

A Comparison of Kindergarten Student Reading Scores
When DIBELS Test Administered By Single Versus
Multiple Evaluators

A Special Project
Presented to
Jack McPherson, Ph.D.
Heritage University

In Partial Fulfillment
of the Requirement for the Degree of
Master of Education

Esther Gonzalez
Spring 2009

FACULTY APPROVAL

A Comparison of Kindergarten Student Reading Scores
When DIBELS Test Administered By Single Versus
Multiple Evaluators

Approved for the Faculty

_____, Faculty Advisor

_____, Date

Abstract

The purpose of this quantitative research study was to determine the extent to which Kindergarten students DIBELS scores differed when the test was administered by multiple versus single evaluators. To accomplish this purpose, a review of selected literature was conducted. Additionally, essential baseline data were obtained and analyze and from which related conclusion and recommendation were formulated. No significant difference in Kindergarten students DIBELS scores was found when tested by multiple versus single evaluators..

PERMISSION TO STORE

I, Esther Gonzalez, do hereby irrevocably consent and authorize Heritage University Library to file the attached Special Project entitled, A Comparison of Kindergarten Student Reading Scores When DIBELS Test Administered By Single Versus Multiple Evaluators, and make such paper available for the use, circulation and/or reproduction by the Library. The paper may be used at Heritage University Library and all site locations.

I state at this time the contents of this paper are my work and completely original unless properly attributed and/or used with permission.

I understand that after three years the paper will be retired from the Heritage University Library. If I choose, it is my responsibility to retrieve the paper at that time. If the paper is not retrieved, Heritage University may dispose of it.

_____, Author

_____, Date

TABLE OF CONTENTS

	Page
FACULTY APPROVAL.....	ii
ABSTRACT.....	iii
PERMISSION TO STORE.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	viii
CHAPTER 1.....	1
Introduction.....	1
Background for the Project.....	1
Statement of the Problem.....	2
Purpose of the Project.....	3
Delimitations.....	3
Assumptions.....	4
Hypothesis.....	5
Null Hypothesis.....	5
Significance of the Project.....	5
Procedure.....	5
Definition of Terms.....	7
Acronyms.....	8

CHAPTER 2.....	9
Review of Selected Literature.....	9
Introduction.....	9
Dynamic Indicators of Basic Early Literacy	
Skills.....	10
Camas Elementary Students.....	14
Students from Poverty.....	16
Summary.....	21
CHAPTER 3.....	
Methodology and Treatment of Data.....	
Introduction.....	
Methodology.....	
Participants.....	
Instruments.....	
Design.....	
Procedure.....	
Treatment of Data.....	
Summary.....	

CHAPTER 4.....

 Analysis of Data.....

 Introduction.....

 Description of the Environment.....

 Hypothesis/Research Questions.....

 Null Hypothesis.....

 Results of the Study.....

 Findings.....

 Discussion.....

 Summary.....

CHAPTER 5.....

 Summary, Conclusions and Recommendations.....

 Introduction.....

 Summary.....

 Conclusions.....

 Recommendations.....

REFERENCES.....

APPENDIX.....

LIST OF TABLES

	Page
Table 1, Kindergarten DIBELS Initial Sound Fluency Winter scores.....	30
Table 2, Distribution of t.....	32

LIST OF FIGURES

	Page
Figure 1, <i>t</i> -Test for Independent Samples.....	31

CHAPTER 1

Introduction

Background for the Project

The No Child Left Behind Act signed into law by President Bush on January 8, 2002, encouraged educators across America to make sure that all students were reading at grade level by the time they were in third grade. President Bush's agenda was dedicated to improving the countries public school system while bringing particular focus to using scientifically proven methods for reading instruction and assessment.

In 1997, the United States Congress requested that The National Reading Panel (NRP) assemble and publish years of collected scientific research on proven methods of teaching children to read. From the findings of the NRP, the Reading First Initiative was implemented. Reading First, a nation-wide grant provided funding assistance to high poverty schools through the use of scientifically proven reading instructional and assessment programs in Kindergarten through third grade classrooms. The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) was a proven reading assessment tool, according to Reading First. This standardized test assessed letter naming, initial

sounds, phoneme segmentation, nonsense words and oral reading, and was administered in a few minutes to each student individually (Good & Kaminski, 2002).

Teachers had to ensure that all students would be reading at grade level by the end of the third grade. Accordingly, DIBELS scores were used for ability grouping and identification of students that needed extra interventions. This specific manner in which DIBELS reading assessment was administered to students afforded an opportunity to undertake this study.

Statement of the Problem

As voiced by Kindergarten teachers at Camas Elementary School in Wapato, Washington, there was a need to change how students were administered DIBELS tests. This was evidenced by inconsistencies between student test scores when the test was administered by multiple evaluators throughout the year, compared to test results when administered by a single evaluator. As consequence, students DIBELS test scores were questioned.

Phrased as a question, the problem which represented the focus of the present study maybe stated as follows: To what extent Kindergarten students DIBELS scores differ when the test was administered by multiple versus single evaluators?

Purpose of the Project

The purpose of this quantitative research study was to determine the extent to which the Kindergarten students DIBELS scores differed when the test was administered by multiple versus single evaluators. To accomplish this purpose, a review of selected literature was conducted. Additionally, essential baseline data were obtained and analyze and from which related conclusion and recommendation were formulated.

Delimitations

The study only included students that were enrolled at Camas Elementary School in Wapato, Washington, who were enrolled in the researcher's classroom. These students were from the researcher's classroom during the school year of 2007-2008. The students were grouped into two groups, treatment (Y) and control (X). The study only included test administrators that were employed and trained by the Wapato School District to administer the DIBELS assessments in the researcher's classroom. The researcher was not one of the test administrators.

The age of the participants varied between five and seven year olds. Of the 20 students in the research study, all 20 students were Hispanic. There were twelve girls and eight boys. Five of these students received Speech/Language services

provided by the school district. Two of the students received other Special Education services provided by the school district. Classroom instruction was presented in Spanish and English language. Every other day the language would switch, one day English, one day Spanish. The DIBELS reading assessment was administered to all students in English only.

Assumptions

During the present study, the following assumptions were believed by the researcher (Esther Gonzalez) to be true. Due to inconsistencies between students' past DIBELS test scores, the assumption was made that those inconsistencies had to do with the manner in which the test was administered. A further assumption was made that all test administrators had received the same DIBELS training, were following the same testing script, and were therefore equally valid DIBELS evaluators. Finally, the researcher assumed that DIBELS test scores in the treatment group would increase due to the fact that inconsistencies in test administration would be eliminated.

Hypothesis

Kindergarten students DIBELS scores will improve when the test is administered by a single versus multiple evaluators.

Null Hypothesis

Kindergarten students DIBELS scores will show no significant improvement when the test was administered by a single versus multiple evaluators. Significance will be assessed for $p \geq$ at .05, .01, and .001 levels.

Significance of the Project

The researcher believed it would be worthwhile to study DIBELS test data for participating Kindergarten students at CES to determine if the manner in which the test was administered impacted student test results. If scores were effected when students had the same test evaluator throughout the school year compared to students who were tested by multiple evaluators, this information could prove useful for teachers and administrators seeking to improve reading interventions.

Procedure

Procedures employed in the present study evolved in several stages. Prior to the opening of the 2007-2008 school years, the researcher (Esther Gonzalez) discussed the study with the Assistant Principal at Camas Elementary School and asked permission to alter the schools protocol for how DIBELS data were obtained. Prior protocol allowed whatever test administrator available to test the classroom, or partial classroom of students. As a result, students in a single classroom

were tested by as many as four different individuals, or by one tester throughout the school year. This caused differences in how students were tested and how students were scored between classrooms.

After the testing protocol was changed:

One group of ten (10) students were tested and scored by a single tester three (3) times during the school year.

Second group of ten (10) students were tested and scored by multiple testers.

Prior to the change in testing protocol, the researcher organized students in her Kindergarten classroom into two (2) homogeneous groups based on Reading skills and abilities, including: Control group X: received DIBELS testing three times by multiple test administrators throughout one school year. Treatment group Y: received DIBELS testing three times by a single test administrator throughout one school year.

Control group X and treatment group Y were then tested in the fall, winter and spring of the 2007-2008 school year. The DIBELS baseline data were then obtained and recorded for fall, winter and spring terms. Data were compared statistically to determine whether there was significant difference between the two groups.

Definition of Terms

Significant terms used in the context of the present study have been defined as follows:

casual register. Speaker or writer goes around and around an issue before finally getting to the point, considered the language between friends.

Dynamic Indicators of Basic Early Literacy Skills (DIBELS). A scientifically based evaluative tool has been designed to measure reading skills.

formal register. Speaker or writer gets straight to the point, the language of the Middle and Upper class, work and school.

low income. Indicates that a family earned low wages according to federal standard of living guidelines.

migrant. Refers to a family that made their living from the land and travel from one place to another for work.

quantitative research. Collection of numerical data in order to explain, predict and/or control phenomena of interest.

transitional bilingual. A person who is in transition from being able to speak one language, to being able to speak two languages.

t-test. An inferential statistics technique used to determine whether the means of two groups are significantly different at a given probability level.

t-test for independent samples. A parametric test of significance used to determine whether, at a selected probability level.

Acronyms

CES Camas Elementary School

DIBELS. Dynamic Indicators of Basic Early
Literacy Skills

EALR. Essential Academic Learning Requirement

GLE. Grade Level Expectation

NRP. National Reading Panel

NWF. Nonsense Word Fluency

ORF. Oral Reading Fluency

OSPI. Office of the Superintendent of Public
Instruction

PSF. Phoneme Segmentation Fluency

RTF Retell Fluency

WASL. Washington Assessment of Student Learning

WUF Word Use Fluency

YIR Yakima Indian Reservation

CHAPTER 2

Review of Selected Literature

Introduction

The review of selected literature presented in Chapter 2 has been organized to address three research topics which provided essential background information for the present study. First, the writer's investigation of the DIBELS reading assessment was a subject that received particular attention. Next, the writer's investigation of students from low income families and poverty was also the source of in-depth investigation. Finally, information obtained from the Washington State Office of Superintendent of Public Instruction (OSPI) provided greater understanding of the characteristics of Camas Elementary School, the location of the present study.

The preponderance of the research cited in Chapter 2 was current within the last five (5) years. Key resources utilized included Education Resource Information Center (ERIC), the internet, and Pro Quest. Information obtained from a hand-search of selected materials was also incorporated.

Dynamic Indicators of Basic Early Literacy Skills

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) literacy assessment, scientifically based

evaluative tool has been designed to measure reading skills of students in Kindergarten through sixth grade. This reading assessment evolved from the Reading First initiative and was selected as a proven research based assessment tool, in accordance with the National Reading Panel (NRP 2000). The DIBELS assessment measured the five "Big Ideas" of Phonemic Awareness, Alphabetic Principle, Accuracy and Fluency with connected Text, Vocabulary and Comprehension, described by the Institute for the Development of Educational Achievement (2000) as follows:

Phonemic Awareness is measured by Initial Sounds Fluency (ISF) and Phoneme Segmentation Fluency (PSF). Alphabetic Principle is measured by Nonsense Word Fluency (NWF). Accuracy and Fluency with Connected Text is measured by Oral Reading Fluency (ORF). Vocabulary is measured by Word Use Fluency (WUF); still under development). Comprehension is measured by ORF and Retell Fluency (RTF) (<http://dibels.uoregon.edu/>).

The DIBELS tests were short and lasted approximately one minute per section. Tests were administered to students individually and were timed by either a single or multiple test administrators.

The test administrator was responsible for testing, scoring, and timing each individual student, one at a time in accordance with the DIBELS administration and scoring guide directions. According to the Florida Center for Reading Research (2006), Kindergarten students were administered the following sections of the DIBELS assessment throughout one school year: Letter Naming, Initial Sounds, Phoneme Segmentation and Nonsense Words. Although DIBELS was a scientifically proven assessment method under the Reading First Initiative, people questioned the DIBELS assessment and its design. Goodman (2006), in an October 2006 article of the FairTest EXAMINER, Cited certain shortcomings in the DIBELS Assessment, as follows:

Teachers must score kids on the fly while administering the test and paying attention to the student. While administering the test, teachers must use a stopwatch, which students find distracting. Because of these flaws, DIBELS can not be administered and scored consistently (p.17).

Tierney & Thome (2006) also cited certain flaws in the DIBELS Assessment, which focused primarily on cultural bias. As stated by these authorities:

DIBELS may be perpetuating the (race and class) literacy gap it has promised to eliminate...[The] Definition of literacy has been narrowed for the most vulnerable students...Once again, the rich get richer and the poor are left only with the most basic of basics (p. 17).

The DIBELS test has been used as a Reading Assessment tool at Camas Elementary School since the 2005-2006 school year. Camas Elementary School (CES) has used DIBELS to assess Kindergarten through second grade students in reading. District-trained DIBELS test administrators have been responsible for administering the test and are invited to a teacher's classroom to examine student one at a time. The test administrator would take each student to a designated testing room, perform each subtest, each lasting approximately one minute, then return the child to the classroom in exchange for another student. Classroom teachers were not allowed to test students, but were responsible for recording student scores in the University of Oregon's online DIBELS database. According to Goodman (2006):

Within a few days of entering Kindergarten, hundreds of thousands of five year olds are given their first opportunity to taste failure in their

ability to say the names of letters in three seconds, and sound out three letter words in three seconds. And if they can't get enough letters named, initial sounds made, or words sounded in one minute in each DIBELS subtest then they have failed and are thus in need of intensive instruction even though they just started Kindergarten. From then on they will be DIBELED three times during each year through third grade and sometimes beyond. By midyear in Kindergarten the children also must sound out a page of nonsense syllables.... five year olds are simply overwhelmed by being escorted to an unfamiliar place in the school where a stranger with a stopwatch rushes them through a series of tasks and stops them before they have had any chance to figure out what is happening (p.1).

Although CES was not a Reading First school, teachers there have been encouraged by administrators to use instructional time to teach to the DIBELS test and, to use these test results to measure whether or not student reading scores have improved.

Characteristics of Students From Low Income Families and Poverty

As noted above from Washington State Office of Superintendent of Public Instruction (OSPI) research data, the majority of students at CES were low income/high poverty minority students. Further, the OSPI Evaluation and Research Department (2001) found that, individual students from low-income families have a statistically higher risk of dropping out of school, low academic achievement, and retention in grade, among other negative outcomes.

Research conducted by Payne (2001) focused on differences in the way in which children of poverty communicate. This authority found that students with backgrounds in poverty were found to have communication styles different from middle class students. As explained by Payne:

Students from poverty communicated with casual register, instead of the formal register of middle class students. The majority of minority and poverty students functioned in casual register. When casual register was used, the speaker or writer goes around and around an issue before finally getting to the point. Casual register was considered the language between friends. Casual register word choice was not specific, incomplete and dependent on body

language or nonverbal cues. Students that used casual register could not use formal register without first being taught formal register. Communicating with casual register was a serious problem for students from poverty, as standardized state tests were in formal register. Students from poverty also used random discourse patterns and storytelling. As casual register was the language of poverty, formal register was the language of the Middle and Upper class, work and school. Complete sentences and specific word choice were used. The formal register speaker or writer gets straight to the point.

Similarly, Bransford, Brown, et al.(2000) have discussed cultural variations in the ways in which communication styles vary significantly within any cultural community, which may include communities characterized by low-income. As stated by these authorities:

There were great cultural variations in the ways in which adults and children communicate, and there were wide individual differences in communication styles within any cultural community. All cultural variations provided strong supports for children's development.

However, some variations were more likely than others to encourage development of the specific kinds of knowledge and interaction styles that 15 were expected in typical U.S. school environments. It was extremely important for educators-and parents-to take these differences into account (pp. 108-109).

Gorski (2005) alluded to Payne's research when discussing stereotypes and other challenges faced by educators when attempting to assimilate students in poverty into the mainstream of American Life. Said Gorski:

A Framework consists, at the crudest level, of a stream of stereotypes and a suggestion that we address poverty and education by "fixing" poor people instead of reforming classist policies and practices. The root of her framework-that poverty persists because people in poverty don't understand the rules of the middle class-exemplifies deficit thinking....in addition, her discussion of language registers and discourse patterns supports the classist notion that rigid register and discourse patterns used by certain people are superior to those used by other

people. Ultimately, Payne wants students in poverty to assimilate into a system they often experience as oppressive and she calls on predominantly middle class teacher to facilitate and enforce this assimilation (pp.3-4).

Beegle (2004) found that relationships were much more important for students from poverty than they were for students from middle class backgrounds. For example, students from poverty had a unique oral culture. This meant that students from poverty acquired most of the information from their everyday life experiences verbally, not written as was the case for the middle class. Many Native Americans have experienced poverty firsthand and also have evolved a strong oral culture. Students from an oral culture needed to hear things repeated over and over again. Oral culture students tended to store information in their short term memory, and information that was not used daily was tossed out. Most importantly, oral culture students from poverty needed relationships and meaningful connections in order for them to take risks in learning and to venture out of their comfort zone.

Raborn (2002) concluded that minority students, particularly those from low-income backgrounds, were often underrepresented in educational programs for the

gifted: This was probably due to the lack of meaningful relationships between impoverished students and their teachers, or resulted differences in communication styles between students from poverty and their middle class teachers. According to research conducted by The National Commission on Teaching and America's Future (2004):

Children who come from families with poorer economic backgrounds...are not being given an opportunity to learn that is equal to that offered children from the most privileged families. The obvious cause of this inequality lies in the finding that the most disadvantaged children attend schools that do not have basic facilities and conditions conducive to providing them with a quality education (p.2).

In the same manner, problems faced by children in poverty were found to be consistent with Maslow's theory of the Hierarchy of Needs. As suggested by Gorski (2005):

If a student's lower level needs were not being met, for example if they were hungry or did not feel safe, they would not be able to focus on higher level needs, such as the need to acquire knowledge (p.6).

Camas Elementary School Students

Camas Elementary School was one of three Elementary schools in Wapato School District #207 at Wapato, Washington. According to the Washington State OSPI and the Washington State Report Card, there were 600 students enrolled at (CES) in October, 2007. The majority of the 600 students enrolled were considered low-income minority students. The demographics for Camas Elementary were as follows:

1. Hispanic, 66.2%
2. American Indian, 28.0%
3. White, 4.7%
4. Asian 1.2%

In addition, 91.0% of students were eligible for the federal Free or Reduced lunch program, 12.55% received Special Education Services, 37.4% were considered Transitional Bilingual, and 31.2% were Migrant students (reportcard.ospi.k12.wa.us).

Camas Elementary School, a K-5 building located on the Yakama Indian Reservation (YIR), was considered a rural farming community. Local residence included many migrant farm workers as well as Native American families that lived in Indian housing on the YIR. Camas Elementary School housed two administrators, three secretaries, one nurse, 34 teachers and 27 para-educators. Instruction at CES was guided by the

Washington State Essential Academic Learning Requirements (EALR) and the Washington State Grant Level Expectations (GLE). The Scott-Foresman Reading series was used to teach Reading instruction and the Math Expression series was adopted for teaching Mathematics. Third, fourth, and fifth grade students participated in the Washington Assessment of Student Learning (WASL). In 2007-2008, 27.1% of third grade students passed the Reading section of the WASL and 25.6% passed the Math component. Fourth grade, 55.0% passed Reading, 38.4% passed Math, and 59.8% met Writing standards on the WASL. In fifth grade, 49.1% Reading, 37.0% passed the Math, and 7.4% passed the New Science section of WASL (reportcard.ospi.k12.wa.us).

Summary

The review of selected literature presented in Chapter 2 supported the following research themes:

1. The DIBELS reading assessment evolved from the Reading First Initiative and was selected as a proven research based assessment tool, in accordance with the National Reading Panel.

2. Educators and parents have been encouraged to take into account the impact of poverty on student learning, along with cultural variations with the ways

in which communication styles vary significantly within any cultural community.

3. The majority of students enrolled at Camas Elementary school (CES) were minority students that lived in poverty.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The purpose of this quantitative research study was to determine the extent to which the Kindergarten students DIBELS scores differed when the test was administered by multiple versus single evaluators. To accomplish this purpose, a review of selected literature was conducted. Additionally, essential baseline data were obtained and analyzed, and from which related conclusion and recommendation were formulated.

Chapter 3 contains a description of the methodology used in this study. Additionally, the researcher included details concerning participants, instruments, design, procedure, treatment of the data, and summary.

Methodology

The researcher (Esther Gonzalez) used a quantitative experimental research method where at least one independent variable was manipulated. Significance between the control and treatment groups was determined by implementing and analyzing a *t*-test for independent variables. Both groups were administered in the fall and winter. The control group (X) received DIBELS testing three times by three

or four different test evaluators. The treatment group (Y) received DIBELS testing three times by the same test administrator throughout one school year. The gathered data were compared statistically to determine whether or not there was significant difference between the two groups.

Participants

Participants in the study were students enrolled at Camas Elementary school in Wapato, Washington, who were also enrolled in the researcher's classroom. The study involved one group of Kindergarten students. These students were enrolled in the researcher's classroom during the 2007-2008 school year. The age of the students varied between five and seven years of age. Of the twenty students in the research study, twenty were of Hispanic ethnicity. There were twelve girls and eight boys. Three of the participants received Speech/Language services provided by the district. Two received other Special Education services. All were bilingual Spanish/English speaking students. Classroom instruction was presented in Spanish/English from the beginning of school year until December. The researcher provided partial Dual Language instruction. Starting in January, classroom instruction was in English only. Camas Elementary was considered a high poverty school.

Instruments

The Dynamic Indicators of Basic Early Literacy Skills 6th Ed., University of Oregon, Kindergarten Benchmark Assessment, was implemented and used for assessment of student literacy skills. The DIBELS Kindergarten Benchmark Assessment was administered and graded in the fall, winter and spring of the 2007-2008 school year, by trained test administrators that were employed by the Wapato School District. The DIBELS assessment measured student literacy in the following areas:

1. Initial Sound Fluency (Fall, Winter)
2. Letter Naming Fluency (Fall, Winter, Spring)
3. Phoneme Segmentation Fluency (Winter, Spring)
4. Nonsense Word Fluency (Winter, Spring)
5. Word Use Fluency (Optional), (Fall, Winter, Spring)

The Initial Sound Fluency test was administered in the fall and again in winter. Winter scores served as the posttest when scores were compared between treatment (X) and control (Y) groups.

Design

This quantitative study utilized control and treatment groups to determine possible increased pre-reading skill levels of Kindergarten learners. The two independent groups included:

Group X (i.e. control group)

Ten (10) Kindergarten students were identified to receive DIBELS testing three times by multiple test administrators throughout one school year.

Group Y (i.e. treatment group)

Ten (10) Kindergarten students were identified to receive DIBELS testing three times by a single/same test administrator throughout one school year.

Procedure

Procedures employed in the present study evolved in several stages, as follows:

1. Prior to the opening of the 2007-2008 school year, the researcher (Esther Gonzalez) discussed the study with the Assistant Principal at CES and asked permission to alter the schools protocol for how DIBELS data were obtained. Prior protocol had allowed whatever test administrator was available to test a classroom, or partial classroom of students. As a result students in a single classroom were tested by as many as four different individuals, or by one tester throughout the school year. This caused differences in how students were tested and how students were scored between classrooms.

2. After the testing protocol was changed:

One group of ten (10) students were tested and scored by a single tester three (3) times during the school year. A second group of ten (10) students were

tested and scored by multiple testers.

3. Prior to the change in testing protocol, the researcher organized students in her Kindergarten classroom into two (2) homogeneous groups based on Reading skills and abilities, including:

The control group (X) received DIBELS testing three times by multiple test administrators throughout one school year.

The treatment group (Y) received DIBELS testing three times by a single/same test administrator throughout one school year.

4. Control group X and treatment group Y were then tested in the fall, winter and spring of the 2007-2008 school year.

5. DIBELS baseline data were then obtained and recorded for fall, winter and spring terms.

6. Data were then compared statistically to determine whether there were significant differences between the two groups.

Treatment of the Data

A *t*-test for independent variables was chosen as an appropriate measurement tool for determining significance between the treatment and control groups.

The researcher used the WINDOWS STATPAK statistical software program and the text, Educational Research: Competencies for Analyze and Applications (Gay, Mills, & Airasian, 2006) for interpreting data. Significance was assessed for $p >$ at .05, .01, and .001 levels.

To test the null hypothesis which would show no significance difference between treatment group Y and control group X, a t -test of independent samples was used to analyze the DIBELS Initial Sound Fluency scores. The following formula was implemented to test for significance:

Summary

Chapter 3 provided a description of the research methodology employed in the study, participants, instrument used, research design, and procedures utilized. Details concerning treatment of the data obtained and analyzed were also presented.

CHAPTER 4

Analysis of Data

Introduction

The present study sought to determine the extent to which Kindergarten students DIBELS scores differed when the test was administered by multiple versus single evaluators.

Chapter 4 was organized to include the following: Description of the Environment; hypothesis; null hypothesis; results of the study; findings; and, summary.

Description of the Environment

The present study, which was conducted at Camas Elementary school in the Wapato School District, during the 2007-2008 year, involved students who were enrolled in the researcher's classroom. The study involved one group of Kindergarten students. The students were organized into control (X) and treatment(Y) groups. The study included only test administrators that were employed and trained by the Wapato School District to perform DIBELS assessments. The researcher was not one of the DIBELS test administrators. The age of the participants varied between five and seven years. Of the 20 students in the research study, all 20 students were Hispanic. There were 12 girls and 8 boys. Five students received Speech/Language services provided by the district.

Two received other Special Education services. Classroom instruction was presented in Spanish and English language. Every other day, language instruction would change from Spanish to one-day English (Dual language) until January. Thereafter, classroom instruction was all English. The DIBELS reading assessment was administered to all students in English only.

Hypothesis/Research Question

Kindergarten students DIBELS test scores will improve when the test is administered by a single versus multiple evaluators.

Null Hypothesis

Kindergarten students DIBELS test scores will show no significance improvement when the test was administered by a single versus multiple evaluators. Significance was assessed for $p \geq$ at .05, .01, and .001 levels.

Results of the Study

The winter scores from the DIBELS Kindergarten Benchmark Assessment for Initial Sound Fluency were shown in Table 1. All twenty students were given the Initial Sound Fluency testing in the fall of 2007 and again in the winter of 2008. No students were excluded from the test.

Table 1

Kindergarten DIBELS Initial Sound Fluency Winter Scores

Treatment Group		Control Group	
Student	Score	Student	Score
Y1	37	X1	23
Y2	6	X2	6
Y3	13	X3	6
Y4	16	X4	10
Y5	34	X5	9
Y6	17	X6	1
Y7	5	X7	10
Y8	15	X8	14
Y9	9	X9	0
Y10	0	X10	11

Note: Mean of the treatment group = 17.00. Mean for the Control group = 10.00.

In order to test the null hypothesis, the data were treated statistically by performing a *t*-test for independent groups. The formula was found in Educational Research: Competencies for Analyze and Application (Gay, Mills and Airasian, 2006, p. 349).

Figure 1 showed the t -test results when the scores of the treatment group and control group were compared by using the Statpak t -test calculations for independent samples.

Figure 1

t -test For Independent Samples. Treatment Group Comparison to Control Group

Statistic	Values
No. of Scores in Group X	9
Sum of Scores in Group X	90.00
Mean of Group X	10.00
Sum of Squared Scores in Group X	1200.00
SS of Group X	300.00
No. of Scores in Group Y	9
Sum of Scores in Group Y	153.00
Mean of Group Y	17.00
Sum of Squared Scores in Group Y	3617.00
SS of Group Y	1016.00
t -value	-1.64
Degrees of freedom	16

Figure 1 t -test For Independent Samples.

Treatment Group Comparison to Control Group displayed 9 scores for group Y (treatment) and 9 scores for group X (control).

The sum of Scores for Y was 153 and X was 90. The mean of Group Y was 17 and Group X was 10. The Sum of the Squared Scores in Group Y was 3617 and Group X was 1200. The degree of freedom was 16 and the t -value was -1.64. The values used to determine significance were published in the textbook Educational Research: Competencies and Application (Gay, Mills, and Airasian, 2006, p. 571).

Table 2 displays the t -value with 16 degrees of freedom used in the study.

Table 2

Distribution of t

	P		
df	.05	.01	.001
16	2.120	2.921	4.015

Findings

From the analysis of data the investigator (Esther Gonzalez) concluded that the null hypothesis was accepted at the .05, .01, and .001 levels. There was no significant difference in DIBELS test scores between a single versus multiple evaluators throughout the year. There was no support for the hypothesis, as the scores did not show a significant difference.

Summary

Chapter 4 reviewed and detailed the description of the environment, hypothesis, null hypothesis, results of the study, and findings. The analysis of data produced the following results:

1. The hypothesis was not supported at .05, .01, and .001 levels.
2. The null hypothesis was accepted at .05, .01, and .001 levels.
3. There was no significant difference in DIBELS test scores between students that had a single versus multiple administrators throughout the year.

CHAPTER 5

Summary, Conclusions, and Recommendations

Summary

The purpose of this quantitative research study was to determine the extent to which the Kindergarten students DIBELS test scores differed when the test was administered by multiple versus single evaluators. To accomplish this purpose, a review of selected literature was conducted. Additionally, essential baseline data were obtained and analyzed and from which related conclusions and recommendations were formulated.

Conclusions

From the review of selected literature in Chapter 2, and from the analysis of data in Chapter 4, the following conclusions were reached:

1. The DIBELS reading assessment evolved from the Reading First initiative and was selected as a proven research based assessment tool, in accordance with the National Reading Panel.

2. Educators and parents have been encouraged to take into account the impact of poverty on student learning, along with cultural variations in the ways in which communication styles vary significantly within any cultural community.

3. The majority of students enrolled at Camas Elementary School at the Wapato School District were minority students that lived in poverty.

4. The null hypothesis was accepted at .05, .01, and .001 levels. No significant difference was found in DIBELS test scores between students that had a single evaluator throughout the year.

5. There was no support for the hypothesis as there was no significant difference between the two groups.

Recommendations

Based on the conclusions cited above, the following recommendations have been suggested:

1. The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) should be administered to determine which specific pre-reading skills need additional instruction.

2. Teachers and parents need to become familiar with the impact of poverty on student learning, along with cultural variations in the ways in which communication styles may vary significantly.

3. The majority of students at Camas Elementary School who are minorities who lived in poverty, should receive special language assistance to compensate for cultural variations and communication styles.

4. School and district personnel seeking information related to the impact of using single

versus multiple evaluators to test students DIBELS scores may wish to utilize the information provided in this study or, conduct further study more suited to their unique needs.

REFERENCES

- Bransford, John D., Brown, Ann L., Cocking , Rodney R., Donovan, M. Suzanne, Pellegrino, James, W. (2000). How people learn, brain, mind, experience, and school. Washington, D.C.: National Academy Press.
- ED.gov. (2006, October 13). Program at a Glance, Reading First. Retrieved November 19, 2006, from the World Wide Web: <http://www.ed.gov/print/programs/readingfirst/index.html>
- Editors of Wikipedia, The Free Encyclopedia. (2006). Abraham Maslow. *Wikipedia, The Free Encyclopedia*. Retrieved November 19, 2006, from Wikipedia, The Free Encyclopedia on the World Wide Web: http://en.wikipedia.org/wiki/Abraham_Maslow.
- Florida Center for Reading Research (2006). DIBELS Dynamic Indicators of Basic Early Literacy Skills a parents guide. The New Department of Education.
- Gay, L.R., Mills, Geoffrey E., Airasian, Peter (2006). Educational research competencies for analysis and applications (8th Ed.). Upper Saddle River, N.J.: Pearson Education, Inc.
- Good, R.H., & Kaminski, R.A.(Eds.).(2002). *Dynamic Indicators of Basic Early Literacy Skills* (6th ed.). Eugene, OR. Institute for the Department of Educational Achievement. Available: <http://dibels.uoregon.edu/>.

- Goodman, Ken. (2006). The DIBELing of little children. District Administration, The Pulse Retrieved March 18, 2007 from the World Wide Web: <http://www.districtadministration.com/pulse/commentpost.aspx>
- Gorski, Paul C. (2005). Savage unrealities: uncovering Classism in Ruby Payne's framework. Retrieved March 18, 2007 form the World Wide Web: <http://www.EdChange.org>
- National Reading Panel (2000). Teaching Children to read: an evidence-based assessment of the scientific research literature on reading and its implications for reading instruction (Report of the Subgroups). Washington D.C.: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health and the National Institute of Child Health and Human Development.
- No Child Left Behind Act of 2001, Pub.L.No.107-110,115 Stat. 1425 (2002).
- Payne, R.K (2001). A Framework for Understanding Poverty. Highlands, TX: aha! Process, Inc.
- Periodical FairTest Examiner (October 2006) DIBELS: Pedagogy of the absurd hurts children. FairTest Examiner [Electronic Version], 20(3),ISSN#0898-2511.
- Raborn, James (2002). Challenging schools' expectations of native American students. The National Research Center on the Gifted and Talented, Third Article, Fall 2002.

Research Watch (2001). The effects of school poverty concentration in Wake County Public School System. Evaluation and Research Department.

Sellers, Nancy. (2004). Nancy Sellers January 2004 Interview with Dr. Donna Beegle: Communicating with children from poverty. Communication Across Barriers, "Audio Journal", January 2004.

Washington State Report Card, reportcard.ospi.k12.wa.us

