A PROGRAM EVALUATION OF THE LAGUNA VISTA SCHOOL READING
INTERVENTION PROGRAM

A Thesis Presented to

The Faculty of the School of Education

California State University Channel Islands

In Partial Fulfillment

Of the Requirements for the Degree

Masters of Arts

By

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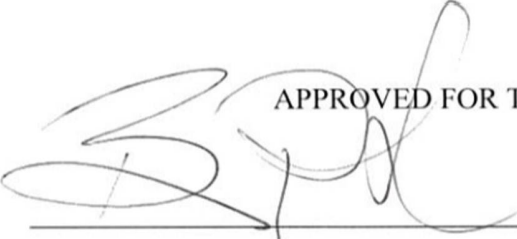August 2018

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Thesis/Project Title: A PROGRAM EVALUATION OF THE LAGUNA VISTA SCHOOL
READING INTERVENTION PROGRAM

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Dedication

This thesis is dedicated, first and foremost, to my three beautiful daughters, Madelin, Isabella and Alice. Girls, you are and always will be my inspiration and motivation. Thank you for cheering me along the way! To my husband Walter, thank you for being patient and supportive during my two-year journey. *A mis padres Catalina y Francisco Bravo, por ustedes y para ustedes.* A special thank you to all of my family and friends for always supporting my efforts and cheering me on.

Acknowledgements

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Abstract

In 2012, Laguna Vista School in the Ocean View School District, Ventura County, implemented a Response to Intervention (RtI) program which provides reading intervention services to struggling students. This program is led by a credentialed teacher, along with several instructional assistants (IAs). Services are provided through a mix of push-in and pull-out services models. This program evaluation was designed to determine the impact of one such program designed for students who are not reading at grade level at Laguna Vista School. Several school leaders involved in the creation of the intervention program were interviewed in order to obtain the most accurate information about the program. Data from several assessments for the past five years was collected. The assessments include the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), and the Smarter Balanced Assessment Consortium (SBAC) English Language Arts/Literacy. This program evaluation will determine if the students who received intervention services have shown growth in reading, as measured by DIBELS/IDEL and SBAC ELA/Literacy. The results of this program evaluation will be presented.

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Chapter 1: Introduction

While reading can come easily to some students, it can be a huge challenge for others. For educators, it is a question of how to deliver effective reading instruction that meets the needs of these diverse learners. While decades of research support programs that include explicit and systematic reading instruction that is designed in order to meet the individual needs of students, research also supports the concept that readers need direct reading instruction in addition to learning the skills that they need in order to put all these concepts together.

Educators need to understand what needs to be taught and they need to know their students. Once they identify student learning gaps in reading, they are better equipped to support their struggling readers. In 2000, the National Reading Panel identified the five components of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension (International Reading Association, 2002). Each of these components is individually important, but they are not isolated. They are intricately related to one another (International Reading Association, 2002). Some of these can be taught in isolation, but in the end, students need to know that they are related to each other and when they are utilized together they will help them become better readers.

Chapter 2: Program Description

The Intervention Program at Laguna Vista Elementary School was created in an effort to support students who were struggling in the mainstream classroom. The goal of the program is to increase the achievement of low achieving students and those at risk of not meeting state standards, especially in the areas of Reading and Language Arts.

The program began in 2008, and was developed as a push-in program in which instruction was delivered inside the general classroom. During this time, two credentialed teachers along with one instructional assistant delivered small group intervention services in the general classroom. In 2012, as a result of funding, the program moved to a pull-out system in which instruction was delivered in a setting outside the general classroom. At this point, an Intervention Specialist position was created and a credentialed teacher, along with three instructional assistants began providing intervention services outside of the general classroom.

All students in first through fifth grade were assessed in reading using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment within the first three weeks of the school year. Every student enrolled after this time frame is assessed by the intervention teacher, Instructional Assistants, and retired teachers on the Early Retirement Incentive Program. DIBELS assesses reading fluency, comprehension and beginning reading skills and uses an online data system.

Professional Learning Community (PLC) grade level teams meet with the Resource Specialist Program (RSP) teacher, the principal and Intervention Specialist to review the data and select students for Tier 2 and Tier 3 intervention at each grade level. Students in the Tier 2 program were provided instruction by the Response to Intervention (RtI) team, consisting of

classroom teachers, the bilingual intervention teacher, and instructional assistants. Tier 3 instruction was provided by the Resource Specialist and the RSP instructional assistant. The PLC grade level teams, in collaboration with the RtI team, decide on the appropriate instruction based on the assessment results. RtI students were assessed using the DIBELS Progress Monitoring tools every three to four weeks to evaluate the efficacy of the program. In February, the principal, Student Study Team Coordinator, Intervention Teacher and the RSP Teacher meet with every classroom teacher to review the assessment data of each student to assure that every student is receiving appropriate instruction in all tiers. These groups are flexible, meaning that at any point during the year, students can move from one tier to another.

The duration of intervention services varies depending on how students respond to the intervention services. While some students receive one round of six weeks of intervention, other students receive intervention year round. Intervention sessions average from 30 to 45 minute sessions four times a week. A variety of strategies were used to administer intervention. Each grade level was scheduled for intervention at the same time. The program services approximately 60 students per day in the Tier 2 program and about 30 students in Tier 3. Tier 3 is a more intensive intervention tier where students work in groups of 3 or less. In Tier 2, students work in groups of 4 or 5. The program used a variety of materials to administer intervention services. The program used *Triumphs*, the McMillan Intervention Resource Book, and the *Home-School Connections* among other resources available from the district adopted materials.

Chapter 3: Literature Review

"Learning to read is a complex process. This process occurs quite easily for some and is challenging for others" (Richards, 2010, p.52). Educators all over the United States struggle to find effective ways to teach reading to all students, yet not all students learn the same way. While reading might come easily to some students, others struggle early on. The question then, is how to deliver effective reading intervention to students who are struggling readers? Decades of research support programs that include explicit and systematic reading instruction that is designed in order to meet the individual needs of students. Research supports the concept that struggling readers need direct instruction on their reading skills and how to put those skills together in order to read successfully (Richards, 2010).

The first step in providing explicit, systematic reading instruction is to understand what needs to be taught. When teachers know their students and can identify their learning gaps in reading, they are better prepared to support these struggling readers (Richards, 2010). In 2000, the National Reading Panel identified the five components of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension (International Reading Association, 2002). Each of these components is individually important, but they are not isolated. They are intricately related to one another (International Reading Association, 2002). While some of these can be taught in isolation, students need to know that the reading components are related to each other and that when they are utilized together they will help them become better readers.

Problem of Practice

Across the country, teachers realize that there are students who are not meeting grade level standards (Richards, 2010). While some of these students are a part of special education

programs on their site, not all of them are. So what is a teacher to do in order to make sure that

students are getting all the support that they need? How are teachers advocating for these

struggling readers? How do they ensure that these students will be assessed for special education,

if needed? Response to Intervention (RtI) followed by Multi-Tiered System of Support (MTSS)

were created to answer these questions and to blur the boundaries between regular and special

education in order to create a unified system that serves all students (Buffman, Mattos & Weber,

2009; Rosen, 2018).

Purpose of the Study

In order to address reading difficulties, schools all over the United States have

implemented reading intervention programs based on RtI/MTSS models (Denton, 2012). The

question now is, are these intervention programs working? Are they effective? School districts

began implementing reading intervention programs to help meet the needs of these struggling

readers. They have hired experts and invested in curriculum and professional development in

order to provide the best services for their students. However, there has been few published

program evaluations conducted to determine the effectiveness of such programs (Denton 2012).

Providing reading intervention services to struggling readers can be challenging due to

factors such as time limitations, finding qualified interventionists, and obtaining adequate

funding. Therefore, there is a continued need for studies designed to evaluate programs for

primary-grade students who struggle with reading (Denton, 2012).

The purpose of this program evaluation is to determine how effective the reading

intervention program at Laguna Vista School has been and to provide suggestions for future

improvements. This program evaluation is indispensable for school improvement. It will

contribute to school and program improvement by helping determine the effectiveness of the program. In addition, it will help to indicate direction for remediating unsuccessful processes, it will enhance organizational efficacy by providing a focus for faculty and administrator efforts, and it will allow resources to be directed to the areas of greatest need.

Evaluation Questions

The following is a list of the program evaluation questions that were designed in collaboration with the school district and school site stakeholders. These evaluation questions were designed based on the district Local Control and Accountability Plan (LCAP), Laguna Vista School Single Plan for Student Achievement (SPSA) goals, and available assessment data.

1. *Have students who received intervention services at Laguna Vista School shown growth in reading as measured by DIBELS?*
2. *Have students who received intervention services at Laguna Vista School shown growth in the common core language arts standards as measured by SBAC Language Arts/Literacy assessment?*

Response to Intervention

Response to intervention (RtI) is the practice of providing students with high quality instruction and interventions that match their needs as well as using students' "learning rate over time" and level of performance to make important educational decisions (Buffman, Mattos, & Chris, 2009). "Learning rate over time" refers to the growth that a student makes in achievement or behavior in comparison to their previous level of performance or the growth of others in the same grade level or course of study. Level of performance refers to a student's progress compared to expected performance on either criterion-referenced or norm-referenced tests

(Buffman et al., 2009). The major components of RtI include: (a) scientifically-based core curriculum; (b) universal screening; (c) progress monitoring; and (d) decisions about adequate progress in subsequent tiers (Hughes and Dexter, 2011).

In the past, schools have used a discrepancy model to determine if students have special learning needs. This discrepancy model measures the difference between a student's potential achievement and actual achievement in order to determine if a student has a learning disability (Buffman et al., 2009). The problem with this discrepancy model is that no action is taken to help students until there is such a discrepancy and the child has been left to fail. This is where RtI comes in and provides this movement which shifts that responsibility for helping students from the special education teachers back to the entire staff (Buffman et al., 2009).

As a result of the implementation of an RtI program, schools will consider students for special education services only after they have received a series of timely, systematic, increasingly focused, and intensive research based intervention services and they have not responded (Buffman et al., 2009). RtI can be a successful tool for academic school improvement. It does, however, need to be embraced by all stakeholders. It must be included in the vision and integrated into all aspects of the school (Shores and Chester, 2009).

While there are many benefits to implementing an RtI program, there are also some perceived barriers to the implementation of a successful intervention program. One of the barriers perceived by teachers surveyed is that implementing RtI is a burdensome process. There is a lack of time, there is an overwhelming amount of paperwork, there are delays in services, and that it is an extra and heavy workload to take on. In addition, some educators believe that there are teacher knowledge gaps, a lack of information available on RtI, a lack of training, and

negative faculty attitudes (Werts, 2014). Educators also believe that there is a lack of resources, both materials and personnel, a lack of parental involvement, and a lack of collaboration (Werts, 2014).

The benefits that resulted from this program evaluation included the fact that RtI provides students with a variety of services such as reading interventions for struggling learners, ambitious instructional pace for struggling students, increased levels of instructional interventions, decisions that are based on objective data and progress monitoring, identification of students with learning disabilities in the early grades, shared responsibility and increased accountability for student learning, parental communication enhanced by the use of data, instructional decisions guided by progress monitoring, collaboration among administrative staff, teachers, and parents regarding students' learning, a potential reduction of behavior problems, more staff, parent, and student involvement in the educational process, potential reduction in the number of students referred for special education services, and an increase in the accuracy and identification of students with a learning disability (Werts, 2014).

Although RTI is considered an instructional framework used by schools to provide early intervention for struggling students, it is considered very beneficial for struggling readers. In a study conducted by Avant (2016), findings suggest that RTI encourages a sense of fairness for students by providing them with a greater understanding of culturally diverse approaches. Early studies of RtI by Deno & Mirkin (1977) and Bergan (1977) served as the foundation for the two distinct RtI models, the Standard Protocol Model (Deno & Mirkin, 1977) and the Problem Solving Model (Bergan, 1977).

The delivery of special education services is based on the cascade model developed in the early 1970's. The cascade model includes five progressively less restrictive environments (in order from most restrictive to least restrictive): home, special schools, self-contained classrooms, general education with pull-out support, and general education with full inclusion (Bergan, 1977). It was through this model that curriculum based measures (CBMs) were created. CBMs are precise, direct, and short assessments of growth in students' academic designed to be administered frequently (Buffman et al., 2009). This huge shift in academic policy led to the reauthorization of Federal Special Education law with a new title, the Individuals with Disabilities Education Act (IDEA) in 2004 (Buffman et al., 2009). This legislation changed special education eligibility determination to a response model, which emphasizes early and high-quality research-based interventions in regular programs. (Shores and Chester, 2009)

These shifts in education policy caused conflicts between general education and special education policies. The issues include: problems of redundancy; lack of coordination; a focus on paperwork and legal process over results; and the fact that there are separate spheres of responsibility for students. Educator reliance in the discrepancy model may cause them to misdiagnose student needs, as well as cause educators to miss opportunities to help students before they need special education services (Buffman et al., 2009). Recommendations of the President Bush's 2002 Commission on Excellence in Special Education (as cited in Buffman et al., 2009) included: focus on student results; emphasize prevention; use high-quality programs; monitor progress and adjust instruction frequently; share instructional and fiscal responsibility for student success between general and special education; assign the most highly qualified staff to teach learners at risk; and set high expectations for academic and social achievement.

RtI was created to resolve the problems identified by the Commission on Excellence in Special Education and has proven to be a more reliable way to identify students in need of special education services (Buffman et al, 2009). The student study team has to consider the student's native language, behavior, socioeconomic status, and educational background in order to determine qualification for special education services. The provision of RtI services is not affected by these environmental factors, because a well-designed RtI program will ensure that the students who are considered for special education are students who have received systematic interventions and are still not showing progress (Buffman et al., 2009).

The Multi-Tier System of Support (MTSS)

The Multi-Tier System of Support (MTSS) is a framework used by many schools to provide targeted support to struggling students (Rosen, 2018). MTSS does not only support academic growth and achievement. It also supports other areas such as behavior, social and emotional needs, and absenteeism. MTSS is a framework that focuses on meeting the needs of the whole child (Rosen, 2018).

MTSS is a framework, not a curriculum that you can follow, that is a proactive approach which includes several key elements. These elements include universal screening for all students early in each school year, increasing levels of targeted support for those who are struggling, and integrated plans that address students' academic, behavioral, social and emotional needs. In addition, the use of evidence-based strategies, a school-wide approach to student support, professional development so staff can deliver interventions and monitor progress effectively, family involvement so parents can understand the interventions and provide support at home, and

frequent monitoring of students' progress so educators can use this data to help decide if more interventions are needed (Rosen, 2018).

MTSS uses a three tier system. Tier 1 focuses on the whole class. This is where all students are taught using research-based methods. In this tier, the classroom teacher uses research based strategies to teach all students. This core curriculum is embedded along with ongoing progress monitoring for all students. Once students are identified as struggling learners, they are placed into small groups to address their needs. Tier 2 focuses on small group interventions. In this tier, students are placed into groups for immediate and powerful targeted intervention. The main goal in this tier is to prevent students from falling further behind because they are missing core instruction, or Tier 1 instruction. Tier 3 is where intensive intervention takes place. The focus here is on closing the learning gap. The tiers are designed with the intention of fluidity between the tiers. Students can begin at Tier 1, but can move into Tier 2, then Tier 3, then back to Tier 2, as needed. Few students make it to Tier 3 where they not only continue to receive Tier 1 instruction, but they receive more individualized support, even more so than at Tier 2. Students are broken into even smaller groups than Tier 2 and these sessions usually last longer and are more narrowly focused. Laguna Vista School's reading intervention program was designed to serve identified Tier 2 and Tier 3 students with reading deficits.

MTSS is an umbrella term which includes multi-tier systems of support. Some of the examples of the framework include Positive Behavioral Interventions and Supports (PBIS) and Response to Intervention (RtI). PBIS is a school-wide system. All students are taught how they are expected to behave. RtI, is the side that focuses on academic intervention. It helps to identify students who are struggling and provides a system with levels of support to help these students catch up (Rosen, 2018).

The above literature informed the design and implementation of this program evaluation of the Laguna Vista Reading Intervention Program.

Chapter 4: Procedures for Conducting the Program Evaluation

A program evaluation is a systematic method for collecting, analyzing, and using information to answer questions about projects, policies and programs, particularly about their effectiveness and efficiency. During this process, the person conducting the evaluation, the evaluator, is responsible for engaging the stakeholders in all steps of the process. Program evaluation is indispensable for school improvement. It contributes to school improvement by helping to determine the effectiveness of a program, indicating direction for remediating unsuccessful processes, enhancing organizational efficacy by providing a focus for faculty and administrator efforts, and allowing resources to be directed to the areas of greatest need (Jason, 2008).

Interviews

The first step of this program evaluation was to conduct interviews with the stakeholders. The stakeholders are the people who have interest or concern in the Laguna Vista School Reading Intervention Program. The purpose of these interviews was to get a clear picture of the program and stakeholder needs. The program description was created by the evaluator and presented to the stakeholders in order to make sure that the program description was as accurate as possible. Changes were made based on stakeholder input. A final program description was approved by the program stakeholders.

Evaluation Design

This study used a quasi-experimental, quantitative causal-comparative design. This correlational design procedure allowed statistical comparison of the independent variable of participation in the reading intervention program, to the dependent variable of reading achievement in a pre-post assessment design.

Evaluation Question Development

Stakeholders took part in providing feedback, modifying and finally, approving the evaluation questions that guided the program evaluation. This process was time consuming because the evaluation questions required changes as the data was collected. This was a flexible step in which the questions were truly tailored to meet the needs of the stakeholders, as well as accommodate the data that were available. As the reading assessment data was gathered, changes in the evaluation questions were necessary.

What began as a set of three evaluation questions with one sub-question each, were modified into two main questions. The original sub-questions required reading assessment data to be sorted by the type of student receiving services in the program into Tier 2 and Tier 3 which represented students with differing levels of reading intervention need. This analysis became infeasible because the number of students who maintained tier status over time were insufficient to conduct statistical analysis. The resolution was to drop the sub-questions while maintaining the total population evaluation questions. Additionally, the reading assessment scores on the Renaissance STAR Reading Assessment were not available to be analyzed. The resolution for this problem was to drop the evaluation question related to this reading assessment, resulting in two final evaluation questions.

Assessment Data Collection

It was decided not to administer new reading assessments in favor of using existing data from the two reading assessments that are regularly administered. The first assessment, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), is a set of procedures and measures for assessing the acquisition of early literacy skills. These assessments were designed to be short measures which are used to regularly monitor the development of early literacy and early reading skills (University of Oregon, n.d.). These measures were designed to assess multiple cueing systems for early reading. These cueing systems include phonemic awareness, alphabetic principle, accuracy and fluency with text, vocabulary, and comprehension. This assessment is a diagnostic tool that is used at Laguna Vista School for students in 1st through 5th grades. It is used to measure growth and to determine instructional needs and placement in Tier 2 or Tier 3 intervention groups. Since the DIBELS assessment is administered to each student several times per year, it was determined that the scores from the beginning of the year would be compared to the scores from the end of the year.

The second set of data came from the Smarter Balanced Assessment Consortia (SBAC), which according to the California Department of Education, is a set of computer-adaptive tests and performance tasks based on the California Common Core State Standards (CCSS) for English Language Arts/Literacy (ELA). These assessments have three components that are designed to support teaching and learning throughout the year: the summative assessments, the interim assessments, and the Digital Library of formative assessment tools. For the past three years, Laguna Vista School students in grades 3 through 5 have been assessed with the summative SBAC following the state accountability mandate. Since this assessment was only administered once at the end of the school year, the scores from the end of one year were

compared to the scores from the end of the following year. The SBAC scaled scores allow for a comparison between years.

During the data collection step, stakeholders agreed to provide the assessment data sets that were analyzed. During the data collection process, the DIBELS data needed was easily and readily available for all program students in grades 1 through 5. The SBAC assessment was first administered in 2015 in grades 3 through 11 and as such had only been administered for three years prior to conducting this program evaluation. Therefore, the only data available for analysis was for third, fourth, and fifth graders for the 2015, 2016, and 2017 SBAC administrations. It is important to note that not all students that participated in the Laguna Vista School Reading Intervention program had all the required data. For this reason, students who did not have the assessment data in each year were excluded from the analysis of data and program evaluation.

Validity and Reliability of Assessments

Students in most industrialized countries are required to take assessments in order to demonstrate their knowledge and mastery of the skills they have learned in school. The overarching question is whether these assessments are reliable and accurately assess reading skill development. According to Carmines (1979), "reliability concerns the extent to which an experiment, test, or any measuring procedure yields the same results on repeated trials" (p.11). Validity then, according to Carmines, refers to a "matter of degree, not an all-or-none property. Moreover, just because an indicator is quite reliable, this does not mean that it is also relatively valid" (p. 13).

At Laguna Vista, the DIBELS assessment has been used for a several years, which is used to determine placement of students in the different reading intervention tiers. The DIBELS

assessments were developed before the Common Core State Standards, therefore, the validity of these assessments for determining general reading skill development is debatable. The SBAC is different than the DIBELS. This assessment was designed around the Common Core State Standards and is considered reliable and valid for assessing comprehensive reading skill development that can be used to measure student growth in the area of language arts/literacy.

Statistical Analysis

After the available data was collected, statistical analysis was conducted and interpreted. The reading assessment data was collected on Excel Spreadsheets. These spreadsheets were input to the IBM Statistical Package for the Social Sciences (SPSS) to conduct planned analysis. The researcher ran multiple *t*-tests for paired samples to determine statistical differences between the mean scores for the beginning of the year with the end of the year on the DIBELS and end of one school year to end of the next school year for SBAC. A Cohen's *d* value was calculated to determine the Effect Size of student growth in reading for each of the reading assessments. Cohen's *d* allows for the comparison of the change in mean scores to determine the magnitude of practical growth. A Cohen's *d* value of 0.2 is considered a small Effect Size, a *d* of 0.5 is considered a medium Effect Size and a 0.8 is considered a large Effect Size. For this program evaluation, we will consider a *d* value of 0.5 or higher to be considered significant. It is important to note that 0.5 represents ½ of a standard deviation growth (Salkind, 2017). The following formulas from Salkind (2017) were used for this program evaluation.

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t-Test Formula

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\left[\frac{(n_1-1)s_1^2 + (n_1-1)s_2^2}{n_1+n_2-2}\right]\left[\frac{n_1+n_2}{n_1 n_2}\right]}}$$

($\overline{X}_1$ = mean for group 1, $\overline{X}_2$ = mean for group 2, n_1 = number of participants in Group 1, n_2 = number of participants in Group 2, S_1^2 = variance for Group 1, S_2^2 = variance for Group 2)

Cohen's *d* Formula

$$d = \frac{\bar{X}1 - \bar{X}2}{SD}$$

(*d* = Cohen's *d* Effect Size, $\bar{x}$ = Mean, SD = Standard Deviation)

The IBM SPSS System created tables with the information needed to analyze the data. These tables were used by the evaluator to create figures with graphs to visually represent the data. These tables and figures were used by the evaluator to analyze and interpret the data. The evaluator was then able to make conclusions and recommendations to the Reading Intervention Program at Laguna Vista School.

Chapter 5: Program Evaluation Results

The results from both assessments demonstrate that the students who received intervention services from the Reading Intervention Program at Laguna Vista School displayed significant growth in reading as measured by the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and the Smarter Balanced Assessment Consortium (SBAC) English Language Arts/Literacy. The amount of growth varied between the tests administered; however, there was growth at all grade levels and during all the five years of data analyzed.

DIBELS data in the figures are displayed by grade level and year. DIBELS data are not comparable from year-to-year because the test has different versions for each grade level. Therefore, the analyzed data comes from paired pre and post-assessments within the same year. SBAC Language Arts/Literacy assessment data was available for third, fourth and fifth grade students for the spring administration of 2015, 2016 and 2017. This assessment is only administered once in the spring of the school year. For this reason, the data analyzed was growth from the end of 3rd grade, 2014-2015 school year to the end of 4th grade, 2015-2016 school year and end of 4th grade, 2014-2015 school year and end of 5th grade, 2015-2016 school year. This assessment provides a comparison of paired pre-assessment scores (prior to participation in reading intervention program) compared to post-assessment scores (after program participation) for the same students.

Using the IBM Statistical Package for Social Sciences (SPSS) System, the evaluator ran a *t*-test to find the difference between the paired scores, the beginning of the year with the end of the year scores (for DIBELS), and end of one school year to the end of the next school year for SBAC across two years. The t-test is an analysis of two populations means through the use of statistical examination (Salkind, 2007).

For this program evaluation, the use of Cohen's *d* value was used to interpret the size of change in reading skills from one assessment to another. Cohen's *d* determined the Effect Size (practical significance) of student mean growth in reading on each assessment. As stated in the previous chapter, a Cohen's *d* a value of 0.2 is considered a small Effect Size, a *d* of 0.5 is considered a medium Effect Size and a *d* of 0.8 is considered a large Effect Size. For the purpose of this program evaluation, an Effect Size *d* of 0.5 or higher is considered significant. To better understand Effect Size, a *d* of 0.5 represents a ½ of a standard deviation (SD) change in the group mean (see Figure 1.6). Effect Size and t-test calculations suggest that students who participated in the Reading Intervention Program at Laguna Vista School made significant growth in reading as measured by the DIBELS (see Figures 1.1 to 1.7 and Tables 1.1-6.2).

DIBELS Analysis

Table 1.1. t-Test 2012 1st grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	71.71	24	30.428	6.211
	End	86.58	24	72.020	14.701

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-14.875	61.753	12.605	-40.951	11.201	-1.180	23	.250

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. No significant difference was found.

Table 1.2. t-Test 2013 1ˢᵗ grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	81.35	37	24.083	3.959
	End	112.14	37	78.881	12.968

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-30.784	64.684	10.634	-52.351	-9.217	-2.895	36	.006

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 1.3. t-Test 2014 1ˢᵗ grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	77.62	26	24.315	4.769
	End	124.27	26	87.458	17.152

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-46.654	83.938	16.462	-80.557	-12.751	-2.834	25	.009

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 1.4. t-Test 2015 1ˢᵗ grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	80.31	16	26.076	6.519
	End	118.63	16	75.784	18.946

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-38.313	70.877	17.719	-76.080	-.545	-2.162	15	.047

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 1.5. t-Test 2016 1ˢᵗ grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	62.64	25	31.563	6.313
	End	98.20	25	69.711	13.942

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-35.560	58.063	11.613	-59.527	-11.593	-3.062	24	.005

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Tables 1.1 through 1.5 indicate that first grade students did not show a significant difference on

t-tests during the 2011-12 school year but showed significant difference for each of the four

succeeding years.

Figure 1.1 **First Grade Pre-Post Within Year Effect Size on DIBELS**
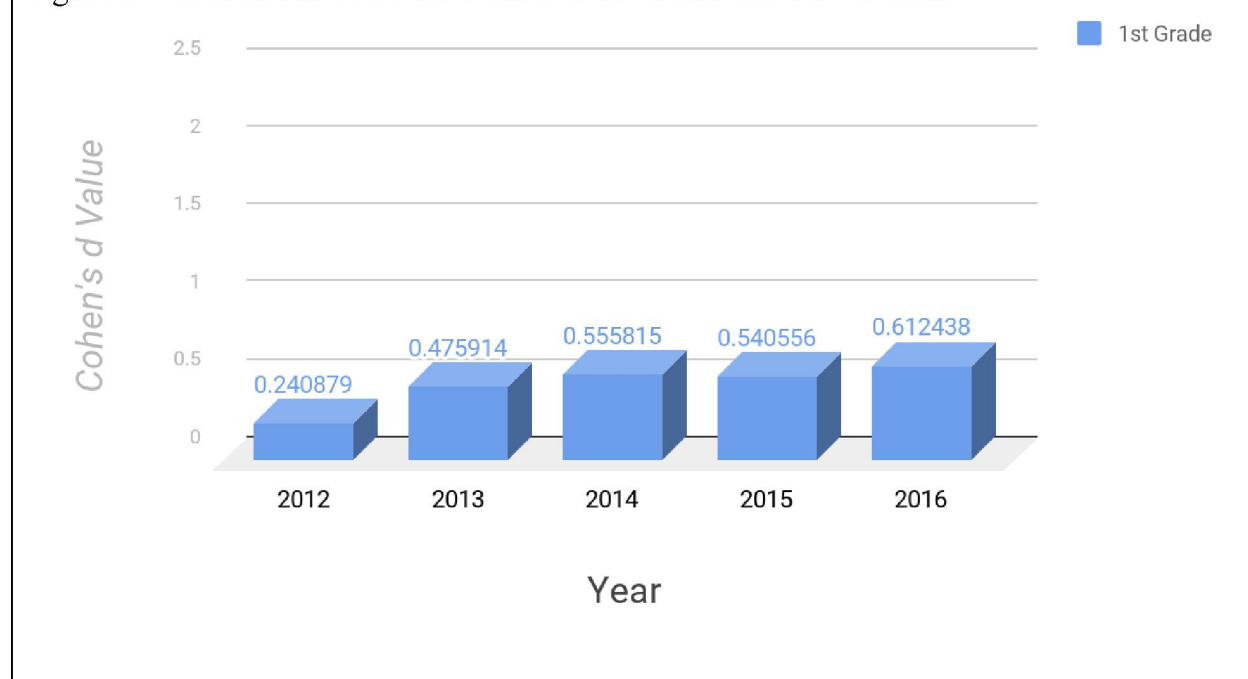
Figure 1.1 shows that the 1st Graders at Laguna Vista School in the year 2012 had the lowest

Cohen's d value, showing a small Effect Size of .24. The 2013, DIBELS assessment data shows

that the growth was increasing. For the years 2014, 2015 and 2016, the data shows that there was

a significant Effect Size. The last three years demonstrate an Effect Size of more than ½ standard

deviation growth. This positive growth trend displayed in Figure 1.1 may be evidence of the

program maturing over time.

Table 2.1. t-Test 2012 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	110.38	24	75.336	15.378
	End	183.29	24	84.598	17.268

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-72.917	35.048	7.154	-87.716	-58.117	-10.192	23	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 2.2. t-Test 2013 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	75.79	28	53.181	10.050
	End	134.75	28	68.401	12.927

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-58.964	45.353	8.571	-76.550	-41.378	-6.880	27	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 2.3. t-Test 2014 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	83.04	24	47.982	9.794
	End	139.17	24	74.853	15.279

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-56.125	43.800	8.941	-74.620	-37.630	-6.277	23	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 2.4. t-Test 2015 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	70.50	14	61.019	16.308
	End	128.71	14	71.090	19.000

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-58.214	46.950	12.548	-85.323	-31.106	-4.639	13	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 2.5. t-Test 2016 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	76.00	8	57.124	20.196
	End	143.38	8	87.885	31.072

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-67.375	42.440	15.005	-102.855	-31.895	-4.490	7	.003

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Tables 2.1 through 2.5 indicate that second grade students showed a significant difference on t-tests during each of the five years of program participation.

Figure 1.2 **Second Grade Pre-Post Within Year Effect Size on DIBELS**
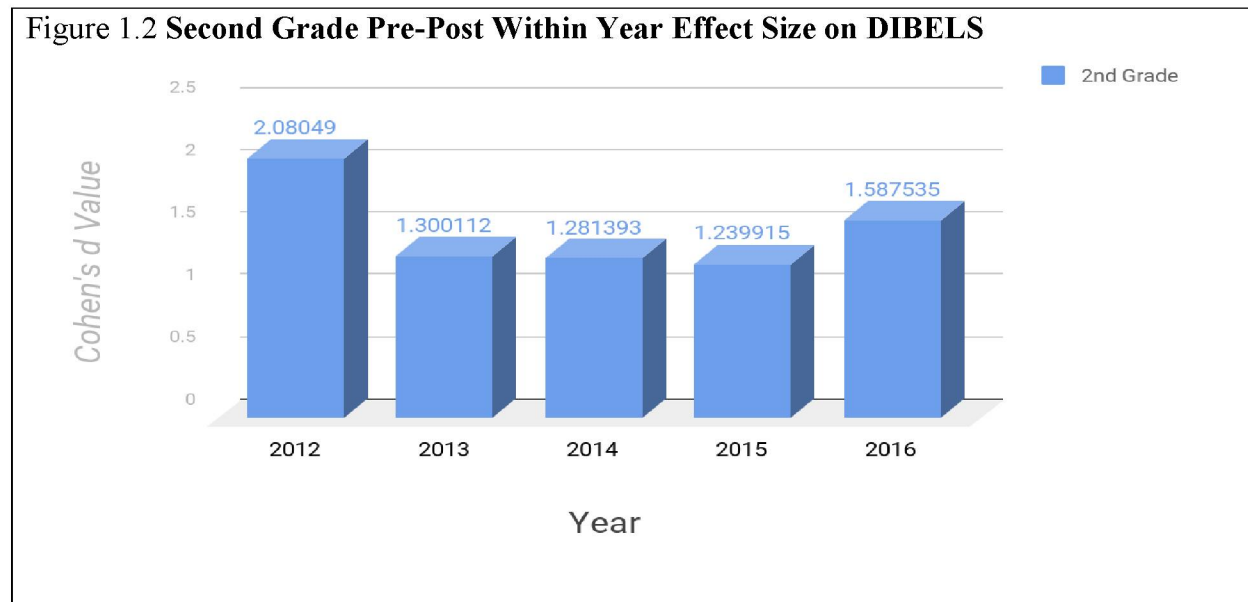
Figure 1.2, displays significant growth in reading for second graders' on DIBELS scores across the years from 2012 to 2016. The Effect Size growth for second graders ranged from a low of 1¼ standard deviation growth to over 2 SD's. The data for this grade level is tremendous and demonstrates that there is positive growth across the years at this grade level. The most significant growth was made in 2012 with an Effect Size of 2.08049, then 1.587535 in 2016. However, it is important to note that the Effect Size was over 1.2 SD's in all years for second graders.

Table 3.1. t-Test 2012 3rd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	137.54	13	67.804	18.806
	End	261.08	13	78.715	21.832

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-123.538	66.940	18.566	-163.990	-83.087	-6.654	12	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 3.2. t-Test 2013 3rd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	161.58	24	62.217	12.700
	End	267.63	24	98.841	20.176

			Paired Differences						
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-106.042	53.945	11.011	-128.821	-83.263	-9.630	23	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 3.3. t-Test 2014 3rd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	120.30	20	60.843	13.605
	End	213.55	20	91.167	20.386

			Paired Differences						
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-93.250	47.666	10.659	-115.559	-70.941	-8.749	19	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 3.4. t-Test 2015 3rd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	116.40	15	58.468	15.096
	End	217.80	15	81.975	21.166

			Paired Differences						
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-101.400	54.387	14.043	-131.519	-71.281	-7.221	14	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 3.5. t-Test 2016 3rd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	102.43	14	65.347	17.465
	End	224.36	14	82.937	22.166

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-121.929	61.206	16.358	-157.268	-86.589	-7.454	13	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Tables 3.1 through 3.5 indicate that third grade students showed a significant difference on t-tests during each of the five years of program participation.

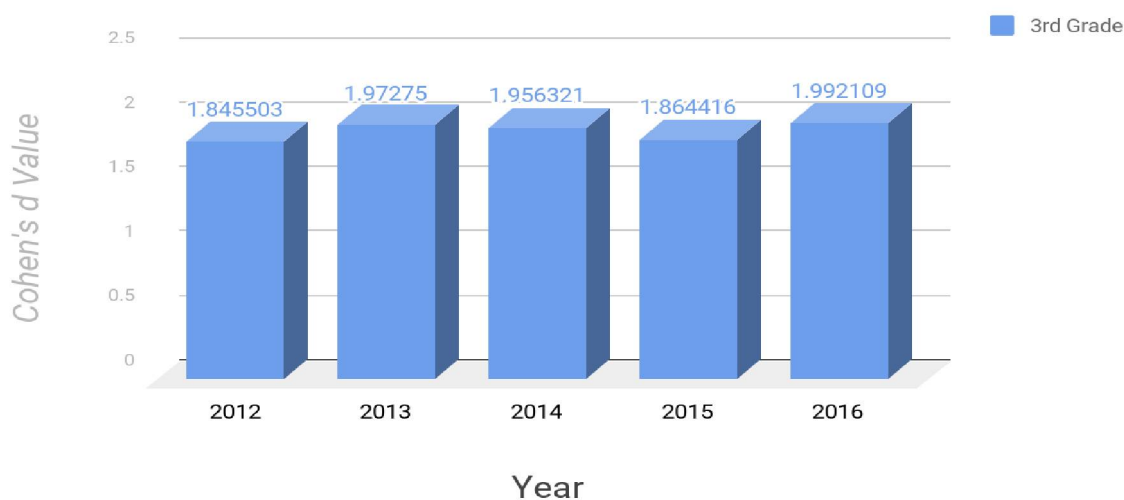Figure 1.3 **Third Grade Pre-Post Within Year Effect Size on DIBELS**

Figure 1.2, shows third grade students making almost 2 standard deviations reading growth as measured by the DIBELS assessment for the years 2012 to 2016. Year after year, the Effect Size was maintained above a 1.84, demonstrating a huge impact. This within-year improvement of two standard deviations in reading was maintained over time.

Table 4.1. t-Test 2012 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	137.53	19	72.509	16.635
	End	278.00	19	91.879	21.078

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-140.474	62.084	14.243	-170.397	-110.550	-9.863	18	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 4.2. t-Test 2013 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	177.00	33	85.441	14.873
	End	332.64	33	87.010	15.147

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-155.636	62.886	10.947	-177.935	-133.338	-14.217	32	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 4.3. t-Test 2014 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	172.00	33	92.355	16.077
	End	294.24	33	96.940	16.875

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-122.242	53.250	9.270	-141.124	-103.361	-13.187	32	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 4.4. t-Test 2015 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	156.23	43	84.288	12.854
	End	277.26	43	93.019	14.185

		Paired Differences						
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Beg-End	-121.023	61.453	9.371	-139.936	-102.111	-12.914	42	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 4.5. t-Test 2016 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	143.42	33	71.465	12.440
	End	267.55	33	94.110	16.382

		Paired Differences						
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Beg-End	-124.121	55.073	9.587	-143.649	-104.593	-12.947	32	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Tables 4.1 through 4.5 indicate that fourth grade students showed a significant difference on t-tests during each of the five years of program participation.

Figure 1.4 Fourth Grade Pre-Post Within Year Effect Size on DIBELS
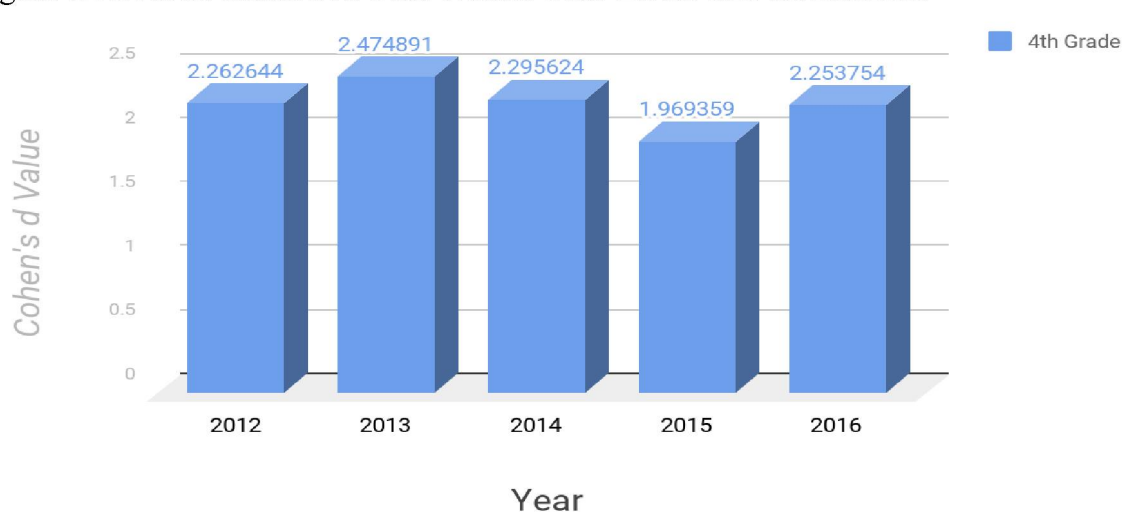
Figure 1.2, shows that fourth graders across the years, displayed an Effect Size of approximately 2.0 or above indicating a 2 to a 2½ standard deviation growth in reading as measured by the DIBELS assessment. These fourth graders made the most growth in 2013 with an Effect Size of 2.47. It is clear that these fourth graders have made tremendous growth in all years analyzed.

Table 5.1. t-Test 2012 5th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	252.11	27	74.487	14.335
	End	342.78	27	101.360	19.507

|					Paired Differences				
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-90.667	72.242	13.903	-119.245	-62.089	-6.521	26	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 5.2. t-Test 2013 5th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	247.35	26	76.418	14.987
	End	343.35	26	85.692	16.806

					Paired Differences				
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-96.000	54.459	10.680	-117.996	-74.004	-8.989	25	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 5.3. t-Test 2014 5th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	288.60	42	116.570	17.987
	End	366.26	42	104.257	16.087

			Paired Differences						
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-77.667	72.101	11.125	-100.135	-55.198	-6.981	41	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 5.4. t-Test 2015 5th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	183.25	24	81.882	16.714
	End	284.33	24	82.411	16.822

			Paired Differences						
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-101.083	50.443	10.297	-122.384	-79.783	-9.817	23	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 5.5. t-Test 2016 5th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	162.52	27	70.337	13.536
	End	257.41	27	75.564	14.542

			Paired Differences						
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-94.889	37.404	7.198	-109.685	-80.093	-13.182	26	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Tables 5.1 through 5.5 indicate that fifth grade students showed a significant difference on t-tests during each of the five years of program participation

Figure 1.5 **Fifth Grade Pre-Post Within Year Effect Size on DIBELS**
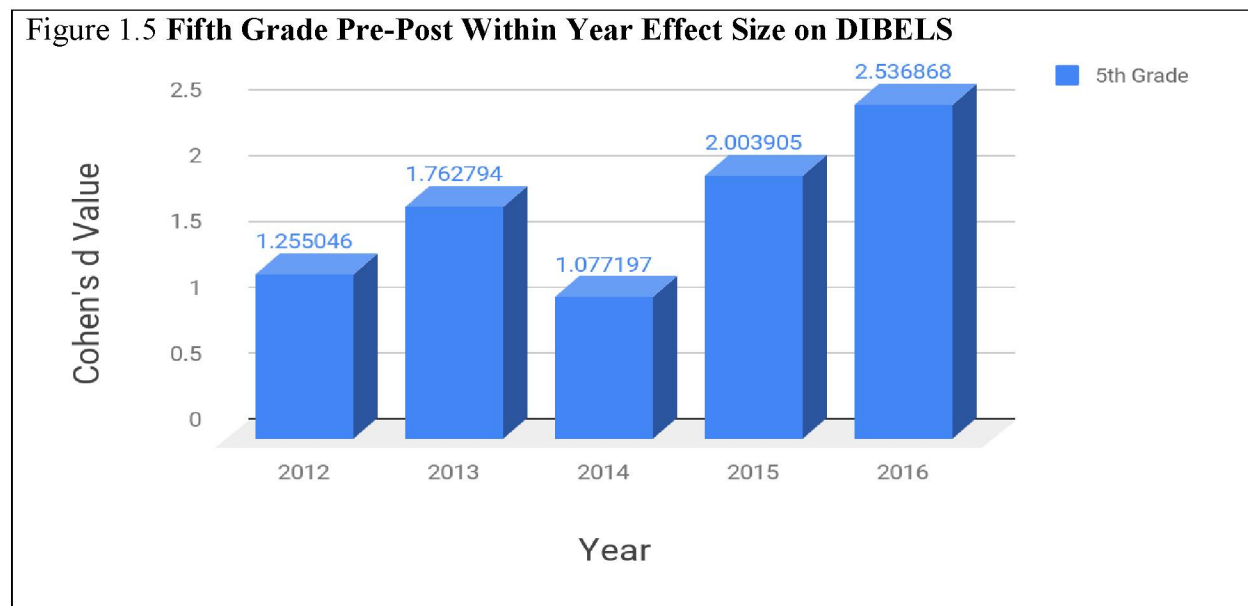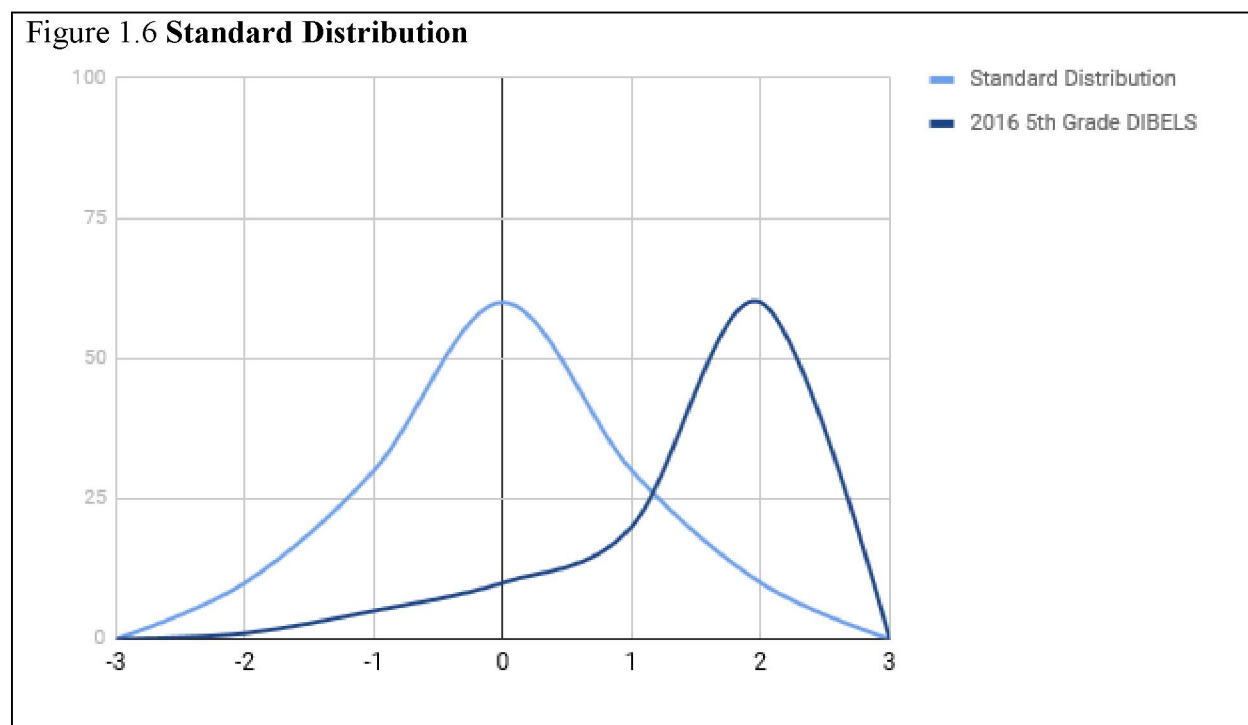

Figure 1.2 shows that fifth graders made significant growth in all years. The Effect Size growth ranges from 1.07 in 2014 to a monumental growth in 2016 of 2.53. These Cohen d values indicate a practical significant growth in reading. In addition, there is a positive growth trend line that demonstrates program maturity over the years.

Figure 1.6 **Standard Distribution**

Figure 1.6 demonstrates a Standard Deviation of a normal distribution, also known as the bell curve. Standard deviation is a number used to tell how measurements from a group are spread out from the average, or expected value. A standard deviation growth of 2 suggests that the mean score of the group has moved from the fiftieth percentile (0 on Figure 1.6) to the ninety-eightieth percentile (2 on Figure 1.6).

SBAC Analysis

Table 6.1. t-Test 4th grade SBAC ELA/Literacy (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	V5	23339.27	45	56.319	8.396
	V8	2368.24	45	60.016	8.947

Paired Sample Tests

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper	t	df	Sig. (2-tailed)
Pair 1	V5-V8	-28.978	51.584	7.690	-44.475	-13.480	-3.768	44	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 6.2. t-Test 5th grade SBAC ELA/Literacy (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	V5	2363.67	40	74.684	11.809
	V8	2380.48	40	76.067	12.027

Paired Sample Tests

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper	t	df	Sig. (2-tailed)
Pair 1	V5-V8	-16.800	52.128	8.242	-33.471	-.129	-2.038	39	.048

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Tables 6.1 and 6.2 indicate that fourth and fifth grade students showed a significant difference on t-tests on the Spring SBAC Language Arts/Literacy assessments following a year of participation in the program.

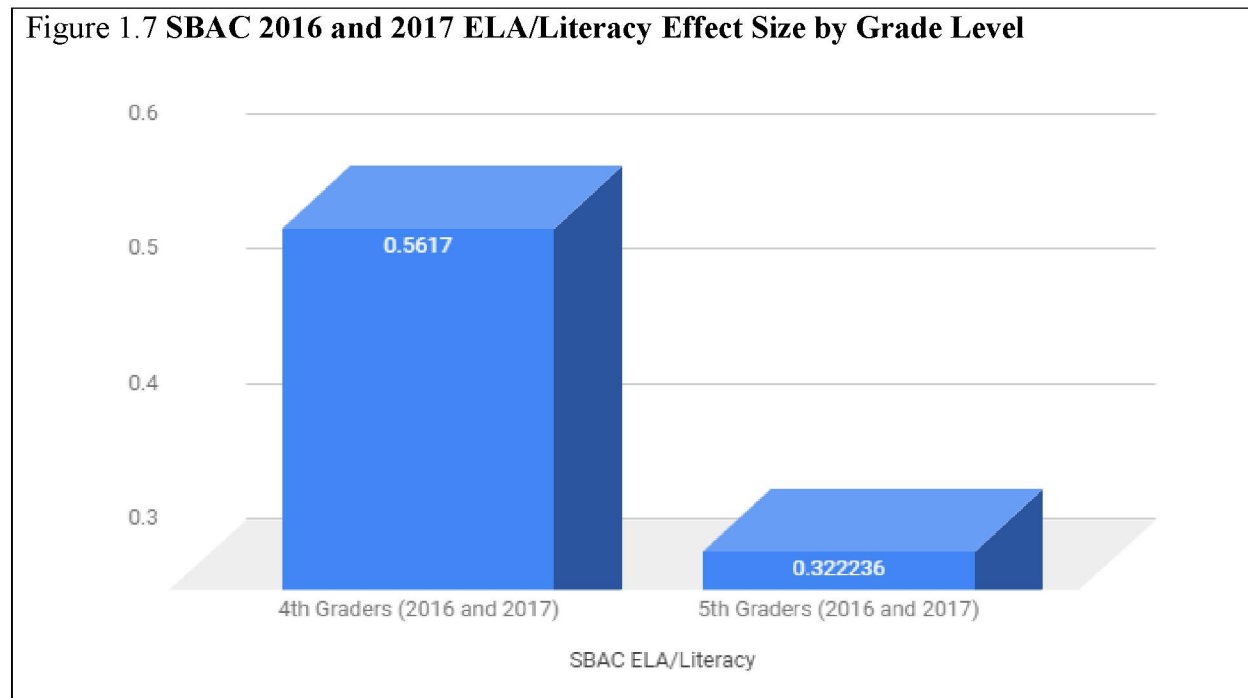Figure 1.7 **SBAC 2016 and 2017 ELA/Literacy Effect Size by Grade Level**

Figure 3.1 shows the Cohen's *d* Effect Size growth of 0.50533 for 4th graders in the 2016-2017 school year. This demonstrates a practical significant growth of ½ standard deviation. In addition, the 5th graders from the 2016-2017 school year showed an Effect Size growth of 0.2900124, which is considered small, insignificant practical growth.

Chapter 6: Discussion, Conclusions, and Recommendations

Evaluation Question 1

Have students who received intervention services at Laguna Vista School shown growth in reading as measured by DIBELS?

Based on the data collected and analyzed, the students who received intervention services at Laguna Vista School showed growth each year at each grade level in reading as measured by the DIBELS. The exception to this finding was 1st grade students who did not make significant growth in the 2012-2013 school year which was the 1st year of program implementation. The null hypothesis (H_o) of no growth is rejected, since students showed significant growth and the alternate hypothesis (H_a) is accepted. The DIBELS assessment is a diagnostic tool that assesses phonemic awareness, alphabetic principle, accuracy and fluency with text, vocabulary and comprehension. It does not, however, assess general literacy. This formative assessment is a diagnostic tool that is administered three times per year. The scores from the initial assessment in the fall and the end assessment in the spring were used. The evaluator ran paired sample t-tests to determine significant difference between assessments and applied Cohen's *d* Value to determine the magnitude of Effect Size.

Based on the findings, there is a trend line that demonstrates program maturity. As the years go by, the program has a higher Effect Size on the DIBELS scores. These findings show that students who received intervention services from the 2012 to the 2016 school years showed significant practical growth in reading skills as measured by the DIBELS. Since the Reading Intervention Program at Laguna Vista was designed around the DIBELS scores, it makes sense that there is significant improvement in reading based on the scores of the DIBELS assessment.

The initial, beginning of the year, Fall DIBELS scores were used to determine student placement in the intervention tiers. The reading intervention program focuses on three main components of reading: reading comprehension, fluency and phonemic awareness/phonics.

The answer to Evaluation Question 1 is students who received intervention services at Laguna Vista School showed significant statistical and practical growth in reading as measured by DIBELS.

Evaluation Question 2

Have students who received intervention services at Laguna Vista School shown growth in the common core language arts standards as measured by SBAC Language Arts/Literacy assessments?

Based on the data collected and analyzed with a t-test, the fourth and fifth grade students who received intervention services in the 2015-2016 school year showed significant growth in the Common Core Language Arts Standards as measured by the SBAC Language Arts/Literacy assessment. The null hypothesis (H_o) of no growth is rejected and the alternate hypothesis (H_a) is accepted based on the positive growth that students made. The calculation of Effect Size suggested that fourth grade program participants made significant practical growth (Cohen $d =$ .56) in the Common Core Language Arts Standards but fifth grade students did not (Cohen $d =$ .32). These findings suggest that although mean significant difference exists, practically speaking, significant growth was not realized by fifth grade students.

It is important to note that for the SBAC Language Arts/Literacy assessment is a summative, end of the year assessment. For this program evaluation, the results from the end of one school year were compared to the results of the end of the next school year. This assessment

is a more comprehensive assessment of reading comprehension which asks students to apply their reading skills to tasks. These findings demonstrate that the intervention program at Laguna Vista School made a positive effect on comprehensive reading skills of fourth graders, but not the fifth graders.

The answer to Evaluation Question 2 is 4th grade students who received intervention services at Laguna Vista School showed significant statistical and practical growth in reading as measured by SBAC, but 5th grade students did not demonstrate similar practical growth. Greater growth was shown in the basic skills assessed by DIBELS than in the more comprehensive Language Arts/Literacy performances assessed by the SBAC. This finding makes logical sense as the reading intervention program was designed to affect DIBELS assessed basic skills before the SBAC comprehensive reading performance assessment was developed.

Recommendations - Implications for Practice

Based on the findings of this program evaluation, it is evident that the reading intervention program at Laguna Vista School has had a positive impact on the DIBELS test scores, however, not as high an impact on the SBAC Language Arts/Literacy scores. Based on the fact that the program was designed using DIBELS data, it makes sense that the higher impact would be on the DIBELS scores and not the SBAC Language Arts/Literacy scores. The evaluator suggests that a greater emphasis be made on the addition of Common Core State Standards (CCSS) in the reading intervention program. What is currently in place is clearly working for students and their basic reading skills, however, the hope is that the addition of these application skills with CCSS would result in a greater Effect Size of the program on the SBAC Language Arts/Literacy. In addition, the evaluator suggests that the Intervention Specialist works

closely with the 4th and 5th grade classroom teachers to support greater emphasis on CCSS language arts standards.

Limitations of the Study

Although this program evaluation was conducted carefully, the evaluator recognizes that there were some limitations. First of all, this program evaluation did not include all students who received intervention services at Laguna Vista School from 2012 to 2016 because students with missing data were not included in the analysis, per t-test assumptions. In addition, while the DIBELS assessment is a reading diagnostic tool, it was not designed for pre and post-test analysis or cross grade-level growth. The SBAC is a summative assessment on the common core standards. Therefore, these two assessments test different aspects of reading. The data necessary to analyze the effects of the program using SBAC results was limited because it was implemented for the first time in 2015, making only three years of data available. Additionally, Tier 2 and Tier 3 students received different services but there were too few students assessed to meet assumptions to run t-tests on each Tier. Finally, as with most program evaluations, the findings and conclusions of this program evaluation are only applicable to the reading intervention program at Laguna Vista School.

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Appendices

Tables

Table 1.1. t-Test 2012 1st grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	71.71	24	30.428	6.211
	End	86.58	24	72.020	14.701

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-14.875	61.753	12.605	-40.951	11.201	-1.180	23	.250

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. No significant difference was found.

Table 1.2. t-Test 2013 1st grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	81.35	37	24.083	3.959
	End	112.14	37	78.881	12.968

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-30.784	64.684	10.634	-52.351	-9.217	-2.895	36	.006

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 1.3. t-Test 2014 1st grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	77.62	26	24.315	4.769
	End	124.27	26	87.458	17.152

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-46.654	83.938	16.462	-80.557	-12.751	-2.834	25	.009

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 1.4. t-Test 2015 1st grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	80.31	16	26.076	6.519
	End	118.63	16	75.784	18.946

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Beg-End	-38.313	70.877	17.719	-76.080	-.545	-2.162	15	.047

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 1.5. t-Test 2016 1st grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	62.64	25	31.563	6.313
	End	98.20	25	69.711	13.942

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Beg-End	-35.560	58.063	11.613	-59.527	-11.593	-3.062	24	.005

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 2.1. t-Test 2012 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	110.38	24	75.336	15.378
	End	183.29	24	84.598	17.268

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Beg-End	-72.917	35.048	7.154	-87.716	-58.117	-10.192	23	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 2.2. t-Test 2013 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	75.79	28	53.181	10.050
	End	134.75	28	68.401	12.927

		Paired Differences			95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-58.964	45.353	8.571	-76.550	-41.378	-6.880	27	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 2.3. t-Test 2014 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	83.04	24	47.982	9.794
	End	139.17	24	74.853	15.279

		Paired Differences			95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-56.125	43.800	8.941	-74.620	-37.630	-6.277	23	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 2.4. t-Test 2015 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	70.50	14	61.019	16.308
	End	128.71	14	71.090	19.000

		Paired Differences			95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-58.214	46.950	12.548	-85.323	-31.106	-4.639	13	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

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Table 2.5. t-Test 2016 2nd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	76.00	8	57.124	20.196
	End	143.38	8	87.885	31.072

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-67.375	42.440	15.005	-102.855	-31.895	-4.490	7	.003

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 3.1. t-Test 2012 3rd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	137.54	13	67.804	18.806
	End	261.08	13	78.715	21.832

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-123.538	66.940	18.566	-163.990	-83.087	-6.654	12	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 3.2. t-Test 2013 3rd grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	161.58	24	62.217	12.700
	End	267.63	24	98.841	20.176

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-106.042	53.945	11.011	-128.821	-83.263	-9.630	23	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 3.3. t-Test 2014 3ʳᵈ grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	120.30	20	60.843	13.605
	End	213.55	20	91.167	20.386

			Paired Differences					
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-93.250	47.666	10.659	-115.559	-70.941	-8.749	19	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 3.4. t-Test 2015 3ʳᵈ grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	116.40	15	58.468	15.096
	End	217.80	15	81.975	21.166

			Paired Differences					
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-101.400	54.387	14.043	-131.519	-71.281	-7.221	14	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 3.5. t-Test 2016 3ʳᵈ grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	102.43	14	65.347	17.465
	End	224.36	14	82.937	22.166

			Paired Differences					
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-121.929	61.206	16.358	-157.268	-86.589	-7.454	13	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 4.1. t-Test 2012 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	137.53	19	72.509	16.635
	End	278.00	19	91.879	21.078

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-140.474	62.084	14.243	-170.397	-110.550	-9.863	18	.000

Note. t = t value. df = degrees of freedom. Sig. = standards for significance level.

Table 4.2. t-Test 2013 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	177.00	33	85.441	14.873
	End	332.64	33	87.010	15.147

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-155.636	62.886	10.947	-177.935	-133.338	-14.217	32	.000

Note. t = t value. df = degrees of freedom. Sig. = standards for significance level.

Table 4.3. t-Test 2014 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	172.00	33	92.355	16.077
	End	294.24	33	96.940	16.875

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-122.242	53.250	9.270	-141.124	-103.361	-13.187	32	.000

Note. t = t value. df = degrees of freedom. Sig. = standards for significance level.

Table 4.4. t-Test 2015 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	156.23	43	84.288	12.854
	End	277.26	43	93.019	14.185

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-121.023	61.453	9.371	-139.936	-102.111	-12.914	42	.000

Note. t = t value. df = degrees of freedom. Sig. = standards for significance level.

Table 4.5. t-Test 2016 4th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	143.42	33	71.465	12.440
	End	267.55	33	94.110	16.382

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-124.121	55.073	9.587	-143.649	-104.593	-12.947	32	.000

Note. t = t value. df = degrees of freedom. Sig. = standards for significance level.

Table 5.1. t-Test 2012 5th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	252.11	27	74.487	14.335
	End	342.78	27	101.360	19.507

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Beg-End	-90.667	72.242	13.903	-119.245	-62.089	-6.521	26	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 5.2. t-Test 2013 5th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	247.35	26	76.418	14.987
	End	343.35	26	85.692	16.806

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-96.000	54.459	10.680	-117.996	-74.004	-8.989	25	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 5.3. t-Test 2014 5th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	288.60	42	116.570	17.987
	End	366.26	42	104.257	16.087

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-77.667	72.101	11.125	-100.135	-55.198	-6.981	41	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 5.4. t-Test 2015 5th grade DIBELS (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	183.25	24	81.882	16.714
	End	284.33	24	82.411	16.822

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-101.083	50.443	10.297	-122.384	-79.783	-9.817	23	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 5.5. t-Test 2016 5th grade DIBELS (Paired Sample Statistics)

|		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Beg	162.52	27	70.337	13.536
	End	257.41	27	75.564	14.542

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Beg-End	-94.889	37.404	7.198	-109.685	-80.093	-13.182	26	.000

Note. t = t value. df = degrees of freedom. Sig. = p < .05 standard for significance level. Significant difference was found.

Table 6.1. t-Test 4th grade SBAC ELA/Literacy (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	V5	23339.27	45	56.319	8.396
	V8	2368.24	45	60.016	8.947

		Paired Sample Tests							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	V5-V8	-28.978	51.584	7.690	-44.475	-13.480	-3.768	44	.000

Note. t = t value. df = degrees of freedom. Sig. = standards for significance level.

Table 6.2. t-Test 5th grade SBAC ELA/Literacy (Paired Sample Statistics)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	V5	2363.67	40	74.684	11.809
	V8	2380.48	40	76.067	12.027

		Paired Sample Tests							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	V5-V8	-16.800	52.128	8.242	-33.471	-.129	-2.038	39	.048

Note. t = t value. df = degrees of freedom. Sig. = standards for significance level.

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Figures

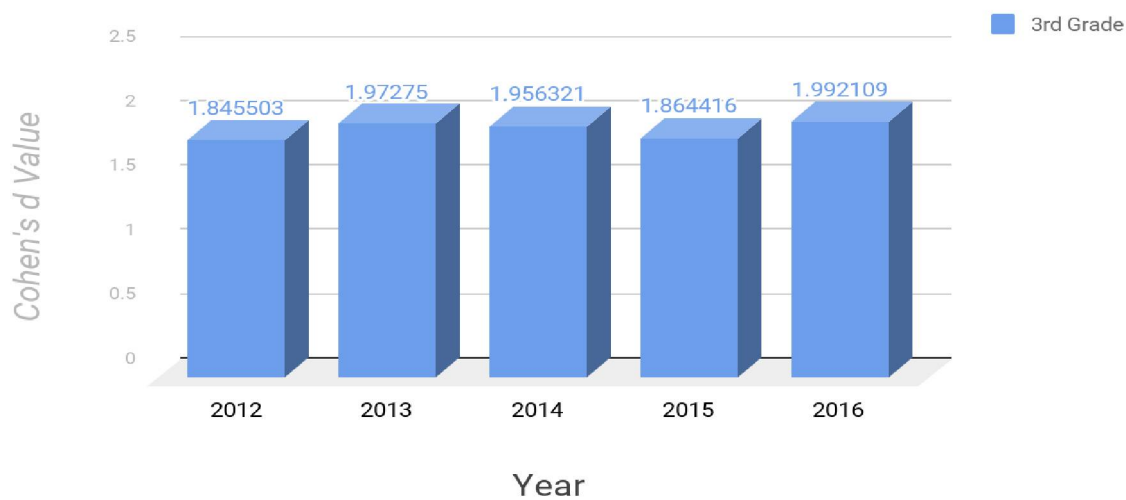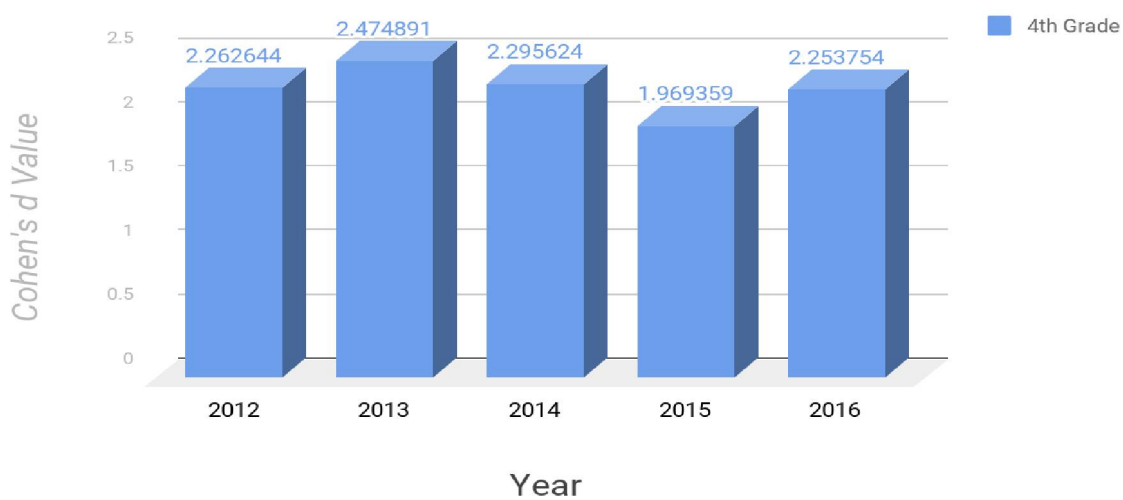Figure 1.1 **First Grade Pre-Post Within Year Effect Size on DIBELS**
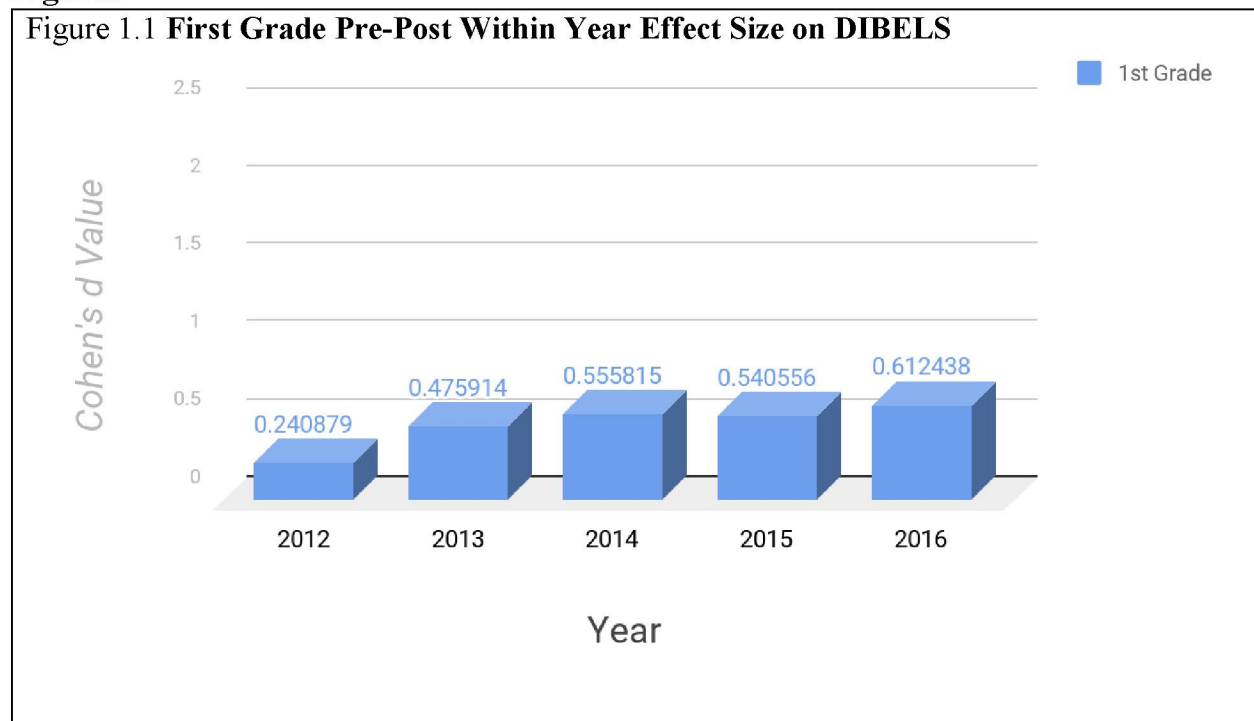
Figure 1.2 **Second Grade Pre-Post Within Year Effect Size on DIBELS**
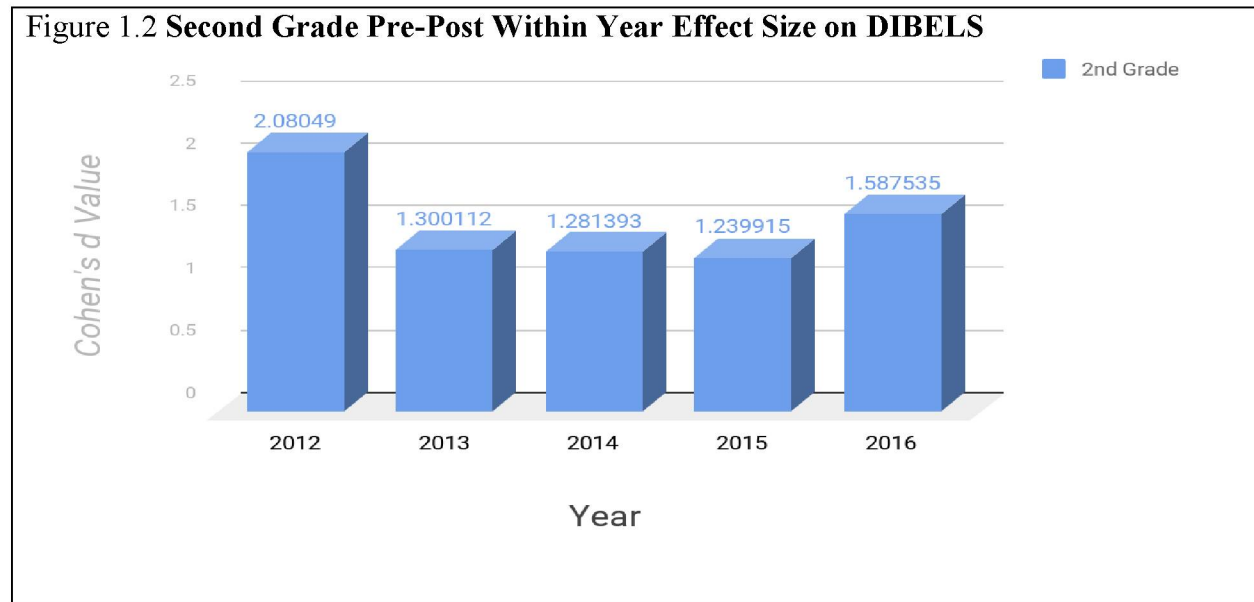
Figure 1.3 **Third Grade Pre-Post Within Year Effect Size on DIBELS**

Figure 1.4 **Fourth Grade Pre-Post Within Year Effect Size on DIBELS**

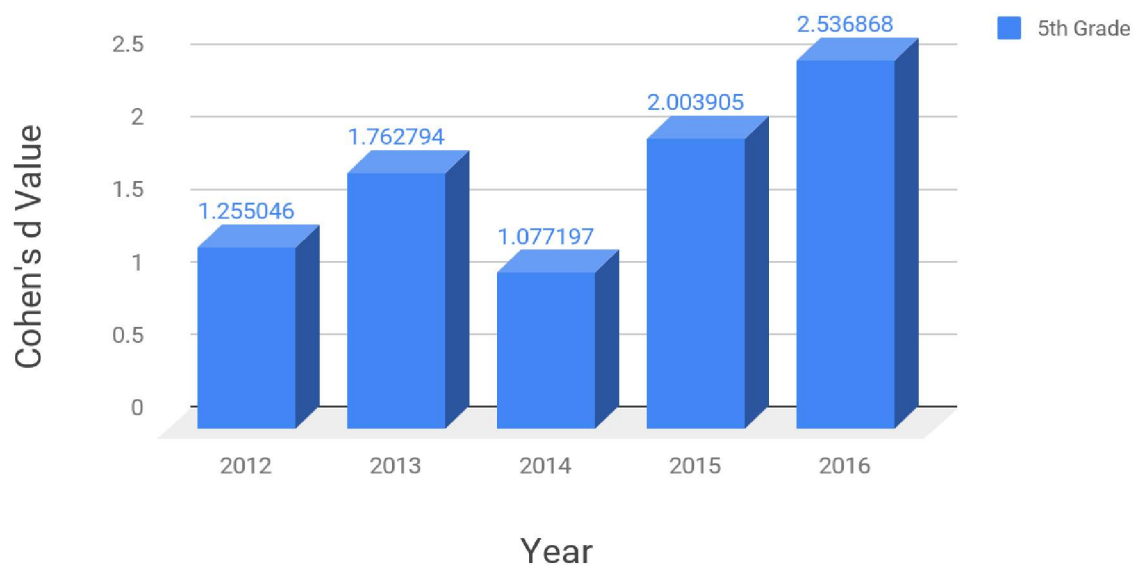Figure 1.5 **Fifth Grade Pre-Post Within Year Effect Size on DIBELS**
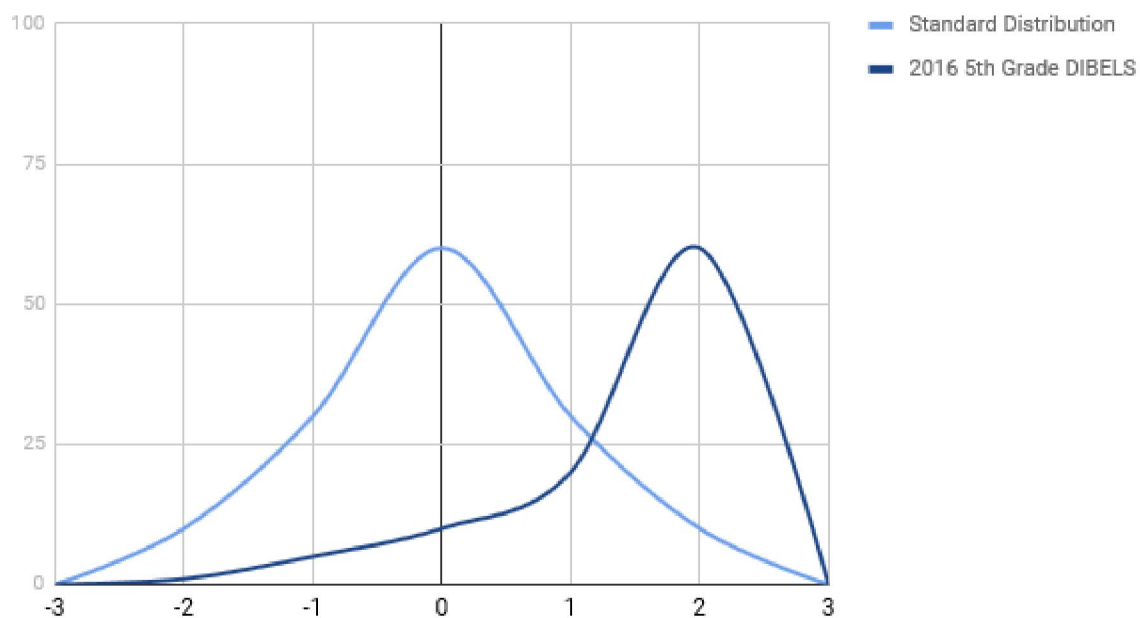

Figure 1.6 **Standard Distribution**

Figure 1.7 **SBAC 2016 and 2017 ELA/Literacy Effect Size by Grade Level**