

Effects of Dual Language

A Special Project

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FACULTY APPROVAL

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ABSTRACT

The research compared the Dibels/Idels Oral Reading Fluency Scores in two dual language first grade classrooms against two non-dual language first grade classrooms. The researcher wanted to see if the dual language program was making a significant difference in reading scores. No significant difference was found between the classrooms. However, the dual language program was not behind their non-dual language counterparts in the first grade.

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TABLE OF CONTENTS

	Page
FACULTY APPROVAL.....	i
ABSTRACT.....	ii
PERMISSION TO STORE.....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	viii
CHAPTER 1	
Introduction.....	1
Background for the Project.....	1
Statement of the Problem.....	2
Purpose of the Project.....	3
Delimitations.....	4
Assumptions.....	4
Hypothesis.....	5

Significance of the Project.....	6
Procedure.....	6
Definition of Terms.....	7
Acronyms.....	9

CHAPTER 2

Review of Selected Literature.....	10
Introduction.....	10
Dual language.....	10
Affective filter.....	14
Second Language Acquisition Theory.....	18
Summary.....	21

CHAPTER 3

Methodology and Treatment of Data.....	24
Introduction.....	24
Methodology.....	27

Participants.....	28
Instruments.....	30
Design.....	31
Procedure.....	31
Treatment of Data.....	33
Summary.....	33

CHAPTER 4

Analysis of the Data.....	34
Introduction.....	34
Description of the Environment.....	34
Hypothesis.....	35
Null Hypothesis.....	36
Table 1 Baseline Comparison.....	37
Table 2 ORF significant t-test.....	38
Table 3 Data table for baseline.....	39

Table 4 Data Table for ORF test.....	40
Results of the Study.....	41
Findings.....	42
Discussion.....	42
Summary.....	43
CHAPTER 5	
Summary, Conclusions and Recommendations.....	44
Summary.....	44
Conclusions.....	45
Recommendations.....	46
REFERENCES.....	47
APPENDICES.....	50

LIST OF TABLES

Table 1: Baseline Comparison t-test.....37

Table 2: May ORF significance t-test.....38

Table 3: Data Table for Baseline t-test.....39

Table 4: Data Table for May ORF test.....40

CHAPTER 1

Introduction

Background for the Project

The achievement gap has been a focus of concern for several years and has corrupted the intent of public education. Horace Mann, (1796-1859); a great advocate for public education said:

Education . . . beyond all other devices of human origin, is a great equalizer of conditions of men--the balance wheel of the social machinery . . . It does better than to disarm the poor of their hostility toward the rich; it prevents being poor. (Horace Mann, Quotes, 2009)

The intent of public education was to be the hope of the people, a way to better oneself, in fact, a divine right of the people. President Obama while president-elect, said,

Our public education system is the key to opportunity for millions of children and families. It needs to be the best in the world. Of particular concern is the

growing achievement gap between middle and low-income students, which has continued to expand despite some overall national achievement gains. (Campaign website, May 2, 2004)

The dual language program was utilized to try and narrow those gaps. Exactly what affect it had on the children was the question of this study.

Statement of the Problem

There has always been a wide gap between test results of students of different races since the inception of data gathering. But historically, the differences weren't seen as profound. Only when social injustices were addressed through social unrest during Martin Luther King's time and thereafter did notice get brought to the achievement gap between minority children and their white counterparts. In recent years this has become even more troubling as population trends have changed. The Latino population was growing and continued to lag behind their white counterparts in achieving the American dream. According to the Yakima census for Yakima County, the county of this

study, in 2008 the Hispanic population was 41.4%
(QuickFacts, US Census, 2008)

In 2002, Latinos made up 17 percent of the K-12 student population, and it is predicted that they will comprise 25 percent of the student population by 2025. More than four in 10 Latino students are English language learners and 45 percent of Latino students attend schools in high-poverty areas. (AFT Teachers, 2004 p.1)

Purpose of the Project

The purpose of this project was to look at the oral reading results achieved by first grade children in a dual language program and compare them with the first grade non-dual language children in the mainstream program. The researcher wanted to know if there was a difference between the dual language classrooms and the non-dual language classrooms.

Delimitations

The site used for the project was the first grade classrooms at McClure Elementary School in the Yakima Valley. The school had a strand of dual language and a strand of Content English as a Second Language, hereafter referred to as ESL Content. A strand signified a portion of the classes. There were four teachers. Two teachers were assigned as dual language and two teachers assigned as non-dual language, content ESL teachers. Respectively, the dual language teachers had 23 and 24 students in each classroom. The non-dual language teachers had 17 and 19 students in their classrooms. The project went throughout the 2009-2010 school year.

Assumptions

At the conception of this project there were assumptions made about the circumstances that were the foundation of the project. First and foremost, the teachers involved were all appropriately trained and had appropriate materials to use in delivering the instruction to all participants. At the beginning it was assumed that

the treatment and the control group entered the first grade at approximately the same level, considering that they had both finished kindergarten in the same school. However, according to the t-test that was performed using the Dibels/Idels, Nonsense Word Fluency scores, the assumption was found to be wrong.

Hypothesis or Research Question

Did the dual language program raise scores in the Dynamic Indicators of Basic Early Literacy Skills assessment, Oral Reading Fluency scores (Dibels/Idels) of the children in the dual language classrooms? Idels was the Spanish form of the Dibels. Was there a significant difference between those students that had the dual language program and those that did not?

Null Hypothesis

There was no significance between the dual language classes and those in ESL Content. Significance was determined for $P > .05$, $.01$, and $.001$.

Significance of the Project

There has always been a significant population of Hispanic students throughout the Yakima Valley due to the abundance of agricultural work. According to Kids Count for Yakima County, in "2006-2007 there were 63% Hispanics who graduated on time compared to the 75% White and 85% Asian counterparts" (Kids Count, 2007). Those children graduating ensured their economic input into our society. It could also be seen as becoming a positive member of society. Conversely, those children not graduating affected our society through crime rates, dependence on publicly paid medical and other services and a lower standard of health care and living.

Procedure

The study used the quasi-experimental method by comparing students' oral reading fluency scores of Dynamic Indicators of Basic Early Literacy Skills (DIBELS) from those children and teachers described under Delimitations. They were tested in the fall and in the spring. Inherently, as with any experimental research, they were tested to assure

that these children were all demographically equal starting the year in first grade. These were children that completed the dual language kindergarten program. They must all have been kindergarten age to enter kindergarten, which in this state was five years old by August 31st. That meant that entering first graders were usually five and turned six during first grade.

Definitions of Terms

achievement gap. The significant difference in academic standing and educational success between the racial groups.

Benchmark. The level that Dibels/Idels has set for proficiency in each test area.

dual language. Synonymous with two-way bilingual immersion.

fifty-fifty, one-way developmental bilingual education. Two languages used to teach one language group of students with a 50% of the targeted language and 50% of their primary language throughout the day.

ninety-ten, one-way developmental bilingual education.

Two languages used to teach one language group of students with 90% of the targeted language and 10% of their primary language.

fifty-fifty, transitional bilingual education.

Students taught 50% in the native language and 50% in the second language usually until about 5th grade, the goal here was to transition them into the English mainstream.

ninety-ten, transitional bilingual education. Students

taught 90% in the native language and 10% in the second language usually until about 5th grade, the goal here was to transition them into the English mainstream.

fifty-fifty, two-way bilingual immersion. A program

where two languages were being taught equally 50% of the time during the day. Usually this was maintained throughout the grade levels.

ninety-ten, two-way bilingual immersion. A program

where two languages were taught, one for 90% of the day, the other language for 10% of the day. Usually this was used during the kindergarten and first grades and

percentages were decreased and increased in succeeding grade levels.

Realia. Real or representational objects used to demonstrate themselves, i.e., a real or a plastic apple to show an apple

Statpak. A computer software program to calculate the statistical equations.

Acronyms

BICS. Basic Interpersonal Communication Skills

CALPS. Cognitive Academic Language Proficiency Skills

DIBELS. Dynamic Indicators of Basic Early Literacy Skills

IDELS. Indicadores Dinámicos del Éxito en la Lectura

ESL. English as a Second Language

LM. Language Minority

NCE. Normal Curve Equivalent

CHAPTER 2

Review of Selected Literature

Introduction

The dual language program was started at McClure Elementary School in 2004. Three areas that were looked at to come to this decision were Dual Language, The Affective Filter, and the Second Language Acquisition Theory.

Dual Language

The first and only research that looked at bilingual education programs in a longitudinal study was performed by Wayne P. Thomas and Virginia P. Collier, published in 2002. They published; *A National Study of School Effectiveness for Language Minority Students' Long-Term Academic Achievement*. The results were significant and had huge implications for programs working with children of limited English, therefore, impacting the achievement gap. Because this was a longitudinal study it showed results beyond the customary length of normal research of three to five years. The research looked at one-way and two-way dual language

programs because "A goal of one-way and two-way bilingual education is to graduate students who are fully academically proficient in both languages of instruction, to prepare these students for the workplace of the 21st century" (Thomas and Collier, 2002, p.10).

There were several programs to look at according to Thomas and Collier:

The analyses focused on student outcomes from eight major different program types for LM (language minority) student, 90-10 two-way bilingual immersion (or dual language), 50-50 two-way bilingual immersion, 90-10 one-way developmental bilingual education, 50-50 one-way developmental bilingual education, 90-10 transitional bilingual education, 50-50 transitional bilingual education, English as a Second Language (ESL) taught through academic content, and the English mainstream. (Thomas and Collier, 2002, p.8)

In looking at all the programs the findings were significant as they concluded that:

English language learners immersed in the English mainstream because their parents refused bilingual/ESL services showed large decreases in reading and math achievement by Grade 5, equivalent to almost $\frac{3}{4}$ of a standard deviation (15 NCEs), when compared to students who received bilingual/ESL services. The largest number of dropouts came from this group, and those remaining finished 11th grade at the 25th NCE (12th percentile) on the standardized reading test. (Thomas and Collier, 2002, pg.8)

This was significant because in trying to narrow the achievement gap the children had to have been in school, in the first place, and those who hadn't received bilingual/ESL services were the largest group of dropouts. There was a great difference between those children who received instruction in their native language, as opposed, to those children who received instruction with the mainstream population, without access to their language. Obviously, children needed to be taught in their native language.

In reading achievement across the curriculum, native-Spanish speakers outperformed native English speakers when tested in their native language, for Grades 1-8, regardless of the type of bilingual program Spanish-speaking students received. Native-Spanish speakers remained significantly above grade level at every grade except sixth grade (at the 49th NCE), reaching the 64th NCE (74th percentile) in 8th grade. (Thomas and Collier, 2002, pg. 10)

Children have experienced their first five years of their lives in their primary language. They came to school with the basics, although, it was in their home language. This was why the dual language program was considered an additive model. It was thought of as an additive model because it added to what the children already came to school with. It was not considered a subtractive model as it was done in the mainstream English classes. It was considered a subtractive model in the mainstream English classes because it took away the first five years of a child's language experience in their native language. That's probably why "The strongest predictor of L2 student achievement is amount of formal L1 schooling. The more L1

grade-level schooling, the higher L2 achievement" (Thomas and Collier, 2002, p.314).

Affective Filter

Of course having considered Stephen Krashen's input hypothesis and affective filter hypothesis into the mix it added another dimension to the strength of the dual language program. Children that have been taught in their native language have reduced levels of anxiety and this makes learning much easier. However, in all cases, "Comprehensible input is language (either written or heard) that is understood by the second language learner" (Escamilla, Kathy; Grassi, Elizabeth, p.6, 2000. The input had to have visuals, realia, gestures, quick draws, use of cognates, repetition, hands on activities, and translation; when necessary for the intended information to be accepted as learned information for the student. However, the question of anxiety and the role it played in being able to filter in or filter out the intended information remained to be seen. The best available information could have been delivered to students, but if there had been any fear,

anxiety or any form of discomfort the work would have been wasted. The student would not be able to focus their attention to the world of new information. This was addressed by Krashen through the Affective Filter hypothesis:

The Affective Filter hypothesis, embodies Krashen's view that a number of 'affective variables' play a facilitative, but non-causal, role in second language acquisition. These variables include: motivation, self-confidence, and anxiety. Krashen claims that learners with high motivation, self-confidence, a good self-image, and a low level of anxiety are better equipped for success in second language acquisition. Low motivation, low self-esteem, and debilitating anxiety can combine to 'raise' the affective filter and form a 'mental block' that prevents comprehensible input from being used for acquisition. In other words, when the filter is 'up' it impedes language acquisition. On the other hand, positive affect is necessary, but not sufficient on its own, for acquisition to take place. (Schutz,Ricardo, 2007, p.3)

The dual language program was most effective in the 90-10 format possibly because of the 90% usage of Spanish. The Spanish speaking population would naturally feel more comfortable listening and comprehending the instruction. The English population would always have the English surrounding their everyday existence through their home and community interactions, automatically reducing the affective filter for them. Regardless of the program used in the dual language program there was a greater acceptance component of the Spanish language. The usage of the language implied its importance or respect for the language. The comprehensible input would be effective because there would be very little to nothing impeding it's acceptance within the learner. Of course, this still did not exclude those home environment factors of poverty, hunger, abuse, or other social factors. But given these factors, school time available and access to the child; using the best strategies was profound.

Considering all the possible factors involved in a child's life as listed above and the possible lack of others listed below; vocabulary enrichment in the home,

print availability, financial resources for in-person experiences to the museum, ocean, zoo, etc., assistance in homework and conceptual refinement, the expectation might be to not expect much academically from these children. That may have been a big portion of the achievement gap. The teacher's perception of inability led to a lack of development in teaching higher order thinking skills and academic vocabulary. This in turn thwarted the student's potential for educational advancement as the advancing grade levels would require more academic vocabulary and analytical, organizing, higher thinking skills that were not taught initially. Many researchers, such as Tharp have spoken to this as:

At-risk students, particularly those of limited Standard English proficiency, are often forgiven any academic challenges, on the assumption that they are of limited ability or they are forgiven any genuine assessment of progress, because the assessment tools don't fit. (Tharp, 1997, p.14)

Second Language Acquisition Theory

However, Cummings' Second Language Acquisition Theory clearly indicated that a child should be conversant in both Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency Skills (CALPS) to be a successful student. Cummins explained it this way:

Cummins (1979) discusses two forms of language developed in the acquisition process: Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP). BICS is the first type of language a student acquires and is often referred to as "playground vocabulary" or survival vocabulary. (Escamilla, Kathy.; Grassi, Elizabeth, 2000, p.8)

Cognitive Academic Language Proficiency was the language tied to each subject area, for example, in science the words, molecule, atom, chemicals; in math the words algorithm, equation, addends; or as with social studies the words geography, constitution, and economy. This was the type of CALPS vocabulary that would assist a student in

furthering their educational career. The academic vocabulary needed to comprehend and easily manipulate in higher level classes bereft to them by the lack of expectations in earlier classes; sealing the coffin of higher learning and eventually a higher standard of living. The value of academic vocabulary seemed to be undisputed as pointed out here:

Therefore, unless specifically instructed in the academic vocabulary necessary to understand the lesson, second language students are prone to a low proficiency in this cognitive academic language, which can lead to academic failure. To ensure the success of second language students, it is important for content area teachers to directly instruct second language students (using comprehensible input strategies) in the academic vocabulary and language patterns necessary to comprehend the content area lesson. (Escamilla, Kathy.; Grassi, Elizabeth,2000, p.8)

Cummins took an in depth look at the relationship between the primary language and the learning of a second one and noted:

There was considerable evidence of interdependence of literacy-related or academic skills across languages (see Cummins 1991 for a review) such that the better developed children's L1 conceptual foundation, the more likely they were to develop similarly high levels of conceptual abilities in their L2. The moderate to strong correlation between academic skills in L1 and L2 suggested that L1 and L2 abilities were manifestations of a common underlying proficiency. (Cummins,1991, p.95)

The dual language program taught reading and writing in the student's L1 in kindergarten and first grade. In the primary grades the emphasis was on the primary language of the home, where the student heard and connected their learning to the spoken word around them. In third grade the student's reading and writing minutes were then divided half in English and half in Spanish reading. Again, the L1

was used but the L2 was introduced at third grade level to teach reading and writing. The general consensus was that reading in either language is still reading, as Cummins addressed here:

The implication of these data was that bilingual programs that strongly promote minority students' L1 literacy skills are viable means to promote academic development in English. The positive results of programs that continue to promote literacy in L1 throughout elementary school could be attributed to the combined effects of reinforcing students' cultural identity and their conceptual growth as well as to the greater likelihood of parental involvement in such programs. (Cummins, 1991, p.95)

Summary

The Thomas and Collier research was an illuminating research that followed students further than fifth grade. The research looked at all the programs that were used to teach Spanish speaking children. Thomas and Collier's research was clear; children who were taught only in

English have higher drop out rates, lower scores and those children who were taught in their native language achieved higher academic results, succinctly put as "The strongest predictor of L2 student achievement is amount of formal L1 schooling. The more L1 grade-level schooling, the higher L2 achievement" (Thomas and Collier, 2002, p.314). The case for a dual language program was presented in the research.

Krashen's affective filter was reduced in the case of dual language as instruction was provided in the native language of the learner. It surrounded the student with the language of home, of love, of family that naturally lowers the filter. The research in Thomas and Collier makes it evident as well when the children performed at lower levels and dropped out when the language was not used. The usage of the language automatically showed its importance in the educational environment, thereby, reducing the parental affective filter as well.

Cummins' research clearly showed the importance of being able to use BICS and CALP vocabulary. Moreover, it showed the importance of using the vocabulary of academia.

Cognitive Academic Language Proficiency was the language of the successful student that could continue into higher education. The dual language program provided the early input of the vocabulary because there was no need for the child to learn the basics of a second language to get to the academic language. The child could have been gifted with CALP language earlier in their own language. Cummins (2008) also spoke of transference of L1 skills to L2. It has been shown that L1 skills transferred to L2 skills. Because Spanish and English were similar languages there was a greater transference between languages affording the student with a greater ease, more self-confidence and double the vocabulary. The dual language program provided a vehicle for those things found in the research and that was why the dual language program showed success with the children of a second language.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The two way dual language program was established in the Yakima School District in 2004. There were many major study implications that supported the Yakima School District decision to go with the dual language program. One of the major implications that guided the decision was obvious:

Enrichment 90-10 and 50-50 one-way and two-way developmental bilingual education (DBE) programs (or dual language, bilingual immersion) were the only programs we have found to date that assist students to fully reach the 50th percentile in both L1 and L2 in all subjects and to maintain that level of high achievement, or reach even higher levels through the end of schooling. The fewest dropouts come from these programs. (Thomas and Collier, 2002, p.13)

But there were many more implications that developed through the Thomas and Collier longitudinal study. It was the only study that followed students throughout their elementary, middle and high school careers. We know that: "The strongest predictor of L2 student achievement is amount of formal L1 schooling. The more L1 grade-level schooling, the higher L2 achievement" (Thomas and Collier, 2002, p.13). L1 was the primary language and L2 was the second language or the language that was targeted for learning. Therefore, our mission in the dual language program was to provide the strongest best Spanish program possible for the predominantly Spanish speaker. The Yakima School District attempted to do the right thing with the given information and started the dual language program. Before its initiation teachers were sent to Texas to see the dual language program in practice. Teachers were trained in the dual language program when they came back. Many financial resources were spent to provide training, on-site observations, and materials to start the program. The information was clear and the response, according to the research was right on the money. One

strand of dual language was implemented in the Yakima School District. This strand was at McClure Elementary School where the results were taken from. The researcher wanted to know if the dual language made a significant difference in DIBELS/Idel scores in comparison with the non-dual language children. At this elementary school the 50-50 program in Spanish and English was in its 6th year, 2009-2010. The Yakima School District like all other educational institutions was trying to diminish the achievement gap.

The two way dual language program, according to the research by Thomas and Collier attempted to address different areas that significantly make learning much easier for the second language learner, as noted below:

An enrichment bilingual/ESL program must meet students' developmental needs: linguistic (L1-L2), academic, cognitive, emotional, social, physical. Schools need to create a natural learning environment in school, with lots of natural, rich oral and written language used by students and teachers (L1 and L2 used

in separate instructional contexts, not using translation); meaningful, 'real world' problem-solving; all students working together; media-rich learning (video, computers, print); challenging thematic units that get and hold students' interest; and using students' bilingual-bicultural knowledge to bridge to new knowledge across the curriculum."

(Thomas and Collier, 2002, p.14)

Methodology

The researcher used a quasi-experimental method by looking at the Dynamic Indicators of Basic Early Literacy Skills, hereafter known as Dibels, or the Idels, the Spanish version of Dibels, from the first grade children who had a dual language program and those who didn't. They were tested in the fall, winter and in the spring. However, the spring Oral Reading Fluency test results were used to compare the experimental group and the control group. These were children who completed the dual language kindergarten program. They had to be kindergarten age to enter kindergarten, which in this state was five (5) years

old by August 31st. That means that entering first graders were five and/or turning six. The researcher also performed a t-test to get a baseline view at the entrance of the first grade. The Nonsense Word Fluency scores taken in September of 2009 were used to compare the two groups. This had to be done because Oral Reading Fluency was not measured in the September Dibels/Idels testing. The Nonsense Word Fluency test results showed that the Dual language group, the treatment group, X, had higher scores with a mean of $X = 70.39$. Whereas, the Non-dual language group, the control group, Y, had significantly lower scores with a mean of $Y = 34.13$. The t-score derived from the t-test was 4.39 with 74 df. Obviously, these scores showed that the incoming dual language group started out with higher scores, therefore, higher potential of meeting the higher expectations of a dual language program.

Participants

There were 23 and 24 first graders, respectively, in the Dual language Classrooms. There were fewer first grade children in the Non-dual language classrooms, with 19 and

17, respectively, in the Non-dual language classrooms. In the Dual language classrooms there were a total of 26 males and 19 females. In the Non-dual language classrooms there were a total of 18 males and 18 females. There was a varied description of children in these two groups. There were two children of teacher parents, children of agricultural workers, to name two groups of children in the classroom. There were monolingual English and monolingual Spanish children. But because they had been in the kindergarten class this meant that they had been exposed to some Spanish and some English, as well. Because of the nature of Dual language program being a program with the instruction of two languages, the parents of these children usually had a greater value on education. Most of these children had a majority of parents that encouraged homework and reading to their children. However, the population at McClure Elementary has been diverse with a high number of free and reduced lunches, which was reported to the public as:

At McClure, "Student Demographics Enrollment October 2008, count 618. Gender (October 2008) Male 49.0%, Female 51.0%, Ethnicity (October 2008) American Indian/Alaskan

Native 3.4%, Asian 1.1%, Black 3.9%, Hispanic 60.0%, White 31.6%, Special Programs Free or Reduced-Price Meals (May 2009) 79.7%, Special Education (May 2009) 20.0%, Transitional Bilingual (May 2009) 24.4%, Migrant (May 2008) 15.6% Other Information (more info) Unexcused Absence Rate (2008-09) 2.4%". (OSPI, ReportCard,2009)

Instruments

The Dynamic Indicators of Basic English Literacy Skills and its Spanish version, *Indicadores Dinámicos del Éxito en la Lectura*, a standardized test, was used to measure their growth. They were administered by para-professionals and teachers trained specifically to give this test. These tests were administered in the fall, winter and spring each year. Oral reading fluency was the goal. In the spring, children had to read 40 words or more per minute to meet benchmark. The oral reading fluency section scores administered during the spring were used for the question. This was the test that the Yakima School District chose for reporting results to the public.

Design

The DIBELS test was administered fall, winter and spring. The researcher used the fall Nonsense Word Fluency test results to determine comparability in children being studied. However, this showed a great disparity in classrooms. The Dual language classroom scored a higher mean of $X = 70.39$. Whereas, the Non-dual language group, had significantly lower scores with a mean of $Y = 34.13$. The researcher took the spring/May Oral Reading Fluency test results of the experimental group and compared them to the control group to look for significance.

Procedure

The school year started up as the teachers normally started their dual and non-dual language classrooms. The DIBELS/IDELS tests were administered around the end of September, beginning of October (fall). A meeting took place in the fall to speak to the principal regarding the study. The principal was notified of the study and an official letter was given to him. The results were then tabulated and given to the teachers in the fall to help

place the child in the appropriate reading groups and to influence the teaching strategies and objectives for each child. Nonsense Word Fluency results were used to compare the two groups for a baseline reading in the fall. The instructional year continued with Houghton Mifflin Lectura for the Spanish readers and The Read Well Program for the English readers. A second dose intervention was given to the children that scored below the benchmark level for 30 minutes, almost on a daily basis. Science was instructed in Spanish to the Dual language classes, whereas, in the Non-dual language classes the science was taught in English. All the math classes were taught only in English. The DIBELS/IDELS tests were then administered again in the winter and spring. They were tabulated, recorded and dispersed to the teachers. It was the Spring/May Oral Reading Fluency results which were used for comparison to the non-dual language children. The Statpak was used to find the T score to see if there was a significant correlation between dual language and higher DIBELS results.

Treatment of the Data

The Dibbles/Idels scores were inputted into the Statpak with a resulting t-value of 1.79 with df of 75. The Degrees of Freedom table listed the lesser of the df to be 60. The researcher used 60 Degrees of Freedom as it was the lesser of the two, between 60 and 120. The results were compared to see if there had been a statistical significance to accept or not accept the hypothesis.

Summary

Classes at McClure Elementary for 2009-2010 started as usual. There were two dual language classrooms used as the experimental group and two non-dual language classrooms used as the control group. The DIBELS/IDEL testing was performed as in previous years. However, this year the results were used to compare the two models with the Statpak using the t-test to accept or reject significance.

CHAPTER 4

Analysis of the Data

Introduction

The Achievement Gap has always posed a problem for the Yakima School District, as well as other school districts with higher populations of Hispanic students. The Thomas and Collier longitudinal study showed it's efficacy in dealing with the problem of narrowing the Achievement Gap. The Yakima School District made a wise decision and implemented the Dual Language Program in an effort to remedy the problem.

Description of the Environment

There were two first grade, Dual Language classrooms. Each classroom had a mix of English and Spanish readers. The Spanish readers went to the Spanish reading class and the English readers went to their English reading classes. The English readers had a walk to read program where they attended a group at their reading level in the Read Well Program. The Spanish readers had a Houghton Mifflin

Lecture Program. All of the reading classes were held for 90 minutes. Each class received 20 minutes of writing, the Spanish readers writing in Spanish, the English readers in English. Science was taught in Spanish for both Dual language classrooms with English as a Second Language Strategies, i.e., quick draws, realia, gestures, Total Physical Response, cognates, and on occasions when needed for new vocabulary; Spanish interpretation. The specialist classes; i.e. physical education, music and library all were conducted in English. All other remaining times were conducted in the language of the day. The language of the day alternated English and Spanish so that the children were exposed to the secondary language.

Hypothesis/Research Question

Did the dual language program raise scores in the Dynamic Indicators of Basic Early Literacy Skills assessment, Oral Reading Fluency scores (Dibels/IDELS) of the children in the dual language classrooms? Was there a significant difference between those students that had the dual language program and those that didn't?

Null Hypothesis

There was no significance between the children who had dual language classes and those that did not. Significance was determined for $P > .05$, $.01$, and $.001$.

Table 1

T Test for Independent Samples

Data Table of Nonsense Word Fluency Scores (NWF)

Baseline t-test September 2009

Statistic	Values
No. of Scores in Group X	44
Sum of Scores in X	3097.0
Mean of X	70.39
Sum of Squared Scores in Group X	296087.0
S.S. of Group X	78100.43
No. of Scores in Group Y	32
Sum of Scores in Group Y	1092.0
Mean of Group Y	34.13
Sum of Squared Scores in Group Y	52816.0
S.S. of Group Y	15551.50
t-Value	4.39
Degrees of Freedom	74

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$t = \frac{70.39 - 34.13}{\sqrt{\left(\frac{78100.43 + 15551.50}{44 + 32 - 2}\right)\left(\frac{1}{44} + \frac{1}{32}\right)}}$$

t = 4.39

Table 2

Data Table of Oral Reading Fluency Scores (ORF) May t-test 2009

Statistic	Values
No. of Scores in Group X	44
Sum of Scores in X	2999.00
Mean of X	68.16
Sum of Squared Scores in Group X	250889.00
S.S. of Group X	46479.89
No. of Scores in Group Y	33
Sum of Scores in Group Y	1793.00
Mean of Group Y	54.33
Sum of Squared Scores in Group Y	135677.00
S.S. of Group Y	38257.33
t-Value	1.79
Degrees of Freedom	75

Probability		
.05	.01	.001
<u>1.79</u> 2.000	<u>1.79</u> 2.660	<u>1.79</u> 3.460

Df 75/60

Because the numbers are above the t-value this supports the null hypothesis and shows that there is no significant difference in the treatment group.

Table 3

Data Table of Nonsense Word Fluency Scores (NWF) Baseline t-test September 2009

Experimental		Control	
Group Dual (D)	Score	Group Non-Dual (ND)	Score
D00	68	ND00	5
D01	26	ND01	19
D02	21	ND02	39
.	.	.	.
.	.	.	.
.	.	.	.
D41	26	ND29	30
D42	55	ND30	18
D43	25	ND31	17

Please see Appendices p. 50 for full list of scores.

This comparison showed the dual language classroom came in much higher than the non-dual language classroom.

Table 4

<u>Data Table of Oral Reading Fluency Scores (NWF)</u>		<u>May 2010</u>	
Experimental		Control	
<u>Group Dual (D)</u>	<u>Score</u>	<u>Group Non-Dual (ND)</u>	<u>Score</u>
D00	50	ND00	36
D01	21	ND01	37
D02	46	ND02	18
.	.	.	.
.	.	.	.
.	.	.	.
D41	63	ND30	8
D42	72	ND31	8
D43	27	ND32	77

Please see Appendices p. 52 for full list of scores.

Results of the Study

DIBELS scores were compared in September to see if the children were starting at first grade at an equal level. However, after comparing the group The Nonsense Word Fluency scores taken in September of 2009 were used to compare the two groups. This was done due to the fact that Oral Reading Fluency was not measured in the September Dibels testing. The Nonsense Word Fluency test results showed that the Dual language group, the treatment group, X, had higher scores with a mean of $X = 70.39$. Whereas, the Non-dual language group, the control group, Y, had significantly lower scores with a mean of $Y = 34.13$. The t-score derived from the t-test was 4.39 with 74 df. Obviously, these scores showed that the incoming dual language group started out with higher scores, therefore, higher potential of meeting the higher expectations of a dual language program.

Findings

The findings show that the null hypothesis was accepted. Therefore, the hypothesis had to be rejected.

Discussion

This actually proved what Thomas and Collier said in the first place, "Bilingually schooled students outperform comparable monolingually schooled students in academic achievement in all subjects, after 4-7 years of dual language schooling." (Thomas and Collier, 2002, p.314) This was only first grade. The dual language program in its primary grades functioned to prepare the student for learning in the upper grades. There was no significant difference in the students. At this grade level they looked equal. This showed that the students were keeping up with their non-dual language counterparts. Reading was the greatest indicator of success in the third grade and above because most of the learning in those grade levels came from the student's own reading. The children who could read with comprehension and automaticity were able to flourish.

Summary

The dual language program was in place to assist the ELL in achieving academic success at McClure Elementary School. The two dual language classrooms and two non-dual language classrooms were instructed with the best ESL strategies that were best teaching practices. The Dibels/Idels testing took place as customary in the school and interventions were given where needed. The data were collected and inputted through the Statpak with the outcome being that there was no significant difference between the dual language participants and the non-dual language participants.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

The achievement gap and the success of all children is of uppermost importance in all educators; teachers, administrators, school districts, parents, business community, and government officials. The information that this researcher received was that the dual language program was the program that could help in achieving success for all the children while providing a secondary language to help in future job endeavors. This information came through by the research by Thomas and Collier. The researcher wanted to bring attention to this program and test the efficacy of its intention.

Summary

This look at the dual language program and all programs that investigate the delivery of instruction to the children who historically have fallen behind in the achievement gap, remains as critical for the well-being of

the nation and its members. The achievement gap has been and still is a thorn in the education system. While it is painful, it drives us to look and look again to find what helps the educational system work better to benefit those who it is intended to help. Thomas and Collier have given us a tome of information. It is there for us to look, accept, or reject. However, studying something, implementing something does not happen overnight or even in a few years. It takes time.

Conclusions

In first grade the dual language and non-dual language children seem to be about even in their standing. The dual language program seems not to make a significant difference at this grade level. However, they are not behind their non-dual language counterparts. This is the second year of dual language instruction for these students. The dual language children this year seemed to be better prepared in entering school. It might be that the dual language parents have a higher value on education and have prepared their children for school. The non-dual language children,

although, came in with lower scores, caught up to the dual language children showing no significant difference in the classrooms or program. There were about 4-5 children less in the non-dual language classrooms, giving them a slight edge in minutes available for each student. These are variables that were outside of the researcher's control.

Recommendations

The author would like to see more comparison data on dual language and non-dual language classrooms throughout the grades, with an emphasis on the upper grades. A reexamination of the dual language program and how to adapt and implement it in different school populations was one of the desired outcomes of this paper. The expectation of higher achievement for each child, regardless of the home environment, socio-economic standing, primary language, physical characteristics, past behavior or actions, should be expected of all children.

References

- Thomas , Wayne P.; Collier, Virginia P. (2002) A National Study of School Effectiveness for Language Minority Students' Long-Term Academic Achievement. Retrieved July 29th, 2009
http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/29/d4/52.pdf
- Office of the Superintendent of Public Instruction. (2008) Washington State Report Card. Retrieved Sept. 15th 2009
<http://reportcard.ospi.k12.wa.us/summary.aspx?schoolId=3171&OrgType=4&reportLevel>
- American Federation of Teachers, Policy Brief, Number 17, "Closing the Achievement Gap: Focus on Latino Students", March 2004 Retrieved September, 2, 2009
<http://www.aft.org/pubs-reports/downloads/teachers/PolBrief17.pdf>
- Cummins, Jim., The Ontario Institute for Studies in Education, "Bilingual Education and English Immersion: The Ramirez Report in Theoretical Perspective", (1992) [Electronic Version] Retrieved October 12, 2009
http://scholar.google.com/advanced_scholar_search Adobe Reader-[10.1.1.20.9706[1].pdf]
- Escamilla, Kathy.; Grassi, Elizabeth. Professional Development Resource Series, "Second Language Acquisition", BUENO Center, University of Colorado, Boulder (2000) Retrieved October, 10, 2009
<http://www.crosscultured.com/articles/articlesslaref.pdf>

Krashen, Stephen. "Second Language Acquisition and Second Language Learning", Pergamon Press Inc., 1981, internet edition Dec. 2002, Retrieved Oct. 10, 2009
[http://www.sdkrashen.com/SL Acquisition and Learning/index.html](http://www.sdkrashen.com/SL%20Acquisition%20and%20Learning/index.html)

My Quotation Book. Horace Mann quotes. Retrieved Sept.4, 2009 [http://thinkexist.com/quotation/education-beyond all other devices of human/152619.html](http://thinkexist.com/quotation/education-beyond-all-other-devices-of-human/152619.html)

On the Issues, Barack Obama on Education, Junior Senator (IL); President-Elect. Retrieved Sept. 2, 2009
[http://www.ontheissues.org/social/Barack obama Education.htm](http://www.ontheissues.org/social/Barack%20obama%20Education.htm)

Schutz, Ricardo. "Stephen Krashen's Theory of Second Language Acquisition." English Made in Brazil. Retrieved Oct. 3, 2009 <http://www.sk.com.br/sk-krash.html> Online, 2 de Julho de 2007.

Tharp, Roland G. (1994)"From At-Risk To Excellence: Research, Theory, And Principles For Practice" Center For Research On Education,Diversity & Excellence. Retrieved October 10, 2009
[http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content storage 01/0000019b/80/16/c1/42.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/16/c1/42.pdf)

Thomas, Wayne P.; Collier, Virginia P. (2002) A National Study of School Effectiveness for Language Minority Students' Long-Term Academic Achievement. Retrieved July 29th, 2009
[http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content storage 01/0000019b/80/29/d4/52.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/29/d4/52.pdf)

Yakima County QuickFacts from the US Census Bureau.
Retrieved October 6, 2009
<http://quickfacts.census.gov/qfd/states/53/53077.html>

Appendices

Appendix 1

Data Table of Nonsense Word Fluency Scores (NWF) Comparison t-test September 2009

Experimental		Control	
Group Dual (D)	Score	Group Non-Dual (ND)	Score
D00	68	ND00	5
D01	26	ND01	19
D02	21	ND02	39
D03	114	ND03	23
D04	155	ND04	3
D05	84	ND05	68
D06	128	ND06	34
D07	150	ND07	20
D08	40	ND08	19
D09	144	ND09	18
D10	58	ND10	31
D11	62	ND11	58
D12	52	ND12	94
D13	42	ND13	57
D14	77	ND14	17
D15	16	ND15	71
D16	121	ND16	19
D17	123	ND17	25
D18	139	ND18	35
D19	75	ND19	89
D20	62	ND20	25
D21	81	ND21	35
D22	26	ND22	10
D23	121	ND23	45
D24	128	ND24	18
D25	60	ND25	38
D26	90	ND26	44

Appendix 1 cont'd.

Data Table of Nonsense Word Fluency Scores (NWF) Comparison t-test September 2009

Experimental		Control	
Group Dual (D)	Score	Group Non-Dual (ND)	Score
D27	11	ND27	39
D28	102	ND28	25
D29	131	ND29	30
D30	37	ND30	18
D31	62	ND31	17
D32	30		
D33	42		
D34	49		
D35	41		
D36	23		
D37	101		
D38	50		
D39	13		
D40	36		
D41	26		
D42	55		
D43	2		

Appendix 2

Data Table of Oral Reading Fluency Scores (NWF)		May 2010	
Experimental		Control	
Group Dual (D)	Score	Group Non-Dual (ND)	Score
D00	50	ND00	36
D01	19	ND01	37
D02	38	ND02	18
D03	34	ND03	13
D04	60	ND04	72
D05	40	ND05	86
D06	43	ND06	30
D07	60	ND07	54
D08	33	ND08	47
D09	65	ND09	57
D10	45	ND10	144
D11	29	ND11	88
D12	42	ND12	86
D13	27	ND13	37
D14	28	ND14	70
D15	20	ND15	131
D16	57	ND16	67
D17	65	ND17	74
D18	51	ND18	21
D19	37	ND19	62
D20	28	ND20	51
D21	17	ND21	117
D22	118	ND22	61
D23	112	ND23	56
D24	94	ND24	60
D25	85	ND25	52
D26	18	ND26	12
D27	85	ND27	32
D28	28	ND28	17
D29	95	ND29	12
D30	20	ND30	8
D31	89	ND31	8
D32	31	ND32	77

Appendix 3 Cont'd

<u>Data Table of Oral Reading Fluency Scores (NWF)</u>		<u>May 2010</u>	
<u>Experimental</u>		<u>Control</u>	
<u>Group Dual (D)</u>	<u>Score</u>	<u>Group Non-Dual (ND)</u>	<u>Score</u>
D33	102		
D34	106		
D35	86		
D36	25		
D37	132		
D38	90		
D39	38		
D40	84		
D41	63		
D42	72		
D43	27		