficulties in later grades (Lyon, 1998). Torgeson (1998) supported Lyon's research, finding that reading difficulties become increasingly problematic and prolific over time. Most children who struggle with reading in early grades will experience more problems in later grades if an effective instructional intervention is not put into place (Scarborough, 1998). An oft-replicated and two-decade-old longitudinal study of reading instruction highlighted the need for early intervention. After following over 50 students from first-through fourth-grades, the researcher drew a similar unfortunate conclusion, finding that students with deficits in reading skills in the lower elementary grades were likely to have reading deficits later (Juel, 1988). Moreover, some research has suggested that reading interventions are most effective when implemented before overt manifestations of reading disabilities arise in young students (Satz & Fletcher, 1988).

More recent research draws similar conclusions to the older research on early reading intervention. One study found that the younger at-risk readers can be identified, the more effective interventions can be at catching them up to grade level (Blachman et al., 2004). Furthermore, when schools implement preventative instructional interventions, there are strong positive effects on outcomes. One study intervened with at-risk readers in first-, second-, and third-grades for a 16-week period. The study found the intervention to have larger effect sizes for first-graders than for second- and third-graders (Denton, Fletcher, Anthony, & Francis, 2006). Wanzek and Vaughn (2007) synthesized studies on early reading instruction and found that effect sizes of reading

interventions were significantly larger when done with kindergarten or first-grade students as opposed to upper elementary grades.

It is imperative to identify at-risk readers early by conducting early and frequent assessment, or curriculum-based measurement (CBM). When results from these assessments are used to guide classroom instruction, students learn more effectively as teachers are more aware of and consequently more able to adapt to specific student needs (Wren, 2004). CBM provides a means to monitor and track student progress on skills pulled directly from the curriculum to assess growth. It can also assist in determining when and how to modify the curriculum and the delivery of instruction (Deno, 1985). Progress monitoring can be used as benchmarking or screening for at-risk readers, or it can be used as continuous assessment on a weekly or even daily basis to assess the degree to which a student responds to the specific intervention being implemented. Implementing CBM with at-risk readers along with interventions to provide frequent checks on student progress has been shown to be effective in monitoring progress over time. Along with assisting teachers in adapting instructional methods, consistent progress monitoring also provides observable and measurable student growth data (Christ, Silberglitt, Yeo, & Cormier, 2010).

The goal of CBM is to help teachers track the progress of at-risk students as interventions are implemented. Tracking student progress using CBM, however, is a small piece of a larger puzzle in assisting at-risk students. Teachers must accurately identify, assess, and intervene with at-risk students. Ideally, when students fall behind academically, skilled teachers put intensive interventions into place, specific to the student's needs. Teachers must assess the academic level to provide interventions that

are not so difficult that the students become frustrated, yet not so easy that the students are not challenged. Teachers must track student response to intervention over multiple data points, changing their interventions when necessary to meet each student's individual needs. This larger-scale model of which CBM is a piece is called Response to Intervention (RTI) (Fletcher et al., 1998).

<p align="center">Response to Intervention</p>

A Brief History

RTI is a relatively new model used to identify and intervene with academically at-risk students early. As recently as 2003, before the Individuals with Disabilities Act of 1997 (IDEA, 1997) was restructured, a primary focus for assisting academically at-risk students was by determining eligibility via various classifications, such as Specific Learning Disability, in order to qualify them for special education services. While the IDEA 97 legislation was progressive in emphasizing the need to provide struggling students with additional support through special education services (Prasse, 2002), it received some criticism for requiring students to meet eligibility criteria before receiving services rather than intervening early in a preventative attempt to help struggling students catch up to grade level before they fell significantly behind (Fletcher et al., 1998; MacMillan, Gresham, & Bocian, 1998). Under IDEA 97, by the time many students displayed the significant academic gaps needed to qualify for additional services, they were often in upper elementary grades, and sometimes too far behind to catch up to their same-grade peers (Gresham, 2001; Reschly & Ysseldyke, 2002; Vellutino, Scanlon, & Lyon, 2000).

Eventually, these research-based criticisms led to significant changes in the law with the reauthorization of IDEA 97. In 2004, IDEA 97 was restructured to focus more on early intervention and prevention. Changing its name to the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA 2004), under this new legislation, the local education agency was no longer required to use standardized tests to assess for significant achievement gaps. Rather, they could use RTI to intervene early with academically or socially at-risk students and determine whether a student responded to scientific and research-based interventions and instruction. Though RTI is designed to occur within the regular education paradigm and was informally implemented by many educators before IDEIA 2004, the legislation brought the model into light, increasing research on and the adoption of RTI in regular education classrooms (Wedl, 2005).

Response to Intervention as a Prevention Model

RTI models are based on a tiered system of intervention, most commonly a 3-tier system. In the area of reading for example, at the first tier the regular education teacher teaches the components of reading to the whole class as part of a high-quality reading curriculum to prevent reading problems. Student learning is tracked with the entire class. While most students respond positively to the general curriculum, some students need additional support at the second tier. At the second tier, students are usually divided into smaller groups and receive supplemental instruction and intervention. At tier 2, student progress is monitored more frequently—usually weekly, to determine growth, or responsiveness to the intervention. If progress monitoring does not reveal an upward trend of student reading ability, the at-risk reader receives instruction at tier 3. The third tier involves one-on-one or small-group instruction usually outside of the regular

education classroom geared toward the pace and style needed for each individual student. Weekly progress monitoring continues at the third tier as interventions are implemented to track reading improvement (Mellard, Byrd, Johnson, Tollefson, & Boesche, 2004).

The frequent progress monitoring inherent in the RTI model provides teachers with the necessary information to identify student needs early, opening the door for earlier intervention. With this model, students are identified based on early risk rather than waiting for a deficit to emerge. Using RTI and progress monitoring, student risk can be identified before it becomes a deficit (Vaughn & Fuchs, 2003).

Implementing Response to Intervention

As RTI becomes more widely accepted and used, research continues to emerge outlining the steps for its effective implementation. Effective application of RTI includes several critical steps, which are curriculum-specific and focused on early detection and intervention (Gresham, 2001).

The first step is using Curriculum-Based Assessment (CBA), a method to determine the specific instructional needs of the student. CBA is based on direct observation, assessment, and student performance specific to the curriculum covered in that student's classroom. A screening tool used for continuous assessment and early detection of academic difficulties, CBA is effective for detecting students who are not responding to the general curriculum instruction (Deno, 1985).

Within the RTI model, once the CBA process detects a low performing student, the teacher provides increased or modified instruction in smaller group settings. Assessing the student's needs, the teacher designs and implements a more intensive intervention drawn from class curriculum, tracking that student's progress to determine

whether the student responds to the intervention put into place. This tracking process is the second step in RTI implementation using Curriculum-Based Measurement (CBM). CBM is designed to measure student learning over time, considered critical to effective RTI implementation. Material for CBM is ideally drawn from class curriculum and is administered weekly while the struggling student receives the specified intervention. As CBM data are collected, teachers can see how their students are responding to their interventions and can thus appropriately adjust their instruction and curriculum to specific student needs as necessary (Fuchs, Fuchs, & Compton, 2004).

CBM has a solid foundation in the education literature. Espin and Wallace found that more than 300 studies had been published supporting CBM and establishing its effectiveness and utility in 2004 (as cited in Fuchs, 2004). Research has shown CBM to be a reliable and valid measurement system that is often used for progress monitoring in academic skill areas such as reading proficiency and math fluency (Deno, 1985). CBM has particular utility to teachers because the measures do not have to be norm-referenced (Fuchs et al., 2004). It is advantageous to educators to utilize CBM rather than norm-referenced testing because CBM can be administered more quickly than norm-referenced tests and with less expense and training. Furthermore, CBM is ideally taken directly from the curriculum, making it more effective at identifying an individual student's strengths and weakness related to their specific classroom curriculum.

Benchmarking

In their guide to assist schools in implementing reading RTI, Simmons et al. (2000) discussed the signature attributes needed for a prevention-oriented system. One such attribute is the ability to predict reading success and deficits early in order to

intervene with more intensive instruction responsively. Torgeson (2002) agreed, asserting that schools must have an assessment system in place to detect reading difficulty early to prevent reading risk from developing into ensconced "reading failure" (p. 7). Such an assessment system must document a student's progression toward meaningful outcomes while also reliably and validly measuring growth and learning (Good, Simmons, & Kame'enui, 2001).

The most effective and efficient means for assessing student growth and learning is by frequently evaluating all students with standardized assessment tools consisting of grade-level material. These screenings are called benchmarks. Benchmarking occurs at specific points throughout the school year, usually tri-annually, at the beginning, middle, and at the end of the school year. The purpose of benchmarking is to assess student performance, providing a reference point for comparing student achievement to grade-expected criteria (Good et al., 2001).

Benchmarks are standards from which normative and criterion-referenced data may be obtained. CBA benchmark assessments designate performance levels that predict skill mastery. During benchmarking, students are assessed and compared with a norm-referenced population to determine whether they are at, above, or below grade level compared with same-age peers in the specific subject assessed (Good et al., 2001).

Benchmark cut-offs are generally determined by using the 50th percentile of scores from a norm-referenced group, setting that score as the standard. For example, if benchmarking for oral reading fluency, the 50th percentile of a normative sample for correct words read per minute on grade-level passages would determine the benchmark (Hasbrouck & Tindal, 1992). These normative benchmarks may be nationally-based,

state-based, or district-based; and with the advent of NCLB legislation, many schools now use benchmarking to track school-wide academic performance (Olson, 2005). If a student does not test at or above benchmarking levels, he or she becomes a candidate for more specialized instruction and interventions in hopes of achieving grade level skill mastery (Fuchs et al., 2004).

Good et al. (2001) caution against normative expectations, however, because they may not necessarily correspond to the desired outcomes. Even if the predetermined level of performance is based on normative samples, those scores could still fall below the level of skill that may be desired by parents and educators. Furthermore, the researchers argue that if the interventions work, and student scores increase, the normative-based targets will also rise, meaning that 50% of children will always fall below the middle performance and be considered as at-risk.

Programs for Curriculum-Based Measurement

There are many CBM programs available to educators in core subjects for progress monitoring and collecting benchmark data within an RTI model. One commonly used program for CBM is called AIMSweb. This program is a web-based benchmark and progress monitoring system that focuses on direct, frequent, and continuous student assessment. Along with benchmark and progress monitoring measurement probes, AIMSweb also provides web-based data management and reporting, and it makes progress monitoring and benchmark results available to the student and his or her parents, teachers, and administrators. AIMSweb strives to provide all the comprehensive needs that come with RTI implementation in reading, math, spelling, written expression, and even behavior. Specifically, AIMSweb offers services

for benchmarking and monitoring the progress of second- and third- tier students, as well as writing specific student goals. Educators can use AIMSweb for a nominal yearly fee per student (http://www.aimsweb.com).

Another common CBM program is Easy CBM. Easy CBM is a comprehensive program to assist teachers in every aspect of CBM. The internet-based program walks teachers through the step-by-step process of collecting and entering data. The teacher can select from a variety of measures as rudimentary as letter naming and letter sounds to passage comprehension and oral reading fluency. The teacher can print the measures if they do not wish for students to be tested on the computer. Teachers then can enter student scores directly into the website, and the website automatically generates individual and class-comparison graphs. Complete individual student reports are available for easy sharing with parents and other educators at no cost (www.easycbm.com).

A third resource for CBM is the Curriculum-Based Measurement in Reading (CBM-R) program. This is a manualized program on which prospective testers must be trained. Passages provided by CBM-R can be used as quick probes for curriculum-based assessment or for progress monitoring. With CBM-R, students are presented with a grade-level passage and are given 1 minute to read it. CBM-R is a unique program because along with oral reading fluency, it also assesses and monitors reading comprehension. With 30 separate passages per grade level, CBM-R is a useful tool for teachers for long-term data collection. CBM-R materials are purchased in full grade packets that contain 30 passages. There are no continuing costs to implement the program (Silberglitt & Hintze, 2005).

Dynamic Indicators of Basic Early Literacy Skills (DIBELS)

Perhaps the most frequently used CBM measure specifically for reading, and the

program used by the district in which this study took place, is the Dynamic Indicators of

Basic Early Literacy Skills program (DIBELS). DIBELS is a standardized, individually

administered formative assessment for students in grades K − 6 that provides baseline and

benchmark data to assist teachers in changing or supplementing reading curriculum and

designing interventions (Good & Kaminski, 2002). On their website, the developers

state:

> The measures were developed to assess student development of phonological
> awareness, alphabetic understanding, accuracy and fluency reading connected
> text, vocabulary and comprehension. Each measure has been thoroughly
> researched and demonstrated to be a reliable and valid indicator of early literacy
> development. When used as recommended, the results can be used to evaluate
> individual student development toward validated instructional objectives as well
> as provide feedback on effectiveness of intervention
> support (Good & Kaminski, n.d.).

DIBELS has several subscales based on grade level mastery. These subscales

examine initial sound fluency, letter naming fluency, phoneme segmentation fluency,

nonsense word fluency, and oral reading fluency. Students are assessed on these

subscales with individual testing booklets for each grade level K-6. DIBELS does not

assess oral reading fluency (ORF) until midyear for first-grade students, focusing instead

on basic reading strategies such as letter naming and phoneme segmentation until mid-

year first-grade. From second- through sixth-grade, students are assessed strictly on the

ORF and story-retell subscales. Students who read below grade level are assessed at a

lower level appropriate for their reading ability and ideally make sufficient progress with

interventions until they reach grade level proficiency (Good & Kaminski, 2002).

Extensive research shows ORF scores to be predictive of outcomes on high-stakes and state assessment tests such as CRTs (Good et al., 2001). Shaw and Shaw (2002) found that DIBELS ORF scores were strong predictors ($r = .80$) of test performance on the Colorado State Assessment Program with third-grade students. Buck and Torgeson (2003) reported a .7 correlation between DIBELS ORF scores and the reading scores on the Florida Comprehensive Assessment Test-Sunshine State Standards. Similarly, Vander Meer, Lentz, and Stollar (2005) investigated student performance on DIBELS progress monitoring passages in comparison to performance on the Ohio Proficiency Test in Reading and found a significant correlation ($r=.65$). A study in the state of Utah found a correlation between DIBELS ORF and English Language Arts CRTs for English Language Learners ranging from .73 for fifth-grade students to .80 for fourth-grade students (Richardson, 2009).

DIBELS has also been established as a valid and reliable measure. In using DIBELS to assess kindergarteners, Elliott, Lee, and Tollefson (2001) found high inter-rater reliability ($r=.89$) and high test-retest reliability ($r=.93$). They also reported high concurrent validity with the Woodcock-Johnson Psychoeducational Achievement Battery-Revised Skills Cluster ($r=.81$). Hintze, Ryan, and Stoner (2003) compared DIBELS scores of kindergarteners to composite scores on the Comprehensive Test of Phonological Processing (CTOPP) and found DIBELS to be a valid measure for screening, though it had limited sensitivity with younger grades. With substantial research supporting the high reliability and predictive validity of DIBELS ORF (Goffreda, DiPerna, & Pedersen, 2009), the ABC-UBI project supports and trains schools in implementing the DIBELS program school-wide to monitor reading performance.

Response to Intervention (RTI) Awareness

        With a field of growing research for RTI program components such as DIBELS, the ABC-UBI project has made it a priority to assist schools with implementing systems-wide RTI models. Since effective implementation of RTI is dependent on team collaboration and a consultation model (Ikeda, Tilly, Stumme, Volmer, & Allison, 1996), it is imperative that school staff, including administrators, teachers, and reading coaches, understand the model and the steps necessary to implement RTI effectively.

        If operating under the discrepancy model, the special education team historically depends solely on the school psychologist and special education teacher to provide the necessary assessment to qualify students for special education services. Under the RTI model, however, a team consultation model is utilized. Burns, Vanderwood, and Ruby (2005) concluded that RTI team members should include a special educator, a school psychologist, at least one general education teacher, and at least one administrator, as studies have shown that principals themselves are crucial team members (Kovaleski, 2002) for acceptance of the process (Kruger, Struzziero, Watts, & Vacca, 1995). When these team members operate using evidence-based practices and are trained to provide consistent and effective consultation, effect sizes are more than twice the size of teams that are not adequately trained and thus provide inconsistent services (Burns et al., 2005). Since lack of treatment fidelity and lack of training are cited as the primary concern for problem-solving teams, appropriate staff training is essential to implementing a successful RTI model (Buck, Polloway, Smith-Thomas, & Cook, 2003).

        Recognizing the importance of team preparedness for the implementation of RTI, Wright (2006) developed a Response-to-Intervention School Readiness Survey. This

survey is an informal measure designed to help schools identify the areas of RTI implementation in which they are competent and the areas in which they may need additional support. The survey can be used by individual schools for self-evaluation or by districts to determine the needs of specific schools. This survey does not purport to be a predictor of successful RTI implementation. Rather, it is an informal method of assessment to determine school preparation for the RTI model.

Several RTI checklists also have been developed by The Florida Project (2008). Similar to Utah's ABC-UBI program, The Florida Project focuses on providing statewide professional development and technical assistance to Florida school districts engaged in or wishing to initiate RTI projects. The Florida Project also resembles ABC-UBI in its concentration on providing support, training, and on-site coaching to participating districts. Involving researchers from the University of Florida, The Florida Project has developed four RTI surveys to assist teams in the implementation of RTI. Each survey has a different focus for assessing staff RTI readiness and awareness. The topics addressed by The Florida Project surveys are the following: (1) staff beliefs and attitude toward RTI, (2) staff perceptions of RTI practices in their school, (3) staff perceptions of their own RTI skills, and (4) coaching evaluation or staff satisfaction with school personnel in regard to RTI training and implementation. Each item on The Florida Project surveys is scored on a 5-point Likert scale, and the number of items on each survey ranges from 18 to 25, requiring approximately 15 minutes each to complete (Castillo et al., 2010).

School-Wide Assessment of Behavior

School-Wide Positive Behavior Support

While ABC-UBI strives to assist schools in meeting the academic demands of

NCLB, their efforts can be seriously limited if teachers spend their time intervening with

disruptive students. An effective practice for encouraging and reinforcing positive

behavior is implemented at the school-wide level. This effort is accomplished through

School-Wide Positive Behavior Support (PBS), a tiered system similar to RTI. When

used together, the combination of RTI and PBS provides effective instructional strategies

for both academic and behavior systems. RTI and PBS are both grounded in the same

principles of high expectations, universal screening, collaborative and team-based

approach, multitiered application, continuous progress monitoring, and parent

involvement (OSEP Technical Assistance Center on Positive Behavioral Interventions &

Supports, 2010).

For nearly two decades, PBS has been established as an effective approach to

teach and encourage positive and prosocial behavior (Colvin, Kame'enui, & Sugai, 1993;

Handler et al., 2007; Sugai & Horner, 2006). Defined by Sugai and Horner et al. (2000),

PBS is "a broad range of systemic and individualized strategies for achieving important

social and learning outcomes while preventing problem behaviors in all students" (p.

132). With PBS, the focus is on teaching and encouraging prosocial behaviors rather

than intervening after problems behaviors occur (Carr et al., 1999). PBS has shown to be

effective with individuals as well as whole-school populations in that it enhances the

learning environment for individual students with behavior concerns while limiting the

disruptions of those individuals on the overall classroom and school environment (Sugai, 2003; Walker, Ramsey, & Gresham, 2005).

Warren et al. (2006) conducted a study to determine the effectiveness of PBS in improving school-wide behavior. The researchers implemented PBS in an urban middle school. As a first step, the researchers assisted the faculty in developing positive, observable, and measurable student expectations. Next, the researchers assisted all teachers in developing lesson plans to teach the expected student behavior. For example, many teachers opted to frequently practice walking respectfully and safely in the hallways. Along with teaching students desired behaviors, teachers rewarded students with "positive behavior referrals" or tickets (p. 192). These tickets could be turned in for drawings and specific prizes, including stuffed animals, school supplies, and extra gym time. A trophy case in a high-traffic area displayed pictures of students who received rewards. While this PBS implementation occurred school wide, the researchers continued to train teachers to implement PBS in the classroom through altering the classroom environment when needed, understanding the function of student behavior, and reinforcing positive behavior for specific students.

After 1 year of implementation, the targeted middle school experienced a 20% decrease in office discipline referrals, a 17% reduction of in-school conferences with students (discussing problem behavior with the student and developing goals for improvement), a 23% decrease in time-outs (student sent to office for a short period of time—not necessarily to talk with the principal), and a 57% decrease in short-term suspensions (Warren et al., 2006).

As noted by Sugai (2003) and Walker et al. (2005), effective implementation of PBS can also enhance the learning environment in such a way that overall student academic achievement actually increases. In one study, researchers assessed student academic performance after implementing PBS at a Midwest elementary school using a nationally norm-referenced standardized test that is administered by public school districts throughout the United States. After just 1 year of PBS implementation, students showed an increase in both reading comprehension and mathematics, increasing average percentile ranks by 18 and 25 percentile points, respectively (Luiselli, Putnam, Handler, & Feinberg, 2005).

To help educators enhance the learning and school environment, Lewis and Sugai (1999) isolated four critical elements of effective implementation of PBS including the following: (1) definition and teaching of behavior expectations, (2) establishment of reinforcement systems for appropriate behavior, (3) utilization of data in order to monitor and adjust the system as needed, and (4) implementation of a three-tiered support system similar to that of RTI for individuals, small groups, and the school as a whole.

Implementation of PBS at a systems level utilizes a 3-tiered approach with the ultimate goal of reducing problem behaviors, and consequently, increasing academic outcomes and overall school climate. Those tiers are referred to as the primary, secondary, and tertiary levels. Moving through the levels from primary to tertiary involves increasing the intensity and focus of interventions within each level (Lewis & Sugai, 1999; Sugai, 2003).

Tier 1 of PBS, the primary level, includes the entire school with strategies that are preventative in nature such as a school-wide bullying program wherein all students

participate and are reinforced for appropriate, nonbullying behaviors. Similar to the RTI

tiered system, most students respond to the preventative measures used in the first tier.

Some students, however, fail to respond to tier 1 prevention programs and require

increased intensity of intervention at tier 2, the secondary level. Using the example of

school-wide PBS for bullying, students at the secondary level might participate in small

groups that discuss bullying behavior and the detrimental effects it has on others, possibly

being tracked with a check-in system to monitor their bullying behavior. After

participating in educational groups about bullying at the secondary level, students who

continue to display bullying behavior may need to progress to the third tier for more

intensive and individualized interventions. Tertiary level interventions may include more

intense interventions to stop the behavior before it worsens or is repeated. In regard to

PBS for bullying, a tier 3 intervention may involve suspension, or even having a school

police officer arrest the student if the behavior is repeated.

   Sugai and Horner (2006) asserted that PBS helps to develop a positive school

environment by focusing on prevention and intervention, utilizing theoretically sound and

research-based practices, and implementing prevention and intervention at a systems

level.

   One particularly sound practice in effectively implementing PBS includes the use

of functional behavior assessments (Sugai, 2003). Functional behavior assessments are

systematically executed with the goal of understanding the function, or reason, for a

student's behavior. When conducting a functional behavior assessment, the team

explores antecedents to the behavior and consequences, or what occurs directly after the

behavior. After conducting a functional behavior assessment, the team can determine the

function of the student's behavior, leading them to design a behavior intervention plan specific to that student's needs (Gresham, Watson, & Skinner, 2001).

Because functional behavior assessments that guide behavior intervention plans are deeply rooted in research, the ABC-UBI team makes these topics a focus of their PBS trainings. ABC-UBI asserts the importance of developing sound organizational structures and systems that support theoretically sound practices. Recognizing that PBS implementation must occur at the systems level, Horner et al. (2004) outlined seven key features of PBS (see Table 1). Each of the seven key features outlined by Horner and colleagues is dependent on staff and teacher support. In order for these seven key features to take root, there must be implementation and support from the school or district level. Because full staff and teacher support is critical for successful PBS models, a method to evaluate a school's implementation of PBS is necessary.

The School-Wide Evaluation Tool (SET)

Sugai, Lewis-Palmer, Todd, and Horner (2001) recognized the need for reliable implementation of PBS by all school staff and consequently developed the School-Wide Evaluation Tool (SET), a research instrument for measuring the implementation of PBS procedures. The SET is designed to assess and evaluate the critical features of school-wide effective behavior support across each academic school year. Information gathered from the SET can be used to assess features that are already in place, determine annual goals for effective school-wide behavior support, evaluate current efforts toward school-wide behavior support, design and revise procedures as needed, and to compare efforts toward effective school-wide behavior support from year to year. The SET is used as a

Table 1. The Seven Key Features of School-Wide Positive Behavior Support

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School-Wide Positive Behavior Support Practices and Systems

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1. Define 3 to 5 school-wide expectations for appropriate behavior.
2. Actively teach the school-wide behavioral expectations to all students.
3. Monitor and acknowledge students for engaging in behavioral expectations.
4. Correct problem behaviors using a consistently administered continuum of behavioral consequences.
5. Gather and use information about student behavior to evaluate and guide decision-making.
6. Obtain leadership of school-wide practices from an administrator who
   a. establishes a team to develop, implement, and manage the school-wide behavior support effort in a school,
   b. serves as a member of the team,
   c. allocates sufficient time to implement behavior support procedures, and
   d. allocates school-wide behavior as one of the top three improvement goals for the school.
7. Obtain district-level support in the form of
   e. training in school-wide behavior support practices,
   f. policies emphasizing the expectations that schools are safe and organized for effective learning, and
   g. expectation that information on problem behavior patterns be gathered and reported.

(Adapted from Horner et al., 2004)

tool to assess the extent to which features of PBS are in place from an external perspective (Sugai et al., 2001).

The SET is administered in four steps. First, the evaluator conducts a structured interview with a school administrator. That interview consists of 28 questions addressing the extent to which: (a) student expectations are defined; (b) behavioral expectations are taught; (c) a system for developing social-emotional competencies is in place; (d) there is an on-going system for rewarding behavioral expectations; (e) there is a system for responding to behavioral violations; (f) monitoring, evaluating, and decision-making take

place; (g) management supports the team; and (h) the district supports the system. The SET interview is critical to gain perspective on administrator attitude and overall school climate.

The second step of the SET involves a school walk-through and review of materials such as the school discipline handbook, training materials, and other related information. This step is important for the observer to get an accurate and objective look at the fidelity of PBS implementation externally. The observer identifies how accessible the information is for teachers, how often it is referenced, and visual proof throughout the school that the material is being used.

In the third step of the SET, the evaluator randomly selects 10 staff for another structured interview. This interview has nine questions that address perceived behavioral support, knowledge of school rules, and the degree of training for students. Often, some instructional staff do not receive the same instruction and training as classroom teachers, so this step is important to determine the breadth of PBS training to all educators in the school.

Finally, in the last step of the SET, the evaluator selects 15 students at random and asks them two questions: (1) What are the school rules? and (2) Have you received a reward for appropriate behavior in the past month? (Sugai et al., 2001). This step determines whether staff training and implementation get through to the students, an integral piece for successful PBS. If students are able to answer the questions correctly and confidently, one can discern that PBS is being implemented effectively and with fidelity.

Once the four steps of the SET are administered and scored, a process that takes approximately 2 hours per school (Horner et al., 2004), schools can be provided with a concrete representation of areas of PBS implementation in which they are doing well and those in which they have room for improvement. More specifically, the SET provides schools with a measure of the proportion of features that are not targeted or started, that are in the planning phase, and that are in the implementation and maintenance phases of development to help schools in their implementation of a systems approach to effective school-wide behavior support (Sugai et al., 2001).

Horner et al. (2004) conducted a study to determine the reliability and validity of the SET. Evaluating 45 schools, they found the SET to be very reliable, and follow up studies have found it especially reliable and valid for use in elementary schools (Vincent, Spaulding, & Tobin, 2009). The researchers assessed the reliability of the SET through a variety of correlational analyses involving test-retest and internal consistency of items, subscales, and the total SET score. They also calculated percentages of interobserver agreement for test-retest reliability. Tests for internal consistency resulted in an overall alpha of .96 and interobserver agreement on SET items ranged from 98.4% to 100% (Horner et al., 2004).

Construct validity of the SET was determined by correlating SET total scores with scores from the Effective Behavior Support: Self-Assessment Survey (EBSSAS; Sugai, Horner, & Todd, 2000), which also measures the implementation of school-wide PBS. They found moderate to strong correlations ranging from .44 to .81 with a median of .65 (Sugai et al., 2004).

Effective Behavior Support: Self-Assessment Survey (EBSSAS)

The EBSSAS differs from the SET in assessing the implementation of school-wide PBS in that it is a survey completed by the local team within a school rather than by an external observer of the school as with the SET. Developed by Sugai, Horner, and Todd (2000), the EBSSAS contains 46 items that assess school-wide PBS alongside items assessing behavior support in the classroom and unstructured settings (hallway, playground, etc.) as well as with individual students. The survey takes approximately 30 minutes to complete and is usually completed by all staff in the school or from a team member-led focus group. Raters complete the survey independently, basing their ratings on their individual experiences at that school (Sugai et al., 2000).

The EBSSAS was developed to assist school staff in assessing their own behavior support systems. Similar to Wright's RTI readiness survey, the intended use of the EBSSAS is to allow teams to look introspectively at how effectively they are implementing PBS. Results from the EBSSAS are intended to be used by teams to assist with annual action planning, internal decision-making, assessment of change over time, awareness building for staff, and team validation. Using the SET and EBSSAS can provide schools with critical feedback on their PBS implementation. These tools operationalize behavioral intervention effectiveness, providing some continuity for school and district trainers such as ABC-UBI.

School Climate

Effective implementation of school-wide PBS involves all staff and students. As the system gains support from staff and students alike, the culture or climate of the school

undergoes a change. Systems change begins with the climate of a school, which has captured the attention of researchers and practitioners as they continue to strive to improve schools and academic performance (Wilson & McGrail, 1987). While school climate is not a direct focus of ABC-UBI, the program's focus on PBS could indirectly affect school climate in a positive way.

Elements that create school climate encompass a wide range and are often complex. Early research on school climate categorized "climate" into four variables: (1) ecology (physical and material aspects of climate); (2) the milieu (characteristics of people in groups); (3) the social system (patterned relationships of people and groups); and (4) the culture (belief systems, values, and cognitive structures) of the group (Tagiuri, 1968). A researcher added to Tagiuri's research 30 years later, determining that school climate is made up of the quality of teacher-student interactions, noise level in hallways, physical structure of buildings, and even physical comfort levels such as heating and lighting (Freiberg, 1998).

Recent research has expanded on those four variables defined by Freiburg (1998), identifying more specifically the factors that affect school climate. One factor is faculty. Teachers who enjoy their jobs and are knowledgeable and organized enhance school climate (Kaplan & Owings, 2002). Another is student attitude and work ethic. If a student is involved in positive extra-curricular activities, he or she is more likely to succeed and add to a positive climate (Holloway, 2000). In addition, parent support is believed to be an important factor in school climate. Parent support has been linked to academic achievement, student attendance, and overall student attitude (Henderson & Mapp, 2002). Additionally, the principal's leadership affects school climate

significantly. A 1998 study discovered that strong principal leadership contributes to increased academic achievement; a principal who participates with, effectively trains, and supports the team is vital to creating a positive school climate (Lytton & Pyryt, 1998).

Positive school climate is also dependent on how safe students feel at school. If a student feels safe at school, he or she is more likely to achieve academically at a higher level. In fact, research has shown that students who feel unsafe due to building structure, commute, or social climate, tend to avoid school and consequently miss key instruction for academic achievement (Taylor, Rodgers, & West, 2001).

Because of the research that indicates the critical nature of maintaining a positive school climate, Williams, Matthews, Stewart, and Hilton (2007) reviewed the research on school climate and identified the following 10 common elements of school climate:

1. Common mission, vision, values, and goals that are focused on teaching and learning

2. Decision making based on data

3. Participative leadership that is focused on teaching and learning

4. Teaming that is collaborative

5. Interdependent culture

6. Academic success for all students with systems of prevention and intervention

7. Professional development that is teacher-driven and embedded in daily work

8. Principal leadership that is focused on student learning

9. High-trust embedded in school culture

10. Use of continuous assessment to improve learning (Williams et al., 2007)

Because of the potential link between school-wide PBS implementation and positive school climate, it is important to be able to assess school climate reliably and validly. It

would be difficult for an external observer to assess a school's climate because that person is not a part of experiencing the day-to-day climate in that school. Therefore, the primary means of evaluating school climate is through student survey (Freiburg, 1998). One such student survey of school climate is the Indicators of School Quality (ISQ; Taylor, West, & Smith, 2006). The ISQ is designed to provide feedback to schools, thereby helping schools to target changes that need to be made to create a more positive school climate. The ISQ summarizes perceptions of students, parents, and school staff regarding over 30 characteristics of the school. The ISQ was developed to evaluate and monitor school improvement efforts.

School Climate Survey

The School Climate Survey (Emmons, Haynes, & Comer, 2002) is a commonly used and thoroughly researched tool for the assessment of school climate. The School Climate Survey was developed by the Comer School Development Program at Yale University and has four versions: Elementary and Middle School, High School, Parent, and Staff. Each survey addresses various factors relating to school climate such as order and discipline, relationships between students, teachers, and administrators, and the physical condition of the school building. Factors for the School Climate Survey were developed through of a review of the school climate literature, identifying nine central elements that encompass school climate consistent with the findings of Williams et al. (2007) including (Chronbach's alpha for internal consistency in parentheses): Achievement and Motivation, Collaborative Decision-Making, Equity and Fairness, Leadership, Order and Discipline, School Building, School/Parent/Community Relations, Staff Dedication to Student Learning, and Staff Expectations (Haynes, Emmons, & Ben-

Avie, 1997; Kuperminc, Leadbeater, Emmons, & Blatt, 1997). As of 2008, the various

versions of the School Climate Survey had been used as research instruments for at least

20 published and unpublished studies addressing school climate (Levett, Emmons, Boyd,

& Loseth, 2008).

Purpose of Study

With the increased accountability required of schools and the ongoing need to

improve outcomes for students, ABC-UBI aims to assist Utah schools in their service

delivery to enhance instruction and interventions for students. ABC-UBI has been

operating since 2002, providing training, support, and supplemental funding to pilot

schools; therefore, one would expect to find a difference in school service delivery

patterns between ABC-UBI schools and schools who have not participated in the ABC-

UBI project. The trainings they provide presumably would impact teacher opinions and

perceptions of RTI, PBS, and indirectly, school climate; and given the research cited

above about the effectiveness of those practices, improved student academic achievement

would be the predicted outcome. It was thus hypothesized that two ABC-UBI schools

and two non-ABC-UBI schools within the same school district would show differences

across the following four domains:

1. Staff awareness of and readiness to implement components of a Response to
   Intervention (RTI) model

2. Implementation of School-Wide Positive Behavior Supports (PBS)

3. Reports of school climate

4. Student academic achievement

Research Questions

1. Is there a difference between two ABC-UBI and two non-ABC-UBI schools in their awareness of Response to Intervention?

2. Is there a difference between two ABC-UBI and two non-ABC-UBI schools in their implementation of school-wide Positive Behavior Supports?

3. Is there a difference between two ABC-UBI and two non-ABC-UBI schools in reports of school climate by teachers?

4. Is there a difference in students' end-of-year Criterion-Referenced Test scores between two ABC-UBI and two non-ABC-UBI schools?

5. Is there a difference in students' DIBELS reading benchmark scores between two ABC-UBI and two non-ABC-UBI schools?

CHAPTER 2

METHODS

<u>Setting</u>

This study collected data from four schools in a large suburban school district in

Utah. When the Utah State Office of Education released its most recent report in October

2009, there were 61 elementary schools, 15 junior high schools, 7 high schools, and 20

other schools including private, youth in custody, and special needs schools within the

boundaries of this district (Utah State Office of Education, 2009a).

At the time of this study, the school district of focus had approximately 65,014

students from preschool through high school. A total of 51.6% of those students were

male and 48.4% were female. According to the Utah State Office of Education report,

racial demographics in the district included 1.74% Asian, 1.52% Black, 7.66% Hispanic,

.51% American Indian, 1.02% Pacific Islander, 85.4% White, and 2.15% of students did

not report their race (Utah State Office of Education, 2009a).

In the 3 school years preceding this study, the district conducted monthly

trainings for "Local Case Management Teams." These teams were to consist of at least

one special education teacher, a regular education teacher, an administrator, and a school

psychologist. The focus of these teams was to provide teachers with support in

conducting interventions for academics and behavior. The teams were trained in

conducting CBA, CBM, and other evidence-based practices. The district's focus on

setting up these problem-solving teams made it an ideal setting for this study because all schools had some training and awareness of evidence-based practices such as RTI, CBA, CBM, and PBS.

<center>Participants</center>

First implemented in the district in the 2003-2004 school year with one pilot elementary school, ABC-UBI added four additional elementary schools the next school year. To date, five elementary schools in the district have "graduated" from the ABC-UBI program and there are currently four active ABC-UBI sites, all of which are elementary schools. Approximately 15% of the elementary schools in the targeted district are therefore participating in or have participated in the ABC-UBI project.

To be selected for inclusion in this study, ABC-UBI and non-ABC-UBI schools within the district had to meet some basic requirements in an attempt to ensure homogeneity within groups for comparison purposes. One such requirement is that the two schools in the treatment condition must have begun the ABC-UBI program within the same year. Given this requirement, one of the four active ABC-UBI sites was ruled out for participation in the study as it began the program during a different school year. The remaining three schools were in their second years of ABC-UBI implementation.

Another criterion for inclusion of ABC-UBI schools in the present study was academic homogeneity. Of the three remaining schools, one hosted an accelerated or gifted program and consequently had significantly higher CRT scores than the other schools in the district, thereby skewing the academic data; that school was ruled out for participation in the study.

The two remaining ABC-UBI schools (School A1 and School A2) were the most homogeneous for inclusion in the treatment group. They were both in their second year of ABC-UBI participation, both having started with ABC-UBI in its first year incorporating academics along with behavior support, and received favorable scores on the SET when administered as part of the ABC-UBI progress evaluation process. Two non-ABC-UBI elementary schools (School B1 and School B2) were matched to the treatment schools based on overall student body size and SES (percentage of students participating in the free and reduced lunch program), two variables that are highly correlated with academic achievement. School A1 was matched with School B1, and School A2 was matched with School B2.

School A1

School A1 was in the second year of ABC-UBI training at the time of this study and had approximately 629 students with 17% receiving free or reduced lunch and a 6% minority population (see Table 2). Along with ABC-UBI, School A1 also participated in the Gold Medal Schools program, a program that focuses on student diet and exercise. In the 2008-2009 school year, School A1 had 31 students either move into or out of its boundaries, giving it a 4.9% mobility rate (see Table 2). With 34 certified employees that had an average of 14 years of experience in education, seven (20.6%) had graduate degrees, and 97% were degreed for assignment with an additional 14 classified employees. School A1 had one special education teacher providing resource services and one self-contained class (functional skills) with a 7.4% ($n = 47$) special education population. One part-time counselor and one part-time school psychologist were also employed at School A1 at the time of this study. School A1 operated on a traditional

Table 2. Schools A1 and B1: Demographics for 2008-2009

	School A1		School B1	
	n	*%*	*n*	*%*
Students	629		662	
Number of years participated in ABC-UBI	2		N/A	
Staff	48		48	
Free or reduced lunch	107	17	99	15
Minority population	38	6	43	6.5
Special Education population	47	7.4	39	6
Mobility	31	4.9	15	2.3

schedule and passed annual yearly progress in the 2008-2009 school year. As part of

ABC-UBI participation, School A1 was administered the SET, receiving an overall

percentage score of 98.3.

School B1

At the time of the study, School B1 had approximately 662 students with 15% on

free or reduced lunch and a 6.5% minority population, and it had not participated in the

ABC-UBI program (see Table 2). School B1 did not participate in any school-wide

interventions or program in the year this study took place. In the 2008-2009 school year,

School B1 had 15 students either move into or out of its boundaries, yielding a 2.3%

mobility rate. School B1 had 48 staff members, 17 classified and 31 certified employees.

The certified employees had an average of 10 years of experience in education. Of the

School B1 certified employees, 10 (32%) had graduate degrees and 94% were degreed

for assignment. School B1 had one special education teacher providing resource services

with a 6% ($n = 39$) special education population, one part-time counselor, and one part-

time school psychologist. School B1 operated on a traditional schedule and passed annual

yearly progress in the 2008-2009 school year. The principal at School B1 indicated that School B1 had not applied to participate in the ABC-UBI program but was interested in applying for the program in the future.

School A2

Similar to School A1, School A2 was also in the second year of ABC-UBI training at the time of this study. School A2 had approximately 915 students with 10% receiving free or reduced lunch and a 3.5% minority population (see Table 3). Aside from ABC-UBI, School A2 did not participate in any other school-wide interventions or program in the year this study took place. In the 2008-2009 school year, School A2 had 28 students either move into or out of its boundaries, yielding a 3% mobility rate. School A2 had 72 staff members, 26 of whom were classified, and 46 were certified employees who had an average of 8 years experience in education. Ten (22.7%) of School A2's certified employees had graduate degrees, and 89% were degreed for assignment. School A2 had 1 special education teacher providing resource services, 1 special education teacher in a learning center (behavior unit), and 2 special education teachers in a self-contained (functional skills) class with a 6% ($n = 54$) special education population. School A2 had one full-time counselor and one part-time school psychologist. School A2 operated on a traditional schedule and passed annual yearly progress in the 2008-2009 school year. School A2 reported an overall SET percentage score of 94.7.

School B2

School B2, at the time of this study in the 2008-2009 school year, had approximately 842 students with 11.5% on free or reduced lunch and a 4% minority

Table 3. Schools A2 and B2: Demographics for 2008-2009

| | School A2 | | School B2 | |
	n	*%*	*n*	*%*
Students	915		842	
Number of years participated in UBC-UBI	2		N/A	
Staff	72		51	
Free or reduced lunch	93	10	97	11.5
Minority population	32	3.5	34	4
Special Education population	54	6	60	7.1
Mobility	28	3	35	4.1

population (see Table 3), and it had not participated in the ABC-UBI program. In the

year this study took place, School B2 participated in the Gold Medal Schools program to

increase student physical activity and overall physical health. The program focuses on

teaching and practicing a healthy diet and high level of exercise. In the 2008-2009 school

year, School B2 had approximately 35 students either move into or out of its boundaries,

yielding a 4.1% mobility rate. School B2 had 51 staff members, 17 classified, and 34

certified employees. The certified employees had an average of 15 years experience in

education. Of the School B2 certified employees, 15 (44%) had graduate degrees and

97% were degreed for assignment. School B2 had one special education teacher

providing resource services with a 7.1% ($n = 60$) special education population, one full-

time counselor and one part-time school psychologist. School B2 operated on a

traditional schedule and passed annual yearly progress in the 2008-2009 school year.

Similar to School B1, the principal at School B2 indicated that School B2 had not applied

to participate in the ABC-UBI program but was interested in applying for the program in

the future.

Procedures

A major component of the data collection for this study involved teacher and student responses on specific surveys. Teacher and student responses were then compared between treatment and control groups for differences.

The recruitment process began at the school level. To recruit schools to participate in the study, the researcher met with individual principals, explained the study, the time commitment, and recruitment procedures. The researcher then asked for permission as to whether the principal would be willing to allow the study to take place in his or her school. Of the original two schools recruited for the non-ABC-UBI group, one principal declined to participate. Another school was identified that similarly matched with a treatment school, and that principal agreed to participate. Principals of both ABC-UBI schools agreed to participate. Each consenting principal signed a letter indicating his or her support for the school to participate in the study.

Once a school site was secured through the support of the principal, the focus changed to the recruitment of teachers and students. The researcher arranged to present the details of the study at a scheduled faculty meeting at each of the schools. In the faculty meeting, the researcher explained the purpose of the study and what would be required of teachers and students, along with the anticipated timeline. The researcher provided the teachers with estimates on approximately how long the surveys would take to complete and the date when the surveys would be collected from the teachers (2 weeks after the presentation). The researcher also passed out consent forms for teachers to sign, reminding them that participation was completely voluntary. Teachers were given the

option to turn in the signed consent at the same time as their surveys to minimize any perceived pressure to participate.

Procedures for passing out, collecting, and turning in student surveys were then explained to teachers in the third- through sixth-grades. Teachers in all four schools were given the option of having the researcher come into the classroom to pass out the student survey or for the teacher to do it on their own. All of the participating teachers opted to pass out the survey themselves. The researcher ensured that any school or classroom rule postings were removed from the classrooms while students were filling out the surveys (one of the questions on the student survey asked about school rules) and provided teachers with contact information for any future questions. Given the low minority rates in each of the schools, teachers did not provide measures in other languages. If teachers had an English language learner (ELL) in their classrooms, they were asked to pass out the survey to that student but not include it with the surveys turned in. No incidences of ELL issues were mentioned to the researcher.

Student participation was also completely voluntary. Two weeks before any student surveys were dispensed, teachers sent home a passive consent form with each student. The passive consent form outlined the study, discussed the risks involved (e.g., loss of confidentiality), explained when the study would take place, and gave parents the researcher's contact information. Parents were asked to sign and return the form only if they did not want their child to participate. The form indicated that no response would imply consent to participate. Of all the consent forms sent home in the four participating schools, only two parents requested that their children not participate.

To further ensure student participation to be completely voluntary, teachers read a statement about the study before passing any surveys out. The statement highlighted the same information about the study as the passive consent, indicating that students could opt to forgo completion of the student survey.

All participating schools had specific school-wide rules, regardless of participation in the ABC-UBI program. Information about each school's school-wide student expectations was gathered from the principal at each participating school. All administrators provided 3-5 school-wide rules that they had in place. They provided the specific wording on the school rules, and student surveys were scored accordingly.

<div align="center">Dependent Measures</div>

To determine the effectiveness of the two ABC-UBI schools in comparison with two non-ABC-UBI schools, a variety of dependent measures were analyzed. Because the ABC-UBI project is designed to impact schools in a variety of areas, this multimethod approach was essential to determine the breadth of systems change within the ABC-UBI schools.

RTI Awareness

This study assessed staff awareness of Response to Intervention (RTI), a primary focus of the ABC-UBI program. Consenting teachers in each school completed a 25-item survey adapted from three of four RTI training measures used by The Florida Project (Batsche & Curtis, 2008). The four RTI training measures that were adapted are comprised of specific factors to measure its target area of assessment. The Staff Beliefs Survey is made up of three factors: (1) Academic Abilities and Performance of Students,

(2) Data-Based Decision Making, and (3) Functions of Core and Supplemental Instruction. The Perceptions of RTI Skills Survey includes two factors: (1) Perceptions of RTI Practices Applied to Academic Content, and (2) Perceptions of RTI Practices Applied to Behavior Content. The three factors included in the Perceptions of RTI Skills Survey are: (1) Perceptions of RTI Skills Applied to Academic Content, (2) Perceptions of RTI Skills Applied to Behavior Content, and (3) Perceptions of Data Manipulations and Technology Skills.

Finally, the Coaching Evaluation Survey is comprised of the following three factors: (1) Role, Function, and Activities of the RTI Coach, (2) Modeling of the Problem Solving Process, and (3) Consultation Skills. The Florida Project reports the construct validity and internal consistency in its technical manual for all four surveys (Castillo et al., 2010). Herein, the construct validity for each of the surveys is reported as the percentage of variance in respondent ratings for which the factors within each survey collectively account. Internal consistency reliability is also reported as measured by Chronbach's alpha for each factor.

The Staff Beliefs portion has three subfactors that collectively accounted for 72% of the common variance in respondent ratings of belief statements. The three subscales that make up the staff beliefs portion of the survey are Academic Abilities and Performance of Students with Disabilities, Data-Based Decision Making, and Functions of Core and Supplemental Instruction. Chronbach's alpha ranged from .79 to .87 for the three subscales (Castillo et al., 2010).

Two factors combine to make up the Perceptions of Practices section of the RTI survey that accounted for 75% of the common variance in the nearly 2,500 respondent

ratings. Chronbach's alpha for the two factors were .97 for Perceptions of RTI Practices Applied to Academic Content and .96 for Perceptions of RTI Practices Applied to Behavior Content (Castillo et al., 2010).

The third section addresses teacher perceptions of RTI skills and is comprised of three factors that combine to account for 80% of the common variance in respondent ratings. The factors contained in this section of the RTI Survey are Perceptions of RTI Skills Applied to Academic Content, Perceptions of RTI Skills Applied to Behavior Content, and Perceptions of Data Manipulation and Technology Skills. Chronbach's alpha ranged from .94 to .97 (Castillo et al., 2010).

Twenty-five applicable items were selected from the Florida Project RTI training measures. Coefficient alphas were calculated to determine internal consistency of the items selected for the study, resulting in high internal consistency. The adapted survey begins with 7 items taken from the Perceptions of Practices Survey, which addresses perceptions of how frequently or infrequently specific RTI practices occur in the school for both academics and behavior. The Perception of Practices items are rated on a 5-point Likert scale ranging from 1 (never occurred) to 5 (always occurred). Selected items from the Perceptions of Practice portion resulted in an internal consistency of .92.

The adapted survey also included 7 items from the School Personnel Satisfaction Survey. These items focus on the level of staff satisfaction or dissatisfaction relative to the service delivery model used in their school. Items taken from the School Personnel Satisfaction Survey are also rated on a 5-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied). The internal consistency for the selected items from the School Personnel Satisfaction portion was calculated at .91.

Eleven items on the adapted survey were from the Perceptions of RTI Skills Survey. These items assess a staff member's perception of his or her own skills related to assessment, instruction, and intervention within the RTI model. Similar to the Perceptions of Practice and School Personnel Satisfaction Surveys, items from the Perceptions of RTI Skills Survey are rated on a 5-point Likert scale ranging from 1 (I do not have this skill at all) to 5 (I am highly skilled in this area and could teach others this skill). The internal consistency of this portion of the RTI survey was calculated at .96, resulting in an internal consistency coefficient of .97 for all three sections of the survey combined. See Appendix A for a copy of the adapted survey.

Implementation of Positive Behavior Support

School-wide Positive Behavior Support (PBS) is another focus of the ABC-UBI project. Coaches are assigned to each ABC-UBI school specifically to assist with the implementation of a PBS system at the school level. A critical element of successful PBS implementation is the public posting of 3 to 5 school-wide expectations for appropriate behavior (Horner et al., 2004). Given the importance placed on posting of behavior expectations in a successful PBS model, students in such a setting should be able to relate the school rules when asked. A second important piece of successful PBS implementation is frequent positive recognition of students who engage in the predetermined behavioral expectations. One can obtain such information from a structured student interview provided by the School Evaluation Tool (SET; Sugai et al., 2001). The student interview section of the SET asks two questions: (1) What are the school rules? and (2) Have you received positive reinforcement within the school-wide behavior system in the past 2 months?

For the purpose of this study, the student interview section of the SET was converted to a written survey and distributed to all students in the third- through sixth-grades at the participating schools in order to increase the potential sample size (third-grade was selected as the lower limit due to the reading and writing requirement). Passive consent forms were sent home with students approximately 2 weeks prior to being asked to complete the written survey, and only willing students whose parent/guardian did not object to their participation were asked to complete the survey (see Appendix B). In all, 662 students in the treatment condition and 588 in the control condition assented to take the survey.

An incorrect answer on Question 1 (student could not correctly name expectations) was coded as "0," while a partially correct answer on Question 1 (student named at least one expectation correctly, but not all) was coded as "1." A correct answer (student correctly named all behavioral expectations) on Question 1 was coded as "2." For Question 2, an answer of "Yes" was coded as "2" and an answer of "No" was coded as "1." Student responses were then compared between groups with attendance in an ABC-UBI school as the independent variable and score on the child SET survey questions as the dependent variable.

PBS implementation was also assessed by surveying teachers using the Effective Behavior Support: Self-Assessment Survey (EBSSAS; Sugai et al., 2000) (see Appendix C). The EBSSAS contains 46 items addressing key components of effective PBS implementation and takes approximately 30 minutes to complete. Each item is rated on a 3-point Likert scale (1=in place, 2=partially in place, and 3=not in place). For the purpose of this study, the fourth section of the EBSSAS, which addresses behavior

support with individual students, was omitted from the survey. There were two reasons for the omission of the fourth section of the EBSSAS. First, the study's focus was primarily on tier 1 behavior support and how schools operate on the systems level in regard to PBS. The fourth section of the EBSSAS focuses on interactions with individual students. While this is an important and relevant aspect of PBS, it was less relevant for this purpose of this study. Secondly, teacher time was a factor. Teachers had limited time to complete the surveys for this study, and with the hope of securing as many teacher participants as possible, the goal was to limit total survey time to 60 minutes. Omitting the fourth section of the EBSSAS helped keep survey completion time down. Ratings on the three sections of the EBSSAS were compared between groups with the independent variable being the school's participation with ABC-UBI and the dependent variable being the EBSSAS survey ratings. Forty-one teachers in the treatment condition and 39 in the control condition provided consent and completed the EBSSAS.

Office Discipline Referrals (ODRs) are commonly used to assess the effectiveness of PBS, and they were considered for this study as well. They were ruled out for use in this study, however, because of the difference in training between ABC-UBI schools and non-ABC-UBI schools. Part of the focus of the ABC-UBI program is implementing PBS in such a way to eliminate ODRs and providing training in using alternatives to ODRs. Therefore, an ABC-UBI school may not necessarily have fewer behavior problems if it has fewer ODRs than a non-ABC-UBI school; rather, the school could simply be using alternatives to ODRs to track problem behaviors.

School Climate

School climate was assessed for ABC-UBI and non-ABC-UBI schools in this study by use of the School Climate Survey (Haynes et al., 2001). The School Climate Survey is a 54-item survey that takes approximately 15-20 minutes to complete (see Appendix D). Staff members respond on a 5-point Likert scale ranging from 5 (Strongly Agree) to 1 (Strongly Disagree) depending on how well they believe each statement describes their school. The Staff School Climate Survey looks at nine factors affecting school climate, and provides a unique look at school climate from the perception of teachers and staff. Responses were coded using the coding system developed by Haynes et al. (2001) and analyzed between groups with the school's ABC-UBI participation being the independent variable and staff ratings on the School Climate Survey as the dependent variable.

Forty-one teachers from the treatment condition and 39 from the control condition consented and completed the School Climate Survey. Participating teachers were asked to complete a total of three surveys. Combined, these surveys required approximately 45-60 minutes of the teachers' time. All teachers were given a candy bar when the study was presented in faculty meeting regardless of whether they chose to participate in the study or not. Survey completion was voluntary with no identifying information about the raters.

Criterion-Referenced Test and DIBELS ORF Scores

At the end of the school year, every student in the state of Utah is required to take Criterion-Referenced Tests (CRTs) for their core subjects. All grades take CRTs for Language Arts and Math every year, and fourth- through sixth-grade elementary students

also take CRTs for Science. ABC-UBI focuses time and resources for participating schools to increase positive behavior support systems and RTI implementation. However, if students in ABC-UBI schools show little or no academic growth, the utility of expending those additional resources may be in question. Therefore, this study compared CRT and DIBELS ORF benchmarking scores of students from ABC-UBI schools to students from non-ABC-UBI schools.

To assess CRT differences, the independent variable was the school's participation in the ABC-UBI program, and the dependent variable was average scores on CRTs by grade. For DIBELS, the independent variable was again the school's participation in the ABC-UBI program, and the dependent variable was student ORF scores at the spring (end-of-year) benchmarking period.

<u>Data Analysis</u>

In comparing student and teacher performance and ratings between groups (ABC-UBI schools and non-ABC-UBI schools), the students and teachers within each data set were nested within classrooms or schools, or both. Because of the nature of nested data, standard regression analyses with students and teachers as the unit of analysis could result in incorporating variance that is a result of something other than treatment effectiveness. Standard regression analysis cannot delineate between treatment variance and natural teacher and school variance. The participants in this study were nested in three levels. In analyzing CRT and DIBELS data, students (Level 1) were nested in classrooms (Level 2), and those classrooms were nested in schools (Level 3). In analyzing survey data, students or teachers (Level 1) were nested in schools (Level 2), which were nested in blocks: ABC-UBI versus non-ABC-UBI (Level 3). When subjects

are nested in groups, as is the case in the present study, the ideal approach is use of hierarchical linear models (HLM). Hierarchical linear models have been developed so that relationships may be studied at any level without losing information related to each level of the hierarchy (Raudenbush & Bryk, 2002).

While HLM is effective in ruling out variance due to nesting rather than treatment, there is a risk involved with this type of data analysis. If there is not homogeneity within groups, HLM analyzes the data set at the highest level (e.g., school). If the data are analyzed at the school level, that leaves a sample size of 2 in each condition, and therefore only 1 degree of freedom in each group, yielding essentially no statistical power. Due to the limited availability of ABC-UBI (treatment) schools in any one given district (adding schools from another district would add a fourth level, school district, to the nested data, creating too many levels for analysis), within-group homogeneity is difficult and often impossible to attain. In the present study, there were only two ABC-UBI schools that could be included in the treatment group due to demographic differences and schools being in different years of participation with ABC-UBI. Therefore, the best approach was to match control schools with treatment schools as closely as possible using available demographic information, such as SES and size of student body. Matching schools in this manner optimized the chances for homogeneity, allowing HLM to analyze the data at the first level for maximum power.

When data were collected from all subjects across conditions, simple one-way ANOVA testing was performed within each group for each of the variables addressed in this study to determine within-group homogeneity. These tests yielded significant within-group differences for treatment and control schools. This within-group difference

made use of HLM a less powerful and sensitive design. While HLM does accommodate within-group heterogeneity, it results in only one degree of freedom for each group in the case of this study. Thus, data were analyzed using randomized blocks.

The blocking design is ideal for populations wherein subjects are matched, as in the present study, to enhance homogeneity. Matching subjects for homogeneity, however, presents some issues with generalizability because a broader sample of the population is not provided. In the case of this study, two high SES schools and two moderate SES schools were matched together and compared, but this rules out any conclusions about low SES schools. The schools selected were also within a school district where there is a relatively low representation of minorities, making generalizability an issue on that variable as well. The blocking design offers a solution to the concern of generalizability by including more than one block of homogenous subjects in the analysis (Keppel, 1991). For the purpose of the present study, schools were blocked by the factors used to match treatment schools to control schools (SES and student body size).

CHAPTER 3

RESULTS

Data were collected by means of teacher and student survey along with student performance data. The independent variable was school participation in the ABC-UBI program and the dependent variables were assessed via teacher response on surveys, student response on surveys, and student outcome data. All consenting first- through sixth-grade teachers completed the adapted RTI awareness survey across the two conditions of this study. School A1 had 22 regular education teachers in grades 1 through 6 while there were 32 at School A2, which offered a total of 54 teachers who were recruited to complete the survey from the ABC-UBI (treatment) schools. Of the 54 potential teacher participants from the treatment condition, 41 completed and turned in the survey (18 from School A1 and 23 from School A2), yielding a 76% teacher response rate.

In the control group, School B1 had 22 teachers in first- through sixth-grade, School B2 had 29 teachers in first- through sixth-grade, which provided a total 51 potential teacher participants. Of the 51 potential teacher participants in the control condition, 39 completed and turned in the survey (19 from School B1 and 20 from School B2), also yielding a 76% teacher response rate.

<u>Research Question 1</u>

Is there a difference between ABC-UBI and non-ABC-UBI schools in their awareness of Response to Intervention (RTI) measures?

This question was answered by comparing teacher responses on a 25-item RTI survey. Originally developed by Batsche and the Florida Project (2008), elements of the RTI survey were revised and combined to measure three primary areas of a RTI model: (1) teacher perceptions and satisfaction of RTI, (2) the degree to which their school is implementing RTI, and (3) the teacher's self-reported skills to implement RTI.

Univariate analysis of variance (ANOVA) was performed to explore whether mean scores on each facet of the RTI survey were different between the treatment and control conditions. Schools were blocked by SES and overall student body size—the factors by which control schools were matched with treatment schools. Block 1 included the schools matched with moderate levels of SES and size of student body population. Block 2, on the other hand, included the schools matched with relatively high levels of SES and a large student body population.

The ANOVA revealed no significant differences between conditions on any of the three facets of the RTI Survey. It did reveal, however, a significant interaction, meaning that there was a significant difference between Block 1 and Block 2 differences, between treatment and blocks for the teacher self-reported RTI skills portion of the survey [$F(1, 76) = 8.31$, $p < .01$; see Figure 2] as well as the section that addresses the teacher's perceptions of RTI practice [$F(1, 76) = 10.30$, $p < .01$; see Figure 3]. Both significant interactions were nearly identical, indicating that the treatment was effective for Block 2,
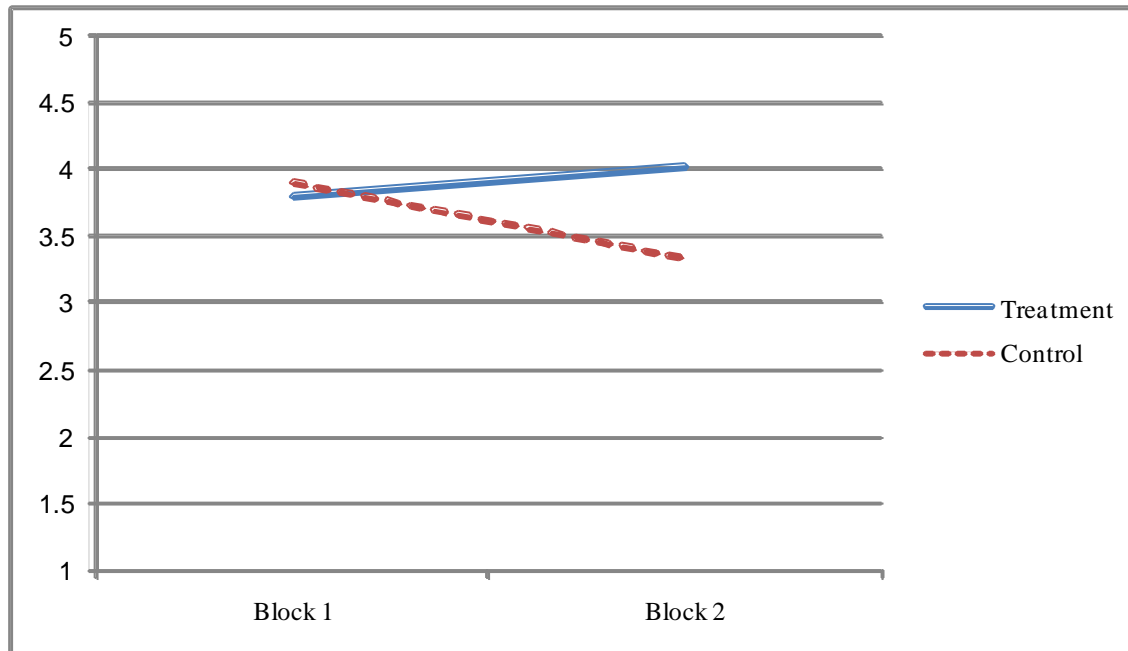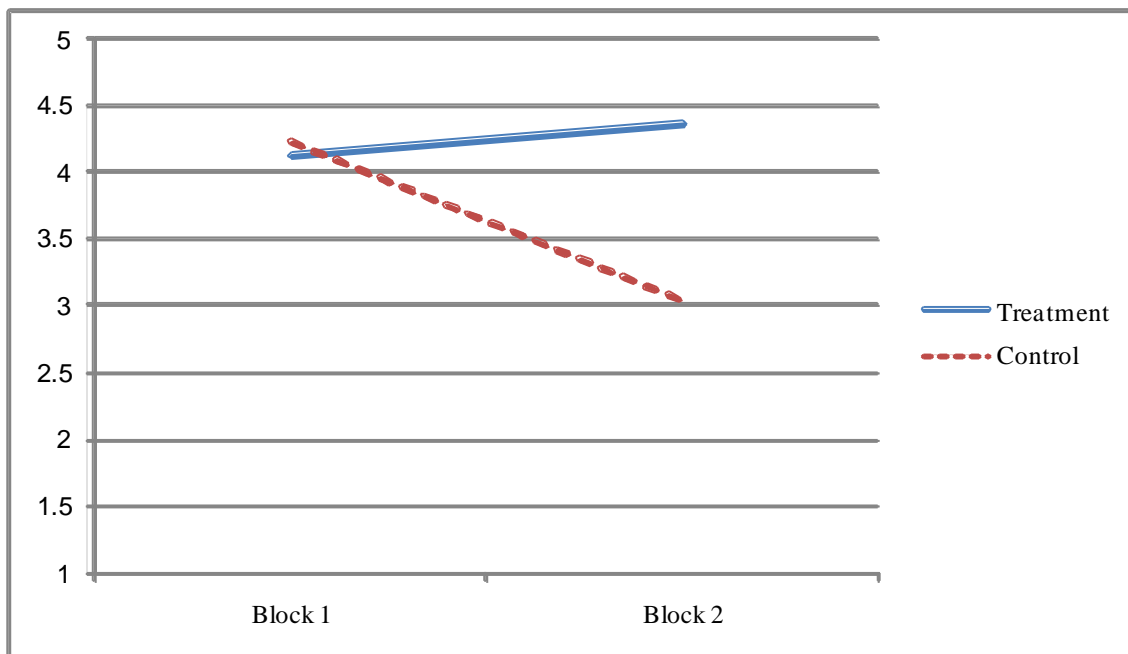
Figure 2. RTI Skills Treatment X Block

Figure 3. RTI Perceptions of Practice Treatment X Block

yet possibly detrimental for Block 1, as the control school reported slightly higher scores than the treatment school in that block.

The Perceptions of Practice section was scored on a 5-point Likert-type scale with ratings ranging from 1 (low levels of RTI awareness) to 5 (high levels of RTI awareness). The second section, whereon teachers rated their satisfaction on the way their school implements and utilizes RTI, ranged on a Likert scale from 1 (not at all satisfied) to 5 (very satisfied). On the third section, which targets a teacher's self-reported skills across the domains of RTI, Likert scale items ranged from 1 (no skill) to 5 (very highly skilled). Mean ratings and standard deviations for the RTI survey are reported in Table 4.

Research Question 2

Is there a difference between ABC-UBI and non-ABC-UBI schools in their implementation of school-wide Positive Behavior Support (PBS)?

This research question was addressed through both student survey and teacher/staff survey. The student survey required some reading and writing skills, so only third- through sixth-grade students, regardless of whether they were being served in special education or solely in general education, completed the survey to ensure all respondents could meet the task demands. The student survey, adapted from the SET (Sugai et al., 2001), asked the following questions: (1) What are the school rules? and (2) Have you received a positive reward or positive recognition in the past month?

Answers on the student surveys were coded and compared between groups, blocking for SES and overall student body size. With schools blocked for those factors, a univariate ANOVA was performed to explore mean differences between treatment and control schools revealing a nonsignificant main effect. When comparing Blocks 1 and 2,

however, answers on Question 1 of the student survey resulted in a significant interaction between treatment and blocks [$F(1, 1236) = 111.32$, $p < .01$; see Figure 4].

This significant interaction indicates that while there was not a significant overall difference between treatment and control groups, the treatment schools reported significantly higher scores than the control schools when blocked for SES and overall school size. School A1 had 303 students respond to the survey compared to 263 in School B1. A total of 349 students completed the survey in School A2, while 325 completed the student survey in School B2.

The first question on the student survey asks the student to name as many of the school rules as he or she can remember. If the student could not correctly name any of the school rules, he or she received a score of "0." If the student could correctly name some, but not all of the school rules, he or she received a score of "1." Finally, if the student could correctly name all the school rules, he or she received a score of "2." Though there was not a significance difference between treatment and control schools regarding naming school rules, relatively large eta squares were found, indicating that participation in the ABC-UBI program accounts for 91.5% of the variance in students correctly naming school rules, which is meaningful. Means and standard deviations for Question 1 of the student survey are reported in Table 5.

Question 2 of the student survey asked whether the student had received a positive reward for appropriate behavior in the past month. Student answers were coded with a 1 for "No" and 2 for "Yes." A univariate ANOVA, conducted to determine a main effect of treatment by comparing treatment and control means, yielded nonsignificant results. However, when blocked by SES and overall school student body size, there was

Table 4. Ratings on RTI Survey

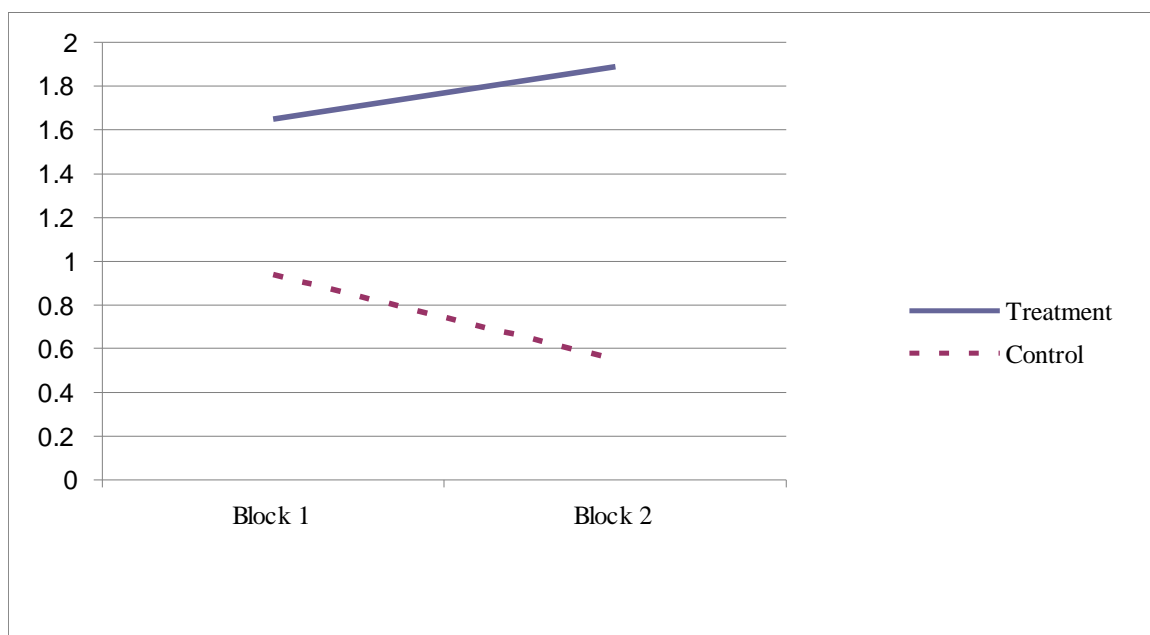|	Perceptions of RTI		Satisfaction with School Model		Perceptions of Own Skills	
	M	SD	M	SD	M	SD
School A1	4.12	(1.11)	3.63	(1.23)	3.80	(.64)
School B1	4.23	(.91)	3.57	(.94)	3.91	(.60)
School A2	4.36	(.60)	4.02	(1.07)	4.03	(.54)
School B2	3.04	(1.21)	2.90	(1.09)	3.33	(.71)
Block 1	4.18	(1.00)	3.60	(.87)	3.86	(.61)
Block 2	3.77	(1.13)	3.52	(1.20)	3.72	(.71)
Treatment	4.25	(.87)	3.84	(1.15)	3.92	(.59)
Control	3.68	(1.20)	3.26	(.84)	3.64	(.71)

Figure 4. Student SET Question 1

a significant interaction between treatment and blocks [$F(1, 1236) = 36.66$, $p < .01$], as indicated in Figure 5. This interaction suggests that when the treatment was applied to Block 1, the treatment school performed slightly worse than the control school in that block, whereas when applied to Block 2, the treatment group responded much more favorably than the control group. Means and standard deviations for Question 2 on the student survey are reported in Table 5.

A second means of answering Research Question 2 was by staff survey—in this case, the Effective Behavior Support: Self Assessment Survey (EBSSAS; Sugai et al., 2000), which measures the implementation of school-wide positive behavior support. For this study, three of the four sections of the EBSSAS were used. The first section addressed the school-wide positive behavior support system. The second section addressed the positive behavior support system in nonclassroom settings, and the third section evaluated the positive behavior support in the classroom setting. In the treatment condition, 41 teachers completed the EBSSAS (18 from School A1 and 23 from School A2), while 39 teachers in the control condition (19 from School B1 and 20 from School B2) completed the survey. The EBSSAS is rated on a 3-point Likert-type scale. A rating of 3 indicates a high level of positive behavior support, 2 is moderate, and 1 is a low level of positive behavior support in the school.

Though univariate ANOVA resulted in no main effect between treatment and control schools, the interaction between treatment and blocks on the nonclassroom setting section of the EBSSAS was significant, with $F(1, 76) = 7.47$, $p < .01$ (see Figure 6). This interaction indicated that when blocked for SES and overall student body size, the treatment was effective for both blocks. Means and standard deviations from the

Table 5. Ratings on Student Survey

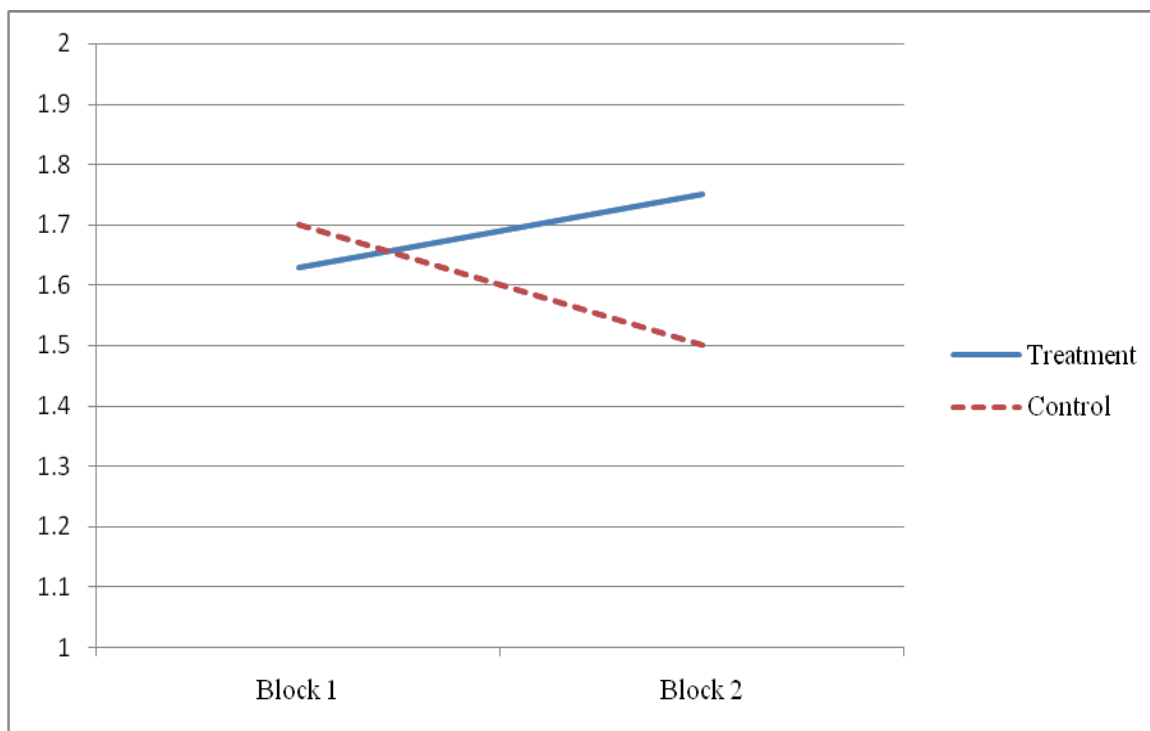|	Question 1		Question 2	
	M	SD	M	SD
School A1	1.65	(.56)	1.63	(.48)
School B1	.94	(.57)	1.70	(.46)
School A2	1.89	(.39)	1.75	(.43)
School B2	.55	(.51)	1.50	(.50)
Block 1	1.32	(.67)	1.66	(.47)
Block 2	1.25	(.82)	1.63	(.48)
Treatment	1.78	(.49)	1.69	(.46)
Control	.72	(.59)	1.59	(.49)

Figure 5. Student SET Question 2

EBSSAS are reported in Table 6. Eta squared analysis indicated that despite

nonsignicant differences between conditions, treatment can have a meaningful effect on

groups, with treatment explaining 92.8% of the variance at the school-wide level, 91% of

the variance in the nonclassroom setting, and 53.7% of the variance in the classroom

setting.

<p align="center">Research Question 3</p>

Is there a difference between ABC-UBI and non-ABC-UBI schools in school

climate reported by teachers?

The question of school climate was addressed by the staff version of the School

Climate Survey (Haynes et al., 2001). The nine categories of the staff version of the

School Climate Survey were the following: (1) achievement and motivation of students;

(2) collaborative decision-making; (3) equity and fairness with which staff are treated; (4)

support of leadership; (5) order and discipline; (6) condition and physical state of school

building; (7) school, parent, and community relations; (8) dedication of staff; and (9) staff

expectations. Items on the School Climate Survey are rated on a 5-point Likert-type

scale, coded from 1 (strongly agree) to 5 (strongly disagree). Thus, on this survey, a

lower score would correspond with a more positive, supportive school climate. Schools

were compared across conditions and blocks on each of the 9 subcategories of the School

Climate Survey by univariate ANOVA, and blocking for SES and student body size.

For the Collaborative Decision Making section of the School Climate Survey, the

ANOVA revealed significant differences between the treatment and control groups, $F(1,$

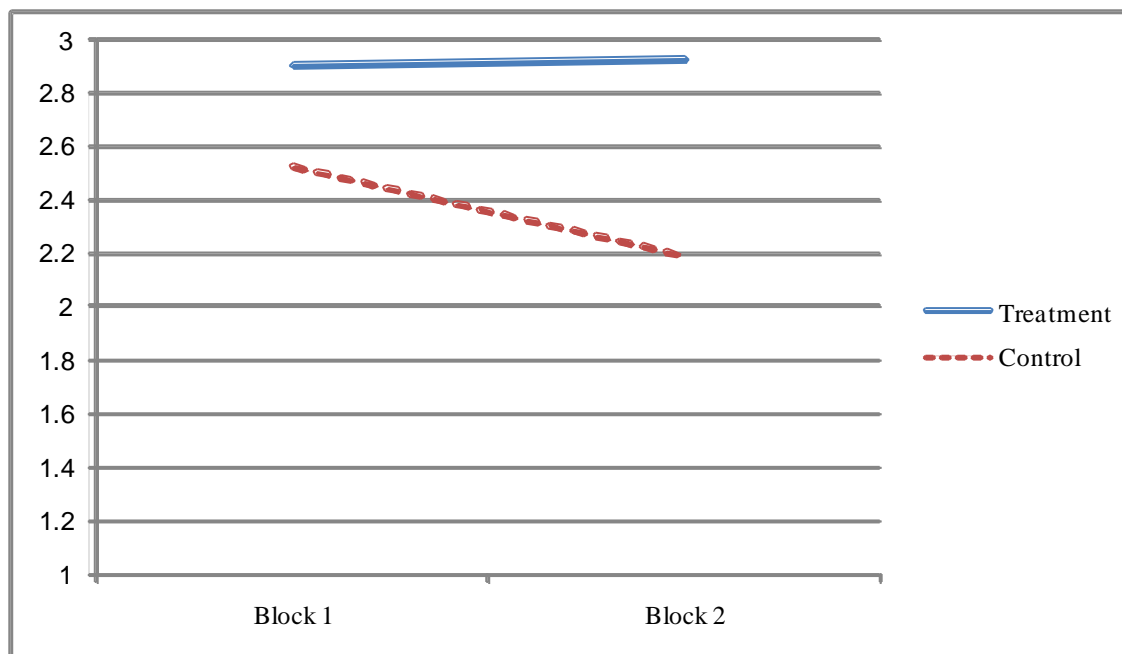$1) = 307.155, p < .05$, with the treatment group having more favorable mean scores than

Figure 6. PBS in Nonclassroom Settings

Table 6. Ratings on EBSSAS

	School-wide		Nonclassroom		Classroom	
	M	SD	M	SD	M	SD
School A1	2.88	(.16)	2.91	(.15)	2.85	(.17)
School B1	2.47	(.21)	2.52	(.27)	2.84	(.12)
School A2	2.76	(.45)	2.93	(.27)	2.94	(.22)
School B2	2.02	(.43)	2.19	(.41)	2.74	(.20)
Block 1	2.66	(.28)	2.70	(.29)	2.85	(.14)
Block 2	2.43	(.57)	2.59	(.50)	2.85	(.23)
Treatment	2.81	(.35)	2.92	(.22)	2.90	(.20)
Control	2.26	(.40)	2.37	(.38)	2.79	(.17)

the control group. Means and standard deviations for the first three sections of the School Climate Survey are reported in Table 7.

The next three sections on the School Climate Survey address leadership in the school, order and discipline in the school, and the physical condition of the building. A univariate ANOVA resulted in no significant main effects for treatment and control groups. However, a significant interaction between treatment and blocks, $F(1, 76) =$ 11.54, $p < .01$; see Figure 7) was detected for the section addressing order and discipline. This interaction showed that as treatment was applied to Block 1, the ratings were more negative (items are reverse scored on the SCS), whereas when applied to Block 2, scores were more positive in the treatment group. Means and standard deviations for the sections of the School Climate Survey that address leadership, order and discipline, and physical condition of the building are reported in Table 8.

The final three sections of the School Climate Survey focus on relations and collaboration between the school, parents, and the community, overall dedication of staff to providing a positive educational experience for their students, and expectations of staff for student, staff, and school success. Comparing mean differences by univariate ANOVA, blocking for student body size and SES, between blocks and treatment conditions resulted in no significant differences or interactions. Means and standard deviations on the final three sections of the School Climate Survey are reported in Table 9.

Table 7. Ratings on SCS Categories 1-3

	Achievement and Motivation		Collaborative Decision Making*		Equity and Fairness	
	M	SD	M	SD	M	SD
School A1	1.74	(.50)	1.99	(.72)	1.28	(.38)
School B1	1.50	(.36)	2.60	(.45)	1.28	(.25)
School A2	1.35	(.39)	2.29	(.69)	1.25	(.44)
School B2	1.58	(.40)	2.66	(.65)	1.38	(.42)
Block 1	1.62	(.44)	2.31	(.66)	1.28	(.32)
Block 2	1.46	(.41)	2.29	(.69)	1.31	(.43)
Treatment	1.53	(.48)	1.99	(.67)	1.26	(.41)
Control	1.54	(.37)	2.62	(.55)	1.32	(.34)

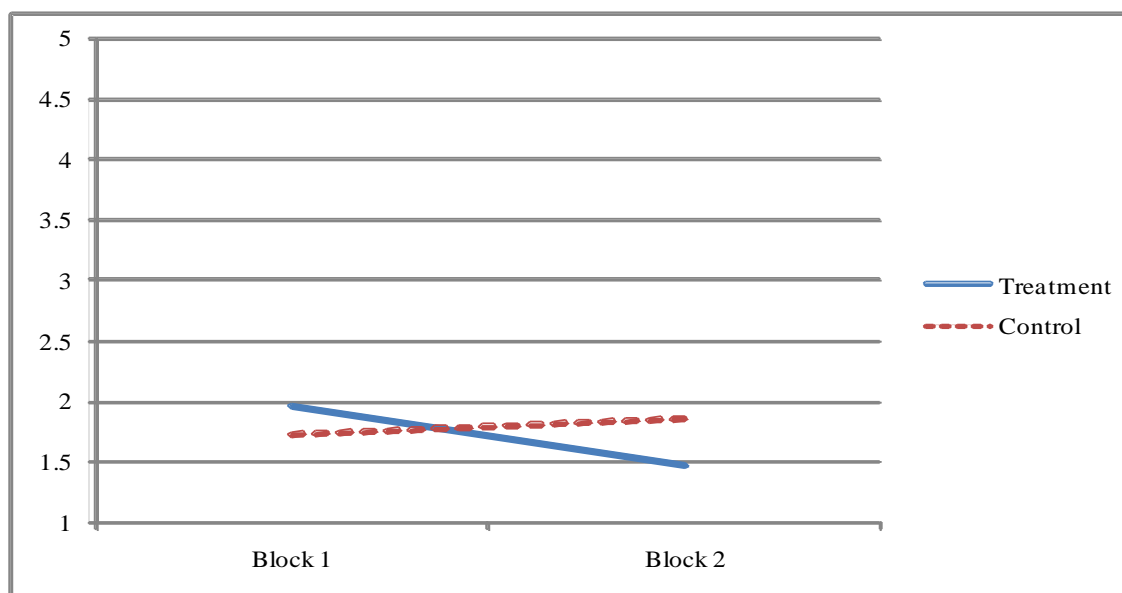*significant difference between treatment and control mean

Figure 7. Order and Discipline Treatment X Block

Table 8. Ratings on SCS Categories 4-6

	Leadership		Order and Discipline		Physical School Building	
	M	SD	M	SD	M	SD
School A1	1.50	(.45)	1.96	(.52)	1.28	(.34)
School B1	2.05	(.71)	1.72	(.34)	1.29	(.26)
School A2	1.42	(.52)	1.48	(.36)	1.15	(.28)
School B2	2.56	(.89)	1.86	(.42)	1.57	(.55)
Block 1	1.79	(.66)	1.83	(.44)	1.29	(.30)
Block 2	1.93	(.90)	1.65	(.43)	1.34	(.47)
Treatment	1.46	(.48)	1.70	(.50)	1.21	(.31)
Control	2.28	(.83)	1.79	(.38)	1.41	(.44)

Table 9. Ratings on SCS Categories 7-9

	School, Parent, and Community Relations		Dedication of Staff		Expectations of Staff	
	M	SD	M	SD	M	SD
School A1	1.45	(.36)	1.28	(.38)	1.34	(.41)
School B1	1.53	(.38)	1.13	(.21)	1.25	(.34)
School A2	1.66	(.52)	1.23	(.30)	1.14	(.27)
School B2	1.44	(.39)	1.43	(.43)	1.24	(.38)
Block 1	1.49	(.37)	1.21	(.31)	1.29	(.36)
Block 2	1.56	(.47)	1.32	(.37)	1.18	(.32)
Treatment	1.56	(.46)	1.26	(.34)	1.23	(.35)
Control	1.49	(.38)	1.27	(.36)	1.24	(.34)

<u>Research Question 4</u>

Is there a difference in end-of-year Criterion-Referenced Test scores between

ABC-UBI and non-ABC-UBI schools?

All student CRT scores were accessed from all four schools in the project from

the Research and Assessment Department of the school district, and when not available,

from the schools directly. In the state wherein this study took place, all elementary

school students from grades 1 through 6 take Criterion-Referenced Tests for both

Language Arts and Math, while only fourth-, fifth-, and sixth-grade elementary students take Criterion-Referenced Tests for Science. CRT scores are reported for this study as percentages of correct answers. Because scores are reported in percent of correct answers, and with the current study attempting to identify successes and deficiencies at the school-wide level, student scores were not separated by grade level.

When blocked for SES and overall size of student body, no significant differences were found by univariate ANOVA between treatment and control group or block mean scores for the CRT for Language Arts, Math, or Science. However, eta squared analyses detected that ABC-UBI participation accounts for 93.6% of the variance in student scores for Language Arts, 57.3% of the variance in student scores for Math, and 84.4% of the variance in student scores for Science. Means and standard deviations for CRT scores are reported in Table 10.

<u>Research Question 5</u>

Is there a difference in DIBELS spring benchmark scores between ABC-UBI and non-ABC-UBI schools?

Table 10. Percentage Scores on Criterion-Referenced Tests

	CRT Reading		CRT Math		CRT Science[1]	
School A1	85.88	(11.75)	79.09	(15.35)	79.47	(12.10)
School B1	85.72	(11.86)	79.21	(16.40)	81.56	(11.84)
School A2	86.60	(12.45)	82.58	(15.16)	81.66	(12.45)
School B2	86.32	(11.82)	81.52	(15.13)	82.50	(10.38)
Block 1	85.80	(11.80)	79.15	(15.89)	80.56	(11.99)
Block 2	86.47	(12.16)	82.10	(15.15)	82.07	(11.50)
Treatment	86.31	(12.17)	81.16	(15.33)	80.76	(12.33)
Control	86.04	(11.84)	80.45	(15.77)	82.08	(11.06)

[1]Note: CRT Science scores are for grades 4-6 only

Developed by Good and Kaminski (2002), the DIBELS benchmarking system is used to measure a child's level of oral reading fluency. Each grade has a different, grade-appropriate benchmark for the minimum of words read per minute at each tri-annual testing period (fall, winter, spring). Spring benchmark scores for oral reading fluency were gathered from each of the schools for all students grades 1 through 6. Those spring benchmark scores were combined to calculate a mean score, then analyzed by separate grades. Differences were compared with the hypothesis that ABC-UBI schools would have higher oral reading fluency scores than non-ABC-UBI schools.

The DIBELS spring benchmark goal for first-grade oral reading fluency is 40 words per minute, the second-grade spring benchmark ORF score is 90 words per minute, and for third-grade students, and the DIBELS spring benchmark is 110 words per minute. Average oral reading fluency scores for all four schools in the study far exceeded the benchmark cutoff score. Mean scores of each school were analyzed using a univariate ANOVA, blocking for SES and school size, and found no significant differences between blocks or conditions. Means and standard deviations for DIBELS ORF scores are reported in Table 11.

Similar to the younger grades, average scores for all four schools' oral reading fluency were above the benchmark for the fourth-, fifth-, and sixth-grades. The cutoff score for the DIBELS spring benchmark ORF is 118 words per minute for fourth-grade, 124 words per minute for fifth-grade, and 125 words per minute in sixth-grade. Means and standard deviations for fourth-, fifth-, and sixth-grade oral reading fluency on the DIBELS spring benchmark are reported in Table 12.

Table 11. ORF Scores for DIBELS Spring Benchmark—Grades 1-3

	First-Grade		Second-Grade		Third-Grade	
	M	SD	M	SD	M	SD
School A1	69.10	(36.43)	111.24	(40.36)	133.25	(33.18)
School B1	77.58	(38.67)	120.39	(35.59)	131.65	(35.03)
School A2	91.76	(38.69)	108.31	(38.42)	120.32	(33.15)
School B2	86.92	(38.44)	128.81	(37.00)	137.30	(38.56)
Block 1	73.79	(37.82)	115.72	(38.27)	132.63	(33.78)
Block 2	89.32	(38.57)	116.03	(39.09)	125.85	(35.79)
Treatment	83.37	(39.34)	109.55	(39.19)	125.44	(33.68)
Control	83.02	(38.73)	124.29	(36.39)	134.69	(36.90)

Table 12. ORF Scores for DIBELS Spring Benchmark—Grades 4-6

	Fourth-Grade		Fifth-Grade		Sixth-Grade	
	M	SD	M	SD	M	SD
School A1	151.15	(41.66)	138.60	(29.17)	159.41	(32.01)
School B1	143.13	(40.23)	151.33	(26.00)	156.21	(30.41)
School A2	144.52	(41.65)	153.49	(28.82)	166.12	(35.67)
School B2	143.49	(37.37)	146.96	(37.67)	157.85	(32.01)
Block 1	147.06	(41.03)	144.82	(28.32)	157.67	(31.10)
Block 2	144.07	(39.73)	150.18	(33.68)	161.79	(33.99)
Treatment	147.23	(41.69)	147.06	(29.83)	163.42	(34.32)
Control	143.32	(38.66)	148.77	(33.33)	157.16	(31.29)

While no significant main effect was found between treatment and control conditions in any of the grades 4 through 6 using univariate ANOVA, a significant interaction between treatment and blocks was found [$F(1, 421) = 9.87$; $p < .01$; see Figure 8] for fifth-grade oral reading fluency. In this particular interaction, when treatment was applied to Block 1, ORF scores were actually lower on the fifth-grade DIBELS spring benchmark. When treatment was applied to Block 2, however, the treatment schools ORF scores went up and were higher than its control group counterpart.
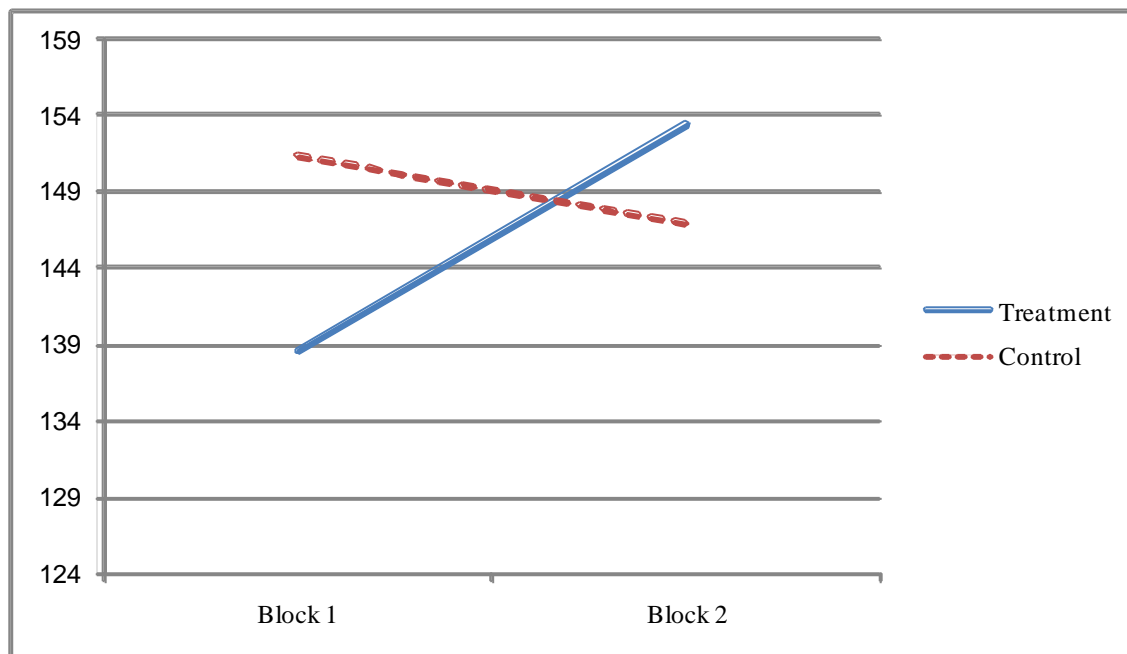
Figure 8. Grade 5 DIBELS Treatment X Block

CHAPTER 4

DISCUSSION

Carrying out the present study and analyzing the resulting data provided some insight into how well the ABC-UBI program is operating in terms of several outcome variables and where it may be able to improve. As is often the case in applied research, the study also brought additional questions into light, which will be discussed herein.

By supporting schools with academic and behavior support, the mission of ABC-UBI is to improve student academic and behavior outcomes by "the implementation of effective…support systems in…schools" (UPDC, 2010b). The primary purpose of this study was to determine the degree to which the ABC-UBI program may be impacting the schools it serves by comparing two ABC-UBI schools with two schools that did not receive ABC-UBI funding or technical support. The ABC-UBI program aims to impact student achievement outcomes along with teacher attitudes and knowledge regarding positive behavior supports and response to intervention in the schools. In order to determine the effectiveness of the ABC-UBI program, this study tested both the main effect of the treatment on groups, as well as the interaction between treatment and blocks. Schools were matched based on SES and overall size of the student body. Block 1 had schools with relatively smaller student body size and relatively lower SES (based on the percentage of students receiving free or reduced lunch) than schools in Block 2. The present study found several occurrences of significant interactions between treatment and

blocks. All significant effects and interactions along with common trends are discussed herein.

<center>Response to Intervention</center>

Teacher perception of RTI is often a predictor of readiness to effectively implement an RTI model (Castillo et al., 2010). Therefore, in this study, surveys were used that addressed teacher perception of skills related to RTI to as an indicator of a school's readiness to implement RTI. In the teacher survey addressing RTI readiness, there were two significant interactions between treatment and blocks, both demonstrating similar trends. On the sections of the RTI survey that addressed teacher perceptions of and ability to implement an RTI model, the present study found that as treatment was applied to Block 1, ratings by teachers were relatively similar to one another, in that the control group showed slightly more positive perceptions about RTI and skills to implement RTI than the treatment group, although this difference was not significant. Based on this finding, one can draw the conclusion that the treatment for Block 1 did not differentially impact the treatment school in regard to RTI perceptions and RTI skills. In Block 2, however, teachers in the treatment condition responded positively to the treatment while the teachers in the control group in Block 2 offered more negative ratings about RTI perceptions and skills.

There is some question as to why the treatment school in Block 2 may have responded better to the intervention than Block 1. Looking at the mean scores of each school on the RTI survey items, it appears that three of the four schools have relatively close scores to one another. Respective mean scores on the two sections in which significant interactions were found for all schools were as follows: 4.12 ($SD = 1.11$) and

3.80 ($SD = .64$) for School A1, 4.36 ($SD = .60$) and 4.03 ($SD = .54$) for School A2, 4.23 ($SD = .91$) and 3.91 ($SD = .60$) for School B1, and 3.04 ($SD = 1.21$) and 3.33 ($SD = .71$) for School B2. Addressing the mean scores together without taking blocks into account, it is apparent that means for three of the schools were clustered together, and the means for School B2 were substantially lower. At a glance, it would appear that School B2 might be an outlier in regard to teacher RTI perceptions and RTI skills. However, more likely is the possibility that School B1 is an anomaly. Though it had not participated with ABC-UBI, it had many characteristics consistent with an ABC-UBI school. There were rules posted in public places and fully functioning data teams that met weekly to discuss struggling students and methods to catch them up using RTI. Implementation of school-wide PBS was evident with public posting of students who had earned lunch with the principal as part of their PBS at tier 1. The more time spent in School B1, the more it appeared to be functioning as an ABC-UBI school would be operating. Therefore, it is quite possible that School B1 raised the mean scores for the control group. With a total sample size of four schools, one outlier can dramatically affect the outcome of interactions even when blocked for similar characteristics. The benefit of a larger sample size is that the effects of outliers are not as impactful (Marsh, Balla, & McDonald, 1988).

Whereas the two sections of the RTI survey previously discussed resulted in significant interactions between blocks, the School Personnel Satisfaction portion of the RTI survey resulted in no significant interaction between blocks. This portion of the RTI survey addresses staff's perceived support from administrators in implementing RTI. Burns et al. (2005) recommend early and abundant administrator support for teachers in the implementation of RTI. The district in which the present study was conducted

provided foundational RTI trainings for administrators across the district that focused on

setting up problem-solving teams and providing this early support for teachers. It is quite

possible that all schools were more comparable with no block interaction in this area due

to district-wide trainings. While the level of RTI implementation varies from school to

school, all administrators received these district trainings in the previous year leading up

to the present study. This may have led to the nonsignificant interaction between

treatment and blocks on the Personnel Satisfaction portion of the RTI survey due to

teachers' perceived support from administrators.

Because these trainings did not extend beyond providing support for teachers in

the RTI process, participation in the ABC-UBI program may have impacted block means

and interactions for specific skills and perceptions of RTI more than it impacted

personnel satisfaction, or perceived school support, in implementing RTI. The schools

may have staff who perceive high levels of support from their administrators, but they did

not report being more skilled effectively implementing RTI.

<u>School-Wide Positive Behavior Support</u>

Handler et al. (2007) outlined the importance of teaching and posting school rules.

They noted that students are much more likely to follow the school rules if they know

them. Along with knowing the rules, an effective PBS model also has a specific school-

wide reinforcement program to promote positive behavior (Handler et al., 2007).

Therefore, as part of this study, students were asked to complete surveys addressing the

school rules and school-wide reinforcement system. In the student survey, the

interactions between treatment and blocks indicated that the treatment was effective for

both treatment schools regardless of block on the first question (naming the school rules),

meaning that treatment schools accurately named more rules than control schools. The interaction also revealed that the students in the treatment school in Block 2 (School A2), the block with larger schools and higher student SES, were able to name more rules than the treatment school in Block 1 (School A1) when compared to the control groups in each respective block. There was a different trend, however, on the second question of the student survey. This question asked whether students had received a reward for positive behavior in the previous month.

Student responses demonstrated a similar trend on the second question of the survey. In School A2 ($M = 1.75$, $SD = .43$), students were more likely to receive positive reinforcement for appropriate behavior than students in School A1 ($M = 1.63$, $SD = .48$). In this case, in Block 2 when treatment was applied, responses by students in School A2 indicated they were more likely to receive positive reinforcement than students in School B2 ($M = 1.50$, $SD = .50$), whereas in Block 1, the treatment did not result in students in School A1 reporting receiving more rewards for positive behavior than students in the control school B1 ($M = 1.70$, $SD = .46$).

Thus, in both cases, the data from the student surveys would suggest that the treatment school in Block 2 benefited more from participating in the ABC-UBI program than the treatment school in Block 1 in terms of school-wide PBS as assessed by student survey. Similar to the previous research question, a possible contributing factor is that the responses from students in School B1 were relatively high given that it functions more similarly to an ABC-UBI school than to a non-ABC-UBI school, which may have resulted in a smaller gap between the two schools in Block 1 (Marsh et al., 1988).

It seems feasible that the treatment groups both performed better on the student survey on the first question of naming rules, since that is a primary focus of the PBS component of ABC-UBI training (UPDC, 2010b). Furthermore, though results were nonsignificant, participation with ABC-UBI accounts for 91.5% of the variance in the student survey data. Significance was difficult to attain with the small sample sizes in each group, but an eta squared of .915 indicates that there is a meaningful benefit from ABC-UBI participation. The research of Handler et al. (2007) drives ABC-UBI's focus on posting and teaching the school rules. In their practical guide to assist educators with the practical application of PBS implementation, Handler et al. (2007) stated very clearly that a key PBS principle is defining and posting school rules.

ABC-UBI also focuses on school-wide reinforcement systems (UPDC, 2010b), so one would expect that the treatment schools would indicate higher levels of positive reinforcement on the second question of the student survey. Interestingly, though, there was no difference between conditions on the student survey question addressing receipt of positive reinforcement. This could be explained by the format differences on the student survey between the two questions. The fill-in-the-blank style of the first student survey question provided accurate information on student knowledge in the area. The students either named the rules correctly, or they did not. The cut-and-dry nature of this question made it easier to distinguish whether a student had actually learned the school rules. The second question was more subjective than the first and consequently a more difficult source from which to draw information. In asking a student whether they had received a reward for positive behavior, one student may remember being praised and

circle 'Yes,' while another may have received the same praise and circle 'No' because it was not perceived as a reward.

On the School Evaluation Tool (SET; Sugai et al., 2001), the original question is asked using the specific name of the reinforcement currency used in that particular school (e.g., "Star Buck"). Probably to avoid the confusion experienced among teachers and students alike in this study, much of the practical research on PBS discusses the importance of a uniform, specific reinforcement system (Handler et al., 2007; Sugai et al., 2000). That was not feasible for this project, though, because some of the targeted schools had several types of specific reinforcement systems and tokens while others had no specific reinforcement program in place. Thus, it was determined that the least biased method was to ask if students had received "a reward." This use of general terminology rather than specific reward names may have introduced a degree of subjectivity, possibly resulting in a less accurate representation of the students' perceptions of the reinforcement systems set up in the schools in this study.

Also addressing school-wide PBS was the participating teachers' responses on the EBSSAS. An interesting interaction was found between treatment and blocks on the EBSSAS responses. Though no main effect was found, trend lines for both blocks showed that teachers rated the positive behavior support in their schools for nonclassroom behavior problems (e.g., hallways, cafeteria, etc.) higher in the treatment condition than the control. That is, when treatment was applied to either block, the treatment schools were more likely to report effective PBS strategies in place for nonclassroom settings than the control schools in their respective blocks. This, again, could be due to School B1 having unusually high scores for a non-ABC-UBI school, thus

decreasing the gap between its ratings and those of School A1. Since it appeared that

staff at School B1 had bought into the PBS and RTI philosophy, School B1 was operating

in some ways much like an ABC-UBI school. Therefore, scores on the EBSSAS were

relatively similar to those of the treatment schools. It is also important to note that though

nonsignificant differences were found between conditions, ABC-UBI participation

accounted for 92.8% of the variance for the school-wide level of PBS implementation,

91% of the variance for nonclassroom settings, and 53.7 of the variance for the classroom

setting. These results support the notion that significance was very difficult to attain due

to lack of power, but that does not necessarily mean that the treatment is not meaningful.

Eta squared calculations offer some indication that treatment is meaningful for PBS

implementation due to its accounting for large percentages of the variance.

School Climate

Another significant interaction between treatment and blocks was found on one of

the sections of the Staff School Climate Survey. In this case, teachers from School A1

reported lower levels of order and discipline in the school than School B1, the control

school in its block. Conversely, School A2 reported higher levels of order and discipline

than the control school, School B2, in Block 2. In this case, one of the treatment schools,

School A1, reported the lowest level of order and discipline of the four schools in the

study, while School A2 reported the highest. It is difficult to determine the reason why

such a discrepancy would occur between the two treatment schools in this area of the

survey. On a graph, the discrepancy appears much larger than it really is, with School A1

reporting a mean rating of 1.96 (SD = .52) and School A2 reporting a mean rating of 1.48

(SD = .36) both out of a possible five points. This suggests that School A2's mean score

fell midway between 'Strongly Agree' and 'Agree,' whereas School A1 provided mean ratings closer to 'Agree.' Thus, although there is a discrepancy of .48 points between the treatment schools, all group scores were relatively close to one another. Another explanation may be that with a sample size of two schools in the treatment group, a different administrative style within each school could account for some of the variance on this measure. Though the block interaction for order and discipline was significant, it is difficult to attribute the variance solely to treatment, as there were a variety of variables that may have contributed.

Beyond order and discipline in the school, there were no other significant interactions between blocks on the School Climate Survey. There was, however, a significant main effect of treatment. Univariate ANOVA detected a significant difference between treatment and control groups in the area of collaborative decision-making on the school climate survey [$F(1, 76) = 11.54, p < .01$]. ABC-UBI schools reported significantly higher ratings of collaborative decision-making than non-ABC-UBI schools. The collaborative decision-making portion of the School Climate Survey addresses how well the school involves all staff (not solely teachers) and students in decision-making (Haynes et al., 2001). The items addressing collaborative decision-making on the School Climate Survey ask about the degree to which nonteaching staff and parents are given opportunities to express their views, and the opportunities teachers are given to express their views and to work together as teams to solve problems and increase student learning.

This collaboration is necessary, according to Sugai and Horner (1999), among administrators and staff members and students' parents when necessary. If parents and

staff feel like administrators approach problems from a "team" perspective including parents and staff, the collaborative environment often trickles down to staff and even students, thus enhancing the school climate as a whole (Sugai & Horner, 1999). Consequently, ABC-UBI trains their participating schools on setting up collaborative environments (UPDC, 2010b). A major focus of ABC-UBI is to establish data and problem-solving teams within each school to collaborate in solving problems and developing curriculum. The significant difference in collaborative decision-making between the control and treatment schools likely comes from the specific training that ABC-UBI schools experience. Teacher responses on the School Climate Survey would indicate that ABC-UBI has been successful in this endeavor.

Though the assistance ABC-UBI provides schools with PBS implementation would theoretically improve school climate, ABC-UBI does not specifically target school climate. Perhaps the fact that ABC-UBI does not provide direct assistance related to school climate improvement can explain the limited interactions between blocks for the school climate measure. Another possible explanation for the lack of significant differences between treatment and control schools in the present study is that changing school climate is often a very slow process. According to Freiburg (1998), climate change can take several years. He encourages schools to frequently measure school climate improvements to adapt and change over the years. Given Freiburg's research, it is not surprising to see limited differences in school climate between conditions since the treatment schools were only in their second year of ABC-UBI implementation.

Academic Outcomes

Along with the survey data, it is important to address the trends seen in the student outcome data such as on end-of-year CRTs and DIBELS benchmarks. On CRT, with only one degree of freedom, the treatment group did not have significantly higher scores than the control group. Eta squared analysis did reveal, though, that the treatment was accountable for 93.6% of the variance in student scores for Language Arts, 57.3% of the variance in student scores for Math, and 84.4% of the variance in student scores for Science. With only one degree of freedom in each condition, however, even accounting for such large percentages of the variance, there was not enough power to detect significance. Eta squared tests indicate, though, that participation in ABC-UBI can enhance student achievement.

Presently, ABC-UBI's primary areas of focus are in reading, math, and school-wide positive behavior support. There is little emphasis, though, on other academic areas such as Science. Given that the ABC-UBI schools actually performed worse on the Science CRT than the non-ABC-UBI schools while better in Language Arts and Math could be an indication of some treatment effect in that ABC-UBI schools may be concentrating efforts in particular areas (reading, math, PBS), and subsequently neglecting other areas of focus, such as science achievement.

Univariate one-way ANOVA detected a significant interaction between treatment and blocks on DIBELS ORF scores for fifth-grade students. In this instance, School A1 was again the lowest scoring school, while School A2 was the highest. This interaction indicates that participation with ABC-UBI had more of an effect in elevating ORF scores

for fifth-graders in Block 2 versus fifth-graders in Block 1. Interestingly, the only significant interaction for DIBELS ORF was found in the fifth-grade outcomes.

Given that this study examined only one benchmark score for all grades, it is possible that there was a distraction or some other occurrence in School A1 on the day of DIBELS testing that could have impacted benchmark scores. It is also possible that one of the schools had either a particular high or low scoring fifth-grade cohort at the time of this study. Some research, for example, has questioned the predictive validity of DIBELS for actual reading scores on end-of-year tests such as the Iowa Tests of Basic Skills. This research discusses the fact that benchmark scores are snapshots of a student's reading ability, and student performance on ORF benchmarks can vary from day to day (Schilling, Carlisle, Scott, & Zeng, 2007). Thus, it is possible that a glimpse of one benchmark period may not be a completely accurate representation of students' overall reading achievement.

With a major focus of ABC-UBI on reading (UPDC, 2010), it was surprising to not detect a significant difference between ABC-UBI and non-ABC-UBI schools on DIBELS ORF scores. Aside from the significant interaction between treatment and blocks for fifth-graders, there were no other significant differences on the DIBELS ORF measure. In fact, there were not even common trends with DIBELS ORF scores as there was with much of the other data for this study, making it difficult to make any inferences or predictions about the reading scores or treatment. One grade, for example, had Block 2 reporting higher DIBELS ORF scores, while another had the control group reporting higher scores. In some cases of DIBELS ORF scores, there was one outlying school either lower or higher with the other three clustered together.

Though the DIBELS data were somewhat inconsistent and difficult to explain, the DIBELS testing, along with CRT scores, provided some insight about what accounts for success on student academic outcomes. Though School B2 was consistently the low outlier for the survey data, it was often the highest-achieving school as measured by the student outcome data. This could be attributable to several factors. First, survey data tend to be subjective, and reliability is sometimes brought into question due to wording on items having an influence on responses (Weems & Onwuegbuzie, 2001). It is possible that even if teachers have negative attitudes or inexperience in cutting-edge teaching practices, that student outcomes may not suffer. Gaunt (2009) found that teacher perceptions of RTI is highly situational and does not always imply doubt in their ability as teachers. Though teachers in School B2 provided more negative ratings on the surveys, their ability is not necessarily correlated with their attitudes toward DIBELS, and more particularly reading instruction.

Trends Observed in the Data

Each survey included subscales that were used in this study for separate areas of data analysis. The RTI survey had three sections, the student school rules survey had two sections (two different questions), the EBSSAS had three sections, and the School Climate Survey had nine sections. Thus, there were a total of 17 sections, and consequently 17 separate analyses between Block and group means. The treatment group reported more favorable scores on 16 of the 17 possible areas of analysis, although these differences were frequently not significant.

Though the treatment group reported more favorable scores on the majority of the domains measured by survey, since there were only two schools in each condition, only

one degree of freedom was available in each condition, making statistical significance difficult to attain. For example, on the student survey that asked students to name the school rules, answers were coded as: 0 (no rules named correctly), 1 (some, but not all rules named correctly), or 2 (all rules named correctly). The treatment group reported an average score of 1.78 (SD = .49) compared to .72 (SD = .59) for the control group. That is a difference of 1.06 points and total possible points range from zero to two. Though there was more than a full point difference between the two groups, which seems relatively large, this difference was not statistically significant due to the limited degrees of freedom.

A possible explanation for the nonsignificant differences between groups on the survey items is overall teacher attitude differences. For the most part, survey ratings were dependent on teacher perceptions. There is the possibility that teachers in the ABC-UBI schools had slightly better attitudes regarding RTI, positive behavior support, and school climate after going through the numerous trainings provided by ABC-UBI staff. In fact, there is some evidence that teacher attitudes are important for change. Teachers with negative perceptions about their administrators or new practices are often not open to training and modification, and changing behavior and attitudes are consequently very difficult (Miller, Ferguson, & Moore, 2002).

Another interesting trend in the survey data was that School B1 often had higher teacher ratings across measures than the other school in the control group, School B2. With only two schools in each condition, one school with particularly high or low ratings can pull the mean scores up or down for its group significantly. The blocked data also may have been impacted by the higher ratings of School B1. There was also some

evidence of some unrest among staff members at School B2, possibly resulting in some lower ratings on school climate measures. Some teachers made some negative comments to the researcher. Several teachers at School B2 indicated that they were fearful that their responses would be held against them if they participated in the study. While the other schools had a 'drop-off box' in the main office for the anonymous surveys, many teachers in School B2 were uncomfortable leaving them in the office due to fear of repercussions for negative ratings about the school or administration.

In addition, several teachers in School B2 openly complained verbally to the researcher about the climate of the school and lack of support they felt from the administration. Yet in spite of the seemingly negative undertones expressed by some teachers in the school, other teachers approached the researcher to warn of a few negative teachers in the school that were unhappy with the administration. They believed these negative feelings of a few teachers were not representative of the whole. Whether or not there truly was a negative or coercive climate at School B2, there was clearly a schism between staff and their attitudes toward the school administration in general, which could indirectly affect overall school climate.

Given the negative attitudes about the climate in School B2 expressed by some of the teachers, it begs the question: Why was School B2 the highest overall achieving school in the study? A possible explanation is the location of School B2; it is located in the highest SES neighborhood of the four schools in the present study. Though this is merely speculation, and more extensive research would be needed to validate the notion in regard to ABC-UBI and outcomes, there is a myriad of research that shows a positive correlation between SES and level of parental involvement in student education (Balli,

1996; Bracey, 1996; Eagle, 1989; Hickman, Greenwood, & Miller, 1995). A meta-analysis studying the correlation between parental involvement and student academic achievement found that parent involvement does indeed have a positive effect on student achievement (Fan & Chen, 2001). Although not specifically addressed by this study, it is possible that in the case of School B2, increased parental involvement could be countering the potential negative climate reported from the some of the faculty. Thus, school SES might in fact be a better predictor of academic achievement than teacher ability or teacher awareness of the latest research practices.

Relative Strengths and Weaknesses of Each School

School A1

Across all domains of the treatment, School A1 had several areas of relative strength along with some areas of relative weakness. Across the three domains of the RTI survey (perceptions of practice, satisfaction with the school's implementation of RTI, and perceptions of the teacher's own skills), School A1 was the strongest on the dimension of teachers' perceptions of RTI. This relative strength indicates that teachers in School A1 understand the concepts of RTI and when it is appropriate to use the model. School A1 reported the lowest score on the RTI survey in the area of teacher perceptions of their own skills to implement RTI. This could be an indication that School A1 responded well to the foundational principles of RTI, a focus of ABC-UBI, yet teachers had some difficulty generalizing that information to actual practice. It is also possible that as teachers attempted to move their positive perceptions of RTI into the realm of practice, they found that they needed additional training to successfully make the transition.

For the student survey, on which students named the rules and stated whether they had received a reward for positive behavior in the previous month, students performed relatively well. With only two total possible points on the question asking students to name all the school rules they could remember, the students in School A1 were able to name 1.65 on average. For the second question, the majority of students indicated that they had received a reward for positive behavior in the previous month with a mean score of 1.37 (*SD* = .48). A goal moving forward for School A1 would be to increase efforts to ensure that all students receive regular rewards for positive behavior.

Also to address school-wide positive behavior support in School A1, teachers completed the EBSSAS. The EBSSAS includes three areas that focus on school-wide, classroom setting, and nonclassroom setting positive behavior supports. Ratings of teachers in School A1 showed teachers rated their school as having relatively high levels of PBS with scores of 2.88 for school-wide PBS, 2.91 in nonclassroom settings, and 2.85 in the classroom setting (out of a possible 3-points in each area). Ratings on the EBSSAS as well as the student ratings on the rules survey both indicate that PBS is a relative overall strength of School A1.

Addressing school climate, School A1 displayed relative strengths in the areas of equity/fairness, the condition of the school building, and the dedication of staff to student learning and creating a positive environment. Relative weaknesses for School A1 regarding school climate were found in questions addressing student achievement and motivation, collaborative decision-making, and order and discipline. While these domains of the School Climate Survey are relative weaknesses compared to the other ratings by teachers in that school, it is important to note that School A1 still had overall

positive responses in regard to school climate and will likely continue to improve in the areas where needed because of the positive climate there.

On student outcomes, School A1 showed a relative strength in Language Arts CRT scores, which were more than six percentage points higher than Math or Science CRT scores, although Math and Science scores were also above the district average. Thus, in its efforts to continually improve student outcomes, School A1 may want to increase its focus on Science and Math instruction.

The other means of assessing student outcomes was by DIBELS ORF scores. It is difficult to ascertain a school's overall reading achievement with DIBELS ORF scores since they are raw scores and are not compared to other students' performance. The only basis of comparison is the benchmark cutoff scores, which are considered the minimum scores a student should receive to attain proficiency. Mean DIBELS ORF scores were above the district benchmarks for all grades, indicating that School A1 is currently achieving above the district average in reading.

School A2

Addressing first the knowledge and abilities of teachers in School A2 to implement an RTI model, School A2 showed a relative strength in teacher perceptions of RTI, suggesting that teachers believe they understand the concepts associated with RTI. School A2 demonstrated relative weaknesses in their satisfaction of the school's implementation and perceptions of their own skills to implement the RTI model. With School A2 being an ABC-UBI school, its relative strengths and weaknesses could be an indication that the extensive training teachers in ABC-UBI schools undergo is having an

impact on teachers' knowledge of RTI, but is not as impactful on the practical

applications of RTI.

To assess the implementation of positive behavior supports in each school,

students completed a survey about rules and rewards from staff. Of the students surveyed

in School A2, that majority of students accurately named the school rules. With two total

points possible on the student surveys, its mean score of 1.89 indicates that School A2

emphasizes school rules and posts them in public places for the frequent reference of

students. On the second rules question, a majority of students indicated they had received

a reward for positive behavior in the previous month. Though there is always room for

improvement in positively reinforcing students for appropriate school behavior, School

A2 seems to be keeping on top of maintaining a positive environment for its students.

Also addressing positive behavior supports in each school, teachers completed the

EBSSAS, which focuses on the implementation of PBS from the perspectives of teachers.

According to teacher ratings on the EBSSAS, School A2 has relative strengths in

implementing PBS at the classroom and nonclassroom settings, with nearly all teachers

rating PBS to be 'In Place' in these settings. The lowest rating on the EBSSAS was on

the section addressing school-wide implementation of PBS. While the mean rating on

this section was still close to the maximum score possible of 2, it was a relative weakness

for School A2 and a potential area of focus for future improvement.

The third survey focused on school climate. On the nine separate domains of

school climate addressed by the School Climate Survey, ratings of staff in School A2

resulted in relative strengths in the areas of staff expectations for student success, the

physical condition of the building, and the dedication of staff to student learning.

Relative weaknesses for the school climate ratings for School A2 were in collaborative decision-making, order and discipline, and relations between the school, parents, and the community. As with other ratings by staff in School A2, the ratings in these areas were still quite high, but were relative weaknesses compared to the other ratings provided by staff.

For outcomes on the CRT measures, School A2, similar to the other ABC-UBI school, reported its highest scores on the Language Arts CRT. Science and Math CRTs were lower, relatively, but both were still above the district average. School A2 had strong overall outcomes on the DIBELS ORF spring benchmarks.

School B1

Staff in School B1 showed a similar trend to the ABC-UBI schools, in that a relative strength for School B1 was the staff perceptions of RTI. Like the ABC-UBI schools, School B1 reported relatively high levels of understanding the concepts of RTI. The satisfaction of the school model as well as personal ability to implement an RTI model were relative weaknesses for School B1. Given that School B1 had no exposure to ABC-UBI and still reported high levels of understanding of the RTI model is a positive indication for the direction of the school as a whole.

For the student survey addressing knowledge of school rules, students struggled to name the school rules. An average of less than 1.00 on this survey indicates that the majority of the students were unable to correctly identify even one of the of the school rules. With a mean of .94, it appears that this is an area of weakness for School B1. Focusing on teaching students the school rules and posting the rules in public places around the school would help students remember the rules and consequently follow them.

Though students in School B1 showed some difficulty naming the rules, it reflects positively on the teachers and administration in School B1 that the majority of students responded that they had received a reward for positive behavior in the month prior to completing this survey. This positive response from students suggests that teachers and administrators are maintaining a positive environment and focusing on the positive behavior of their students—a foundational principle of successful PBS. Student responses on the second question addressing positive rewards was an area of strength for School B1.

On the EBSSAS, which also addresses PBS, School B1 showed relative strength in the area of positive behavior support in the classroom setting. According to the responses on the EBSSAS, teachers in School B1 feel like they have adequate support on maintaining a positive environment in their classrooms. Teacher ratings for School B1 in the other two areas of the EBSSAS, school-wide and nonclassroom settings, were not as high as ratings on the classrooms settings portion. The ratings on the other sections, however, were still quite high and show that School B1 is taking strides to maintain a positive environment for their students. This suggests that teachers currently focus their efforts in the classroom rather than outside the classroom, which is typical of a traditional, non-PBS approach.

On the School Climate Survey, School B1 showed relative strengths in the areas of equity/fairness of staff, dedication of staff to students and performing well at their jobs, and expectations of staff for student success. It is interesting that these areas all focus on students and show that staff in School B1 are likely trying to make their school a positive environment for students. Relative weaknesses with the school climate in

School B1 were collaborative decision-making, order and discipline, and leadership in the school. While these areas still averaged to be rather high for the survey (most teachers marked 'agree' rather than the highest rating 'strongly agree'), they were still relatively low compared to the other ratings by School B1 and could targeted as areas for improvement.

On CRT measures, School B1 showed a similar pattern to the treatment schools, reporting a relative strength in Language Arts CRT measures. Its lowest area of performance on the CRT was in Math, and Science was slightly higher. Similar to the ABC-UBI schools in this study, School B1 may benefit in focusing more on enhancing Math and Science instruction. On the other outcome measure for this study, DIBELS ORF scores, School B1 was still well above the district average in DIBELS ORF and CRT scores. Overall, it appears that School B1 could transition into ABC-UBI participation relatively easily, as their staff attitudes seem to show a degree of readiness to implement school-wide PBS and RTI.

School B2

On the RTI Survey, teachers in School B2 broke the common trend seen in the other three schools in the present study, showing a relative strength in teachers' perceptions of their own abilities to implement an RTI model. Their perceptions of RTI as well as their satisfaction of their school's implementation of RTI were relative weaknesses. This could be an indication that School B2 has potential to improve in its RTI delivery since teachers feel relatively confident implementing components of such a model and may only lack training and support to do so.

For the structure of positive behavior support in School B2, students had difficulty naming the school rules. In fact, the majority of students were unable to name even one of the school rules correctly. Talking with administrators and teachers revealed some confusion on the actual school rules and student expectations, which clearly trickled down to the students not fully grasping what the school rules were. In spite of the student struggles to name the rules, a relative strength of School B2 was rewarding students for positive behavior. Approximately half of the students said they had been rewarded for positive behavior in the month preceding taking the survey. While there is some room for improvement in teaching the school rules to all students, School B2 showed that there is still a focus on recognizing and rewarding positive behavior.

Teachers on the EBSSAS indicated that the highest level of positive behavior support is found at the classroom level. School-wide and nonclassroom settings did not receive as high of scores as the classroom settings on the EBSSAS, showing those areas to be relative weaknesses for School B2. This reflects a traditional model in that teachers tend to focus their efforts on impacting students' behavior primarily within the classroom.

Collaborative decision-making was an area included on the School Climate Survey whereon School B2 showed a relative weakness. In fact, most teachers who responded indicated that little collaboration takes place in their school. Other weaknesses on the School Climate Survey for School B2 were in the areas of leadership and discipline. Relative strengths on the School Climate Survey were in the areas of equity/fairness with which students are treated, dedication of staff, and expectations of staff for student success. Items involving direct teacher interaction with or attitudes

toward students were relative strengths, while relatively lower responses were in areas of team cohesiveness such as leadership, collaborative decision-making, and collaboration.

On student academic outcomes, School B2 showed to be a relatively high-achieving school with a similar trend on the CRT measures as the other three schools in the study. Language Arts CRT scores were its relative strength, while students struggled more on Math and Science CRT measures. DIBELS ORF scores were also relatively high for School B2. School B2 was the most intriguing school in this study. While its teacher and student survey scores were the lowest, it was possibly the highest-achieving school academically in the study. This phenomenon supports the notion that higher SES parents are possibly more involved at school, and parents who are more involved in their children's lives at school have higher-achieving students. In fact, according to this study, living in a higher SES neighborhood is possibly a better predictor for school success than many of the measures now available to schools today.

Limitations

A primary limitation to the present study was the limited degrees of freedom due to the small sample size that resulted in reduced statistical power. In many cases, differences between raw scores were quite large, but an ANOVA with only one degree of freedom resulted in a lack of sensitivity to detect any differences. What seemed to be clear differences between ABC-UBI and non-ABC-UBI schools resulted in nonsignificant results for the main effect of treatment. Aside from difficulty detecting significance, this limitation also made some of the interpretation of the data speculative, which makes it difficult to attribute interpretations with confidence due to a sample size of only two in each group.

A second limitation with the present study was that the selected schools were not homogenous within groups. In order to maximize power with HLM, the ideal method of statistical analysis for the nested data in this study, schools within each condition must be homogenous in order to analyze the data at the first level of nesting (teacher or student). If schools within each group are not homogenous, data must be analyzed at the school or treatment levels, resulting in much fewer degrees of freedom and consequently substantially less statistical power to detect differences between groups. Schools A1 and A2 were not homogenous, nor were Schools B1 and B2. Consequently, a block design was used, resulting in a loss of statistical power and therefore limited significant results.

A third limitation of the present study was that it focused on the current state of each school rather than tracking relative progress. This study took a one-time snapshot and compared the snapshot to one-time snapshots of other schools. There are a few results in the data that are open to the influence of chance and other random variables. It is possible that there are lower- or higher-achieving grades within the selected schools or they may have recently undergone a large staff turnover or staff changes within the school. Similarly, there are variables pertaining to the administration at the school and district levels that potentially could have impacted the data for the year it was collected. It is also possible that any of the four schools may have made very large gains from the previous school year or slow and steady gains over time, but the design of the present study prevented the detection of such progress.

A one-time snapshot makes drawing conclusions difficult also because of budget issue. There have been many budget cuts across the education system as a whole. It is difficult to pinpoint where those cuts have had the largest impact, but taking a one-time

look at data during an era when schools are struggling with shrinking budgets may provide ABC-UBI schools with an unfair advantage. It is possible that some schools are affected more negatively by budgetary issues than others. School budget adds another random variable to the study, making it more difficult to draw definitive conclusions.

Fourth, survey results are based on perceptions of staff and students only. Staff perceptions and student survey responses were not validated by observations or any other means. The ratings were dependent solely on staff ratings, which could have produced skewed results. It is possible that staff could have inflated their responses on some of the survey items—especially for a teacher in a non-ABC-UBI setting. For example, a teacher in a non-ABC-UBI school may be aware of an evidence-based teaching method such as RTI, but might not want to admit that he or she is not skilled in implementing RTI, consequently rating himself or herself as higher on a survey addressing RTI.

Implications for Future Research and Practice

To mitigate the limitation of limited degrees of freedom and small sample size, a replication study in the future with a larger sample size may yield more significant findings. Presently, a larger sample size is not a viable option for a research project addressing the effectiveness of the ABC-UBI program due to the limited number of participating schools in the targeted district and those schools being at different stages of technical assistance. As more schools participate with ABC-UBI in the future, there will hopefully be a larger database in order to ascertain how these schools differ in their outcomes. As Keppel (1991) discussed, larger sample sizes equate to more statistical power, which results in more reliable research "that others can depend on and duplicate if they were to repeat the experiments" (p. 73).

Recognizing the importance for statistical power, another possible future direction for research on ABC-UBI to address the limited degrees of freedom experienced in the present study would be to extend the study beyond one school district. With the dozens of schools that participate in the ABC-UBI program across the state, sample size would no longer be an issue. Conducting such a study, however, would provide some obstacles with nested data. The data in this study included three levels of nesting: teachers or students nested in schools, which were nested in treatment or condition. If research was to extend beyond one school district, this would add a fourth level of nesting (teacher/student, schools, districts, treatment/control) which is not possible to analyze statistically with hierarchical linear modeling (HLM) and other statistical methods would need to be used. With a larger sample size, a blocking design might have enough power to reliably detect differences between groups.

It would be beneficial for a future study to gather preliminary data through a pilot study on schools to determine homogeneity before selecting control schools. An option would be to select several schools matched on SES and other important factors, as done in the present study. After selecting several possible participating control schools, it would be beneficial to have preliminary data collected from the control and ABC-UBI schools for comparison. A simple univariate ANOVA could determine significant mean differences; if no significant differences were detected, homogeneity could be assumed, thus making HLM an option for statistical design. This type of study would have more power, and thus be more sensitive in detecting differences between groups. There are definite benefits of collecting preliminary data to determine ideal sample sizes as well as matching schools for HLM. By conducting a pilot study in which a few selected

treatment conditions are compared or addressing similar experiments conducted by others, researchers can make educated inferences about sample sizes needed and estimating effect sizes (Aberson, 2010).

Another study in the future could compare school progress over time with ABC-UBI schools and non-ABC-UBI schools. Longitudinal studies are advantageous because they "can reveal the impact of the particular circumstances in which students grow and reflect student real longitudinal growth" (Wang, Jiao, & Jiang, 2009, pp. 4-5). A more longitudinal approach would thus be useful in tracking each school's relative progress in order to determine the ongoing impact of the ABC-UBI technical assistance. While this study looked at and compared schools within one school year, it does not adequately capture the potential of different starting points for each school when they began the ABC-UBI program. Too many uncontrolled variables could have impacted the results. More details regarding the impact of ABC-UBI may be possible using a longitudinal design that follows a school's growth within the domains assessed in this study compared to a similar non-ABC-UBI school's growth within the same period. The training model used by ABC-UBI (continual improvement and in-house staff training) may be more conducive to this type of longitudinal design. A longitudinal study of this nature could provide additional insight about the overall effectiveness of ABC-UBI within each of its target schools. It might also be useful to use school SET data as a preliminary evaluation as to whether schools might benefit from participating in the ABC-UBI program.

Given the high level of academic achievement reported by School B2 despite its reported negative climate, an implication herein is that ABC-UBI could adapt to address parental involvement more extensively. Sheridan et al. (2009) discuss the need to include

parents in any intervention assisting children. The researchers list several advantages of

including parents in intervention that include "promoting consistency across settings and

systems, thereby promoting maintenance and generalization of treatment

effects…empowering parents…and developing knowledge, skills, and competencies to

promote continued effective problem solving between family members…and school

personnel" (pp. 108-109). Perhaps ABC-UBI could employ more of a community-based

approach as laid out by Sheridan et al. (2009), implementing a program that reinforces

parental involvement and providing families with training on how to get involved in their

child's education or on positive behavior support in the home. While a positive and

supportive environment at school is very important, if the child is not reinforced at home

for what he or she does at school, academic outcomes could be affected for the worse

(Sheridan & Kratochwill, 2008).

Though ABC-UBI has limited involvement with the community and home of a

student, the program strives to provide a supportive environment that is conducive to

learning at school. While comparing ABC-UBI schools to non-ABC-UBI schools is

interesting and useful, it is also useful to focus on one school at a time without comparing

to any other, highlighting its strengths and where it could improve.

The present study attempted to answer many questions regarding the effectiveness

of ABC-UBI. Some limitations within the study made it difficult to draw definitive

conclusions about the ABC-UBI program overall. Hopefully, future researchers will take

what was learned from this study and apply it to future studies that include a larger

sample size, more powerful statistics, and assess changes over time. Whether ABC-UBI

is or is not effective in improving teacher perceptions of RTI, positive behavior supports,

school climate, and student academic outcomes, it is undeniable that ABC-UBI's goal is to provide effective instruction to students. In order to help ABC-UBI accomplish this goal, it is important that outcomes research focus on establishing the efficacy of the program in an effort to identify needed improvements. As research continues to be conducted on the effectiveness of ABC-UBI, it will be able to continue evolving and improving to help achieve the overarching goal of positively impacting the education of as many students as possible.

APPENDIX A

RTI TEACHER SURVEY

Adapted from Batche and Curtis (2008).

Perceptions of Practices

Directions: For each item on this survey, please indicate how frequently or infrequently the given practice occurred in your school for both academics (i.e., reading and math) and behavior during the 2009-2010 school year. Please use the following response scale:

      1 = Never Occurred (NO)
      2 = Rarely Occurred (RO)
      3 = Sometime Occurred (SO)
      4 = Often Occurred (OO)
      5 = Always Occurred (AO)
      0 = Don't Know (DK)

In my school: NO RO SO OO AO DK

1.   Data (e.g., Curriculum-Based Measurement, DIBELS, Office Discipline Referrals) were used to determine the percent of students receiving core instruction (general education classroom only) who achieved benchmarks (district grade-level standards) in:

      a.   Academics   1   2   3   4   5   0

      b.   Behavior   1   2   3   4   5   0

2.   Data were used make decisions about necessary changes to the core curriculum or discipline procedures to increase the percent of students who achieved benchmarks (district grade-level standards) in:

      a.   Academics   1   2   3   4   5   0

      b.   Behavior   1   2   3   4   5   0

3.   Data were used (e.g., Curriculum-Based Measurement, DIBELS, Office Discipline Referrals) to identify at-risk students in need of supplemental and/or intensive interventions for:

      a.   Academics   1   2   3   4   5   0

      b.   Behavior   1   2   3   4   5   0

4. The students identified as at-risk routinely received additional (i.e., supplemental) intervention(s) for:

    a. Academics   1   2   3   4   5   0

    b. Behavior   1   2   3   4   5   0

5. Progress monitoring occurred for all students receiving supplemental and/or intensive interventions for:

    a. Academics   1   2   3   4   5   0

    b. Behavior   1   2   3   4   5   0

6. Progress monitoring data (e.g., Curriculum-Based Measurement, DIBELS, behavioral observations) were used to determine the percent of students who received supplemental and/or intensive interventions and achieved grade-level benchmarks for:

    a. Academics   1   2   3   4   5   0

    b. Behavior   1   2   3   4   5   0

7. A standard protocol intervention (i.e., the same type of intervention used for similar problems) was used initially for <u>all</u> students who required supplemental instruction for:

    a. Academics   1   2   3   4   5   0

    b. Behavior   1   2   3   4   5   0

School Personnel Satisfaction

Directions: *For each item below please indicate your level of satisfaction/dissatisfaction relative to the service delivery model used in your school during the 2009-2010 school year. Using the rating scale below, please circle the options that best represent your response. If you are not knowledgeable about a certain practice, please select the option "Do Not Know" (DK).*

> 1 = Very Dissatisfied (VD)
> 2 = Dissatisfied (D)
> 3 = Neutral (N)
> 4 = satisfied (S)
> 5 = Very Satisfied (VS)
> 0 = Do Not Know (DK)

In my school:	VD	D	N	S	VS	DK

8.   The data used to identify students at risk for:

    a.   academic difficulties   1 2 3 4 5 0

    b.   behavioral difficulties   1 2 3 4 5 0

9.   The manner in which progress monitoring
was carried out in my school   1 2 3 4 5 0

10.   The decisions that we made about students
who were not successful with only core
instruction (academic and/or behavior)   1 2 3 4 5 0

11.   The timeliness with which students who were
not meeting expectations were identified   1 2 3 4 5 0

12.   The communication between classroom teacher, support staff (instructional,
student services), and administration regarding:

    a.   progress monitoring   1 2 3 4 5 0

    b.   intervention implementation and support   1 2 3 4 5 0

13.   How quickly interventions were available in my school for students identified as
not meeting expectations in:

    a.   Reading   1 2 3 4 5 0

    b.   Math   1 2 3 4 5 0

    c.   Behavior   1 2 3 4 5 0

14.   The degree to which my school's problem-solving
(local case management) team was
helpful to teachers   1 2 3 4 5 0

Perceptions of RTI Skills

*Directions: Please read each statement about a skill related to assessment, instruction,
and/or intervention below and then evaluate YOUR skill level within the context of
working at a school/building level. Where indicated, rate your skill separately for*

academics (i.e., reading and math) and behavior. Please use the following response scale:

        1 = I do not have this skill at all (NS)
        2 = I have minimal skills in this area; need substantial support to use it (MnS)
        3 = I have this skill but still need some support to use it (SS)
        4 = I can use this skill with little support (HS)
        5 = I am highly skilled in this area and could teach other this skill (VHS)

The skill to:	NS	MnS	SS	HS	VHS

15.   *Access* the data necessary to determine the percent of students in core instruction who are achieving benchmarks (district grade-level standards) in:

    a.   Academics   1   2   3   4   5

    b.   Behavior   1   2   3   4   5

16.   Perform each of the following steps when identifying the problem for a student for whom concerns have been raised:

    a.   Define the referral concern in terms of a replacement behavior (i.e., what the student should be able to do) instead of a referral *problem* for:

        i.   Academics   1   2   3   4   5

        ii.   Behavior   1   2   3   4   5

    b.   Use data to define the current level of performance of the target student for:

        i.   Academics   1   2   3   4   5

        ii.   Behavior   1   2   3   4   5

    c.   Determine the desired level of performance (i.e., benchmark) for:

        i.   Academics   1   2   3   4   5

        ii.   Behavior   1   2   3   4   5

d. Determine the current level of peer performance for the same skill as the target student for:

    i. Academics   1   2   3   4   5

    ii. Behavior   1   2   3   4   5

e. Calculate the gap between student current performance and the benchmark (district grade-level standard) for:

    i. Academics   1   2   3   4   5

    ii. Behavior   1   2   3   4   5

f. Use gap data to determine whether core instruction should be adjusted or whether supplemental instruction should be directed to the target student for:

    i. Academics   1   2   3   4   5

    ii. Behavior   1   2   3   4   5

17. Identify the most appropriate type(s) of data to use for determining reasons (hypotheses) that are likely to be contributing to the problem for:

    a. Academics   1   2   3   4   5

    b. Behavior   1   2   3   4   5

18. Identify the appropriate supplemental intervention available in my building for a student identified as at-risk for:

    a. Academics   1   2   3   4   5

    b. Behavior   1   2   3   4   5

19. Provide the support necessary to ensure that the intervention is implemented appropriately for:

    a. Academics   1   2   3   4   5

    b. Behavior   1   2   3   4   5

20. Select appropriate data (e.g., Curriculum-Based Measurement, DIBELS, behavioral observations) to use for progress monitoring of student performance during interventions:

    a.   Academics   1   2   3   4   5

    b.   Behavior   1   2   3   4   5

21. Construct graphs for large group, small group, and individual students:

    a.   Graph target student data   1   2   3   4   5

    b.   Graph benchmark data   1   2   3   4   5

    c.   Graph peer data   1   2   3   4   5

    d.   Draw an aimline   1   2   3   4   5

    e.   Draw a trendline   1   2   3   4   5

22. Interpret graphed progress monitoring data to make decisions about the degree to which a student is responding to intervention (e.g., positive, questionable or poor response).   1   2   3   4   5

23. Make modifications to intervention plans based on student response to intervention   1   2   3   4   5

24. Use appropriate data to differentiate between students who have not learned skills (e.g., did not have adequate exposure to effective instruction, not ready, got too far behind) from those who have barriers to learning due to a disability.   1   2   3   4   5

25. Collect the following types of data:

    a.   Curriculum-Based Measurement   1   2   3   4   5

    b.   DIBELS   1   2   3   4   5

    c.   Access data from appropriate district- or school-wide assessments   1   2   3   4   5

    d.   Standard behavioral observations   1   2   3   4   5

APPENDIX B

CHILD SET SURVEY QUESTIONS

1.   What are the school rules? List as many as you know!

2.   Have you received a [name of reward for positive behavior in that specific school] in the past month?

        Circle one: Yes   No

APPENDIX C

EFFECTIVE BEHAVIOR SUPPORT:

SELF ASSESSMENT SURVEY

Effective Behavior Support (EBS) Survey: Assessing and Planning Behavior Support in Schools

Please rate using the following rating system:

1 = In Place (IP)
2 = Partially in Place (PIP)
3 = Not in Place (NIP)

SCHOOL-WIDE SYSTEMS

School-wide is defined as involving all students, all staff, & all settings

		IP	PIP	NIP
1.	A small number (e.g., 3-5) of positively & clearly stated student expectations or rules are defined.	1	2	3
2.	Expected student behaviors are taught directly.	1	2	3
3.	Expected student behaviors are rewarded regularly.	1	2	3
4.	Problem behaviors (failure to meet expected student behaviors) are defined clearly.	1	2	3
5.	Consequences for problem behaviors are defined clearly.	1	2	3
6.	Distinctions between office v. classroom managed problem behaviors are clear.	1	2	3
7.	Options exist to allow classroom instruction to continue when problem behavior occurs.	1	2	3
8.	Procedures are in place to address emergency/dangerous situations.	1	2	3
9.	A team exists for behavior support planning & problem solving.	1	2	3
10.	School administrator is an active participant on the behavior support team.	1	2	3
11.	Data on problem behavior patterns are collected and summarized within an on-going system.	1	2	3

12. Patterns of student problem behavior are reported to teams
and faculty for active decision-making on a regular basis   1   2   3

13. School has formal strategies for informing families about
expected student behaviors at school.   1   2   3

14. Booster training activities for students are developed,
modified, & conducted based on school data.   1   2   3

15. School-wide behavior support team has a budget for (a)
teaching students, (b) on-going rewards, and (c) annual staff   1   2   3

16. All staff are involved directly and/or indirectly in school-
wide interventions.   1   2   3

17. The school team has access to on-going training and
support from district personnel.   1   2   3

18. The school is required by the district to report on the
social climate, discipline level or student behavior at least   1   2   3

NONCLASSROOM SETTING SYSTEMS

Nonclassroom settings are defined as particular times or places where supervision is emphasized (e.g., hallways, cafeteria, playground, bus).

1. School-wide expected student behaviors apply to
nonclassroom settings.   1   2   3

2. School-wide expected student behaviors are taught in
nonclassroom settings.   1   2   3

3. Supervisors actively supervise (move, scan, &
interact) students in nonclassroom settings.   1   2   3

4. Rewards exist for meeting expected student
behaviors in nonclassroom settings.   1   2   3

5. Physical/architectural features are modified to limit
(a) unsupervised settings, (b) unclear traffic patterns,
and (c) inappropriate access to & exit from school grounds   1   2   3

6. Scheduling of student movement ensures appropriate
numbers of students in nonclassroom spaces.   1   2   3

7. Staff receives regular opportunities for developing
and improving active supervision skills.   1   2   3

8. Status of student behavior and management
    practices are evaluated quarterly from data.   1   2   3

9. All staff are involved directly or indirectly in
    management of nonclassroom settings.   1   2   3

CLASSROOM SYSTEMS

Classroom settings are defined as instructional settings in which teacher(s) supervise &
teach groups of students.

1. Expected student behavior & routines in classrooms
    are stated positively & defined clearly.   1   2   3

2. Problem behaviors are defined clearly.   1   2   3

3. Expected student behavior & routines in classrooms
    are taught directly.   1   2   3

4. Expected student behaviors are acknowledged regularly
    (positively reinforced) (>4 positives to 1 negative).   1   2   3

5. Problem behaviors receive consistent consequences.   1   2   3

6. Procedures for expected & problem behaviors are
    consistent with school-wide procedures.   1   2   3

7. Classroom-based options exist to allow classroom
    instruction to continue when problem behavior occurs.   1   2   3

8. Instruction & curriculum materials are matched to
    student ability (math, reading, language).   1   2   3

9. Students experience high rates of academic success
    (> 75% correct).   1   2   3

10. Teachers have regular opportunities for access to
    assistance & recommendations (observation,
    instruction, & coaching).   1   2   3

11. Transitions between instructional &
    noninstructional activities are efficient & orderly.   1   2   3

APPENDIX D

STAFF SCHOOL CLIMATE SURVEY

School Name: _____

SCHOOL CLIMATE SURVEY
Revised Edition
(School Staff Version)

I. This survey is designed to get the opinions of all school staff concerning the general climate of the school. Your input is very important in helping to better understand the issues related to school climate. Your responses are strictly confidential and you will not be identified in any way. Thank you for taking the time to respond.

DIRECTIONS

USE NO. 2 PENCIL ONLY
- Make your marks dark.
- Erase changes completely
- Correct Marks: ● ●
- Incorrect: ⊠ ◐ ✓ ⓤ

STAFF I.D.#

SCHOOL I.D.#

1. Please indicate your current position by filling in the oval next to the appropriate choice:
1. Classroom Teacher
2. Paraprofessional
3. Non-instructional professional staff
4. Administrator
5. Other (please specify) _____

2. Please indicate your gender
Female 1   Male 2

3. Please indicate ethnic background
1. Black/African-American
2. Latino-American
3. White/European-American
4. Native American
5. Asian
6. Other (please specify) _____

4. How many years have you worked in your present occupation?

5. How many years have you worked at your present school?

6. How many classes do you teach or work with?

7. In what department are you?
1. Self-Contained
2. English
3. Math
4. Science
5. Social Studies
6. Art
7. Music
8. Physical Education
9. Other

8. What grade(s) do you teach or work with?
K 1 2 3 4 5 6 7 8 9 10 11 12

9. Location of school:
Urban ①   Suburban ②   Rural ③

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II. *We would like to know how you feel about your school. Please indicate how strongly you agree or disagree with each statement by filling in one of the five responses.*

SCALE: SA = Strongly Agree   A = Agree   NS = Not Sure   D = Disagree   SD = Strongly Disagree

	SA	A	NS	D	SD
1. The principal sets the direction for this school	○	○	○	○	○
2. Students at this school are unwilling to learn	○	○	○	○	○
3. Students here fight a lot	○	○	○	○	○
4. Parents rarely attend school activities	○	○	○	○	○
5. Students at this school have good self control	○	○	○	○	○
6. It is clear that the principal facilitates and guides the management process in the school	○	○	○	○	○
7. Non-teaching staff are given opportunities to express their views on important matters	○	○	○	○	○
8. The walls of this school are usually in good condition	○	○	○	○	○
9. Teachers are often disrespected by students	○	○	○	○	○
10. Students are treated the same regardless of race	○	○	○	○	○
11. The behavior of children at this school is good	○	○	○	○	○
12. This school is usually clean and tidy	○	○	○	○	○
13. At this school, teachers help students feel good about themselves	○	○	○	○	○
14. The principal has little contact with the teachers	○	○	○	○	○
15. Staff at this school believe that very few of their students will make it to college	○	○	○	○	○
16. There is good community involvement in the life of the school	○	○	○	○	○
17. Our students are willing and eager to learn	○	○	○	○	○
18. Generally this school is well maintained	○	○	○	○	○
19. Students are treated the same regardless of social class	○	○	○	○	○
20. At this school, staff members agree that there is little hope of a good future for their students	○	○	○	○	○
21. Most staff at this school expect many of their students to go on to college	○	○	○	○	○
22. Parents are given opportunities to express their views on important matters	○	○	○	○	○
23. Teachers at this school generally try to accommodate the different learning styles of the children	○	○	○	○	○

| | SCALE: SA = Strongly Agree   A = Agree   NS = Not Sure   D = Disagree   SD = Strongly Disagree | | | | | |

	SA	**A**	**NS**	**D**	**SD**
24. **Non-teaching staff are asked to help with decisions on school matters**	○	○	○	○	○
25. **Male and female students seem to benefit equally well from instruction**	○	○	○	○	○
26. **Most staff here agree that many students at this school will not complete high school**	○	○	○	○	○
27. **Parents visit the school on a regular basis**	○	○	○	○	○
28. **The principal is a problem-solver**	○	○	○	○	○
29. **It is easy to guide the behavior of the students at this school** . . .	○	○	○	○	○
30. **Students at this school do not care about learning**	○	○	○	○	○
31. **Rules are frequently broken by students**	○	○	○	○	○
32. **Teachers at this school expect many of their students to pursue some kind of higher education beyond high school**	○	○	○	○	○
33. **The principal is an instructional leader in the school**	○	○	○	○	○
34. **The principal provides constructive feedback to teachers about their performance**	○	○	○	○	○
35. **Students, regardless of race, seem to benefit equally well from instruction**	○	○	○	○	○
36. **Staff at this school see a bright future for their students**	○	○	○	○	○
37. **Students are orderly**	○	○	○	○	○
38. **Administrators here respect the teachers**	○	○	○	○	○
39. **Students here are caring people**	○	○	○	○	○
40. **Teachers are given opportunities to express their views on important matters**	○	○	○	○	○
41. **Teachers at this school are committed to helping students learn** . .	○	○	○	○	○
42. **This school has a bright and pleasant appearance**	○	○	○	○	○
43. **Parents attend Parent-Teacher Association meetings**	○	○	○	○	○
44. **At this school, students help one another**	○	○	○	○	○
45. **Male and female students are treated equally well**	○	○	○	○	○
46. **Professional non-teaching staff play an active role in decision-making groups**	○	○	○	○	○
47. **There are often broken windows or doors in this school**	○	○	○	○	○

SCALE: SA = Strongly Agree   A = Agree   NS = Not Sure   D = Disagree   SD = Strongly Disagree

		SA	A	NS	D	SD
48.	At this school, parents frequently volunteer to help on special projects	○	○	○	○	○
49.	Rules are obeyed by students	○	○	○	○	○
50.	At this school, teachers find ways to motivate their students to learn	○	○	○	○	○
51.	Teachers at this school try to make school work exciting for students	○	○	○	○	○
52.	Community members are unsupportive of school activities	○	○	○	○	○
53.	Members of the community work closely with school staff to improve the school	○	○	○	○	○
54.	There is good discipline at this school	○	○	○	○	○

Please add any additional comments you might wish in the space below.

_____
_____
_____
_____
_____
_____

We appreciate your taking the time to fill out this questionnaire. Thank you.

T 208348

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