## Increasing Reading Scores

Through the Dual Language Program

A Special Project
Presented to
Dr. Jack McPherson
Heritage University

```
In Partial Fulfillment
of the Requirements for the Degree of Masters of Education with an Emphasis in ESL
Lorena Voelker
Spring 2007
```


#### Abstract

The purpose of this experimental research project was to compare those oral reading fluency of students who were in a content ESL classroom with those who were enrolled in a DLP at Adams Elementary School, based on the DIBELS scores from kindergarten to the middle of second grade. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusions and recommendations were formulated.

The fundamental research question on which the study focused indicated that students who were in the DLP program scored lower on the DIBELS in kindergarten because they were being taught in their native language (Spanish). When the DLP students are taught reading in both languages in second grade, the students caught up to the Content ESL students.


## CHAPTER 1

## Introduction

Background for the Project
We believe that bilingualism and the accompanying intercultural awareness is a source of great human richness and enlightenment among nations operating in the international arena. Educators, through the quality of education that they provide, represent an important bridge to students' success in benefiting fully from the multiple languages and cultures they are experiencing (Ovando et. al., 2006, p. xx).

As emphasized in the above statement by Ovando et al., educators play a key role in helping students to enhance their interpersonal awareness through the process of language acquisition.

Recent political and policy initiatives have brought about dramatic shifts in guidelines for educating language minority children and bilingual education programs in the United States. Due to the increased population of second language learners in
the Yakima School District, the Dual Language Program (DLP) was adopted. The DLP was adopted to accommodate students who came entered elementary school speaking a language other than English (i.e. Spanish in the present study). The DLP was also used as a form of enrichment for students that could be challenged in English.

The DLP offered many instructional models that could be incorporated into any school curriculum that had a diverse student population. The 50/50 model was used for this experimental research project. The model's goal was to teach students the academic content in their first language (L1), and then to expose them to the second language (L2) by the second grade. The hope of the program was to eventually have Spanish speakers transfer what they had learned to English once they became proficient. The students started the DLP in kindergarten and are scheduled to exit the program in fifth grade.

Statement of the Problem
An effective DLP model needed to be adopted to close the literacy achievement gap between English Language Learners (ELL) students and content English as a Second Language (ESL) students. Available data has confirmed that ELL students (English Language Learners) were at an academic disadvantage when compared to students whose first language was English. As a consequence, the ELL students were being identified as at-risk for literacy failure.

Phrased as a question, the problem which represented the focus of the present study may be stated as follows: How did reading fluency scores of students who were enrolled in DLP compare with score of students enrolled in a content ESL program, as measured by the DIBELS (Dynamic Indicator of Basic Early Literacy Skills) standardized test. Purpose of the Project

The purpose of this experimental research project was to compare those oral reading fluency of students who were in a content ESL classroom with those who
were enrolled in a DLP at Adams Elementary School, based on the DIBELS scores from kindergarten to the middle of second grade. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusions and recommendations were formulated. Delimitations

The present experimental study was conducted at Adams Elementary in Yakima, Washington. A single group of students was tracked over a period of two years from $k-2^{\text {nd }}$ grade. Participants included both ESL and Dual Language Students.

The writer (Lorena Voelker)used the DIBELS assessment to measure reading skills of participating students scores from kindergarten and the middle of second grade.

All participants had been enrolled in the DLP cohort (K-2) since kindergarten. Content ESL students may not have been assessed by the same teacher as DLP students.

Assumptions
As a result of learning a second language, the Dual Language English students were exposed to the usage of a separate part of the brain. It was assumed that because of this exposure, these students would score higher. The writer also believed that Spanish speaking students would score below content ESL students because of a lack of English instruction. Based on a study conducted by Collier \& Thomas (1995), it was further assumed DLP Spanish students would eventually catch up to Content ESL students and might even surpass them.

Hypothesis
DIBELS reading assessment scores of ELLs enrolled in the DLP will improve, from K-2, when compared to ESL content students.

Null Hypothesis
There will be no significant difference in DIBELS scores of ELLs in the DLP, when compared to ESL content students. Significance was determined for $p>.05, .01, .001$.

Significance of the Project
Adams Elementary School (AES) was in the fifth year of a School Improvement Plan. School administrators at AES adopted the DLP to better serve the student population and to improve reading scores by serving the majority of the students in their own language (Spanish). The writer also wanted to know if the DLP adaptation significantly improved student reading skills.

The school principal, Mr. Mike Koulentes, believed the DLP adoption would encourage related research.

Procedure
The researcher (Lorena Voelker), observed two second grade dual language classrooms and two Content ESL classrooms. Only those participants that started with the Dual Language Program in Kindergarten were included in the study. For consistency, the researcher also used only the students enrolled in the Content ESL classroom that started Kindergarten in the Content ESL classroom.

Kindergarten DIBELS scores were used to determine the growth that each student demonstrated from Kindergarten to the end of second grade. The scores of the Content ESL students were compared to the scores of the English students in the Dual Language Program. Finally, the scores of the Content ESL Bilingual students were compared to those of the Dual Language Bilingual students.

The author used a t-test for independent samples to determine if there was a significant relationship, and to determine if the Null hypothesis was accepted or rejected. Definition of Terms

Significant terms used in the content of the present study have been defined as follows;

50/50 model. Half of the students in the classroom are English dominant and half of the students in the classroom are Spanish dominant.

Content ESL. A classroom in which the content is taught only in English.

DIBELS. A standardized test given in elementary. Dual Language. A classroom in which students are taught in two languages.

Acronyms
DIBELS. Dynamic Indicators of Basic Early Literacy Skills

DLP. Dual Language Program
ESL. English as a Second Language
ELL. English Language Learner
L1. Student's first language.
L2. Student's second language.

## CHAPTER 2

## Review of Selected Literature

Introduction
The review of literature and research summarized in Chapter 2 was organized to address:

- Understanding and Working with Students of Poverty
- Language Programs, Achievement, and Instruction
- Dual Language Education
- Summary

Data current primarily within the last 10 years were identified through an on-line computerized literature search of the Educational Resources Information Center (ERIC), the internet, and Proquest. A hand-search of selected research materials was also conducted.

Understanding and Working with Students of Poverty
Over 94 percent of the student population that attended Adams Elementary School during the year 20062007 qualified for free or reduced lunch (OSPI, 2006). Students raised in poverty tended to enter to

Kindergarten with lower vocabulary and lower letter recognition skills. Students who lived in poverty were more likely to under-achieve than their peers from middle-and high-income households, and were also at risk of not completing school (Taylor, 2005).

According to Payne (1996), students from middle class households differed from students raised in poverty. Students raised in poverty were taught at an early age a set of hidden rules that must be followed. One of the key resources for success in school and at work was an understanding of these hidden rules. Hidden rules included unspoken clues that individuals used to indicate membership in a group. As shown on Table 1, in middle class families, work and achievement tended to be the driving forces in decision-making. In wealthier families, driving forces were focused on political, social, and financial connections. In families of poverty, driving forces focused of survival, entertainment, and relationships. For example, students of poverty may have a Halloween costume that cost $\$ 30$ but an unpaid textbook bill.

Table 1.
Hidden Rules for Families of Poverty, Middle class and Weath

| Generational Poverty | Middle Class | Wealth |
| :---: | :---: | :---: |
| ```The driving forces for decision making are survival, relationships, and entertainment.``` | The driving forces for decision making are work and achievement. | The driving forces for decision making are social, financial, and political connections. |
| People are possessions. It is worse to steal someone's girlfriend than a thing. A relationship is valued over achievement. That is why you must defend your child no matter what he or she has done. Too much education is feared because the individual might leave. | Things are possessions. If material security is threatened, often the relationship is broken. | Legacies, one-of-akind objects, and pedigrees are possessions. |
| The "world" is defined in local terms. | The "world" is defined in national terms. The national news is watched; travel tends to be in the nation. | ```The "world" is defined in international terms.``` |
| Physical fighting is how conflict <br> is resolved. If you only know casual register, you do not have <br> the words to negotiate a resolution. Respect is accorded to those who can physically defend themselves. | Fighting is done verbally. <br> Physical fighting is viewed with distaste. | ```Fighting is done through social inclusion or exclusion and through lawyers.``` |

Source: From (Understanding and Working with Students and Adults from Poverty), by Ruby Payne, 1996, Instructional Leader Journal Volume IX, No. 2, March 1996, a publication of the Texas Elementary Principals and Supervisors Association.

According to Taylor (2005), for students from generational poverty to learn, a significant relationship must be present. Rather than talk to students from generational poverty about the future and going to college, which has little motivation, the conversation needed to be about how the learning impacted relationships.

Language Programs, Achievement, and Instruction
A study published by Reese (2004) in the Elementary School Journal, focused on the variation in Reading Achievement among Spanish-Speaking children in different language programs (i.e. Spanish and English) According to this authority, any differences in the reading performance on the Woodcock Language Proficiency Test between Spanish and English learners was based on the instructional program students were enrolled in.

According to Goldenberg (2004) there were some substantial differences across communities in which Latino families resided. There were also some
differences in the availability of print resources in lower income and middle income Latino neighborhoods.

In a study conducted by Reese (2006), 14 schools with at least 40\% Latino enrollment and at least 30\% Spanish-speaking ELL enrollment in grades $K$ and 1 were studied. Four classrooms observed then were ranked by order of academic achievement. Parents were surveyed to determined expectations regarding their children's academic attainment and performance. Parents that participated in the survey were interviewed in depth. Other community patrons living near the school were also surveyed to assess language heard and observed in different neighborhood settings. United States census data were also gathered to provide background demographics such as ethnic distribution, home ownership, and family size for the census tract for each school attendance area. Finally, the Woodcock Language Proficiency Battery Test was administered to 900 students in grades K-2. Reese's research confirmed end-of-year reading achievement in Spanish and English was consistent with language programs.

Specifically, students in programs that emphasized Spanish instuction in K-2 scored higher in Spanish; students in programs with all English instruction scored higher in English.

Reese expressed surprise when one of the studies revealed that students tended to advance more quickly in mastering their second language (i.e. English) because the second language was dominant. Dual Language Education

When describing Dual Language Education LindholmLeary, (2004) stated: The Dual Language Education was based on three important premises documented by research. The first premise stated that the research in the United States and many other countries clearly showed that a second language was best acquired by language minority students when their first language was firmly established (e.g., content instruction in their first language), and that a second language was best developed by language majority children through immersion in that
language (e.g., content instruction in their second language)(p.1). Lindholm-Leary's second premise contended that knowledge learned through one language paved the way for knowledge acquisition in the second language. Students who learned content (e.g., reading or math) in one language could demonstrate content knowledge in the second language once they acquired language skills to express the content.

Lindholm-Leary's third premise explained how Dual Language Education was needed by students to reach a certain level of native language proficiency to promote higher levels of second language development and bilingual proficiency. According to this authority, once students had sufficiently developed both languages, they would benefit from cognitive advantages which included: More creative thinking; greater mental flexibility; ability to think more abstractly; and superior concept formation.

Krashen (1984) concluded that to acquire a second language, children needed sufficient exposure to that
language in both formal (teacher-directed) and informal (with friends) situations. The type of exposure was as important as the amount.

Research conducted by Linholn-Leary (2004)focused on how Dual language Education (DLE) (also called TwoWay Immersion or Two-Way Bilingual Immersion) integrated language minority and language majority students for academic instruction that was presented separately through two languages. Two major variants of the DLE model existed. They were referred to as the 90/10 and the 50/50 models. The principle factor distinguishing these two program variations was the distribution of languages for instruction. The amount of time spent in each language varies across the grade levels in the 90/10, but not 50/50, design.

In the $90 / 10$ model used in kindergarten and first grades, $90 \%$ of the instructional day was devoted to content instruction in the target language (for example, Spanish or Korean) and 10\% in English. All content instruction occurred in the target language, and English time was used to develop oral language
proficiency and some pre-literacy skills. Reading instruction began in the target language (Spanish) (Linholn-Leary).

At the second and third grade levels, students received $80 \%$ of their day in the target language and 20\% in English. Students began formal English reading in third grade, but were exposed to English print and English literature as early as first grade. Students might be studying mathematics, social studies and science in the target language, and language arts in both languages. By fourth, fifth, and sixth grades, the students' instructional time was balanced between English and the target language (Spanish). Content was equally divided between two languages (LinholnLeary).

In the 50/50 model (the one used for this experimental research) students received half of their instruction in English and the other half in the target language throughout all the elementary years. Literacy instruction varied in this model. At some school sites, students learned to read first in their
primary language and then added on the target language at grade 1 or 2. At other school sites, students learned to read in both languages simultaneously (Linholn-Leary).

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

1. Students who lived in poverty were more likely to underachieve than their peers from middle and high income households.
2. Students in programs the emphasized Spanish instruction in K-2 scored higher in Spanish; students in programs with all English instruction scored higher in English.
3. A second language was best acquired by language minority students when their first language was firmly established.
4. Dual language Education integrated language minority and language majority students for academic instruction that was presented separately through two languages

## Chapter 3

Methodology and Treatment of Data

## Introduction

The purpose of this experimental research project was to compare those students oral fluency scores who were in a content ESL classroom with those who were enrolled in a dual language program at Adams Elementary School, based on the DIBELS score from kindergarten to the middle of second grade. To accomplish this purpose, a review of selected literature was selected, essential baseline data were obtain and analyzed, and related conclusions and recommendations were formulated.

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

Methodology
The researcher used an experimental research methodology in which at least one independent variable
was manipulated, other relevant variables were controlled, and the effect on one or more dependent variables was observed. A t-test for independent samples was utilized for data analysis to determine significance between the control and experimental groups. Both groups were administered a pre-test and each group received a different treatment. Both groups were post-tested at the end of the study. The pre-test was given at the kindergarten level and the post-test was administered at the $2^{\text {nd }}$ grade level. The experimental group was treated for two and a half years. The research was concluded at the $2^{\text {nd }}$ grade level in the school year of 2006-2007.

Participants
Participants involved in the study included two Dual Language and two content ESL classrooms from Adams Elementary School during the 2004-2007 school year. Students in the Dual Language program (DLP) received instruction in both English and Spanish since kindergarten. Content ESL students received all instruction in English. The majority of students in
the Dual Language program were native Spanish speakers who received reading instruction in Spanish to advance their academic knowledge in their native language. By the second grade, students in the DLP were receiving instruction in English and Spanish equally.

Instruments
The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) was used to assess student performance. The DIBELS test has been designed to measure the oral reading fluency of students. This test provides valuable feedback to school districts and teachers needed to refine instructional approaches.

Design
This experimental study utilized a two-group preand posttest to measure the extent to which students' scores in oral reading fluency showed improvement. The design involved two independent pre and post-test groups (i.e. experimental and control groups). Only the experimental group received instruction in both languages (Dual Language). For the purpose of this
study, participating students were organized into two groups as follows:

Experimental Group X: This group included 30 students that received instruction in both English and Spanish since kindergarten from Adams Elementary School. The majority of these students entered kindergarten as native Spanish speakers. These students were tested using the DIBELS assessment when they entered kindergarten and then again in the middle of second grade.

Control Group Y: This group included 32 students that received all English instruction since kindergarten from Adams Elementary School. These students were tested using the DIBELS assessment when they entered kindergarten and then again in the middle of second grade.

Procedure
The procedure employed in the study envolved in several stages. In January 2007, the researcher explained the need for the study to principal (Mr. Mike Koulentes) of Adams Elementary School, obtained
permission to undertake the project, and accessed student test data essential for the study. The researcher then undertook a review of selected literature using Proquest and Internet as primary sources. Throughout January, the researcher interviewed the school principal who described how the Dual Language Program had evolved in Adams Elementary School. Data used in the study were compiled and analyzed and conclusions and recommendations were formulated as presented in Chapter 4 and 5.

Treatment of the Data
A t-test for independent samples, used in conjunction with Windows STATPAK statistical software program that accompanied the Educational Research: Competencies for Analysis and Applications test (Gay and Airasian, 2006), allowed the researcher to compare grade-levels of oral reading fluency of experimental and control groups. Significance was determined for $p \geq$ at 0.05, 0.01, and 0.001 levels.

To test the null hypothesis, which would indicate no significant difference in instructional programs (DLP
and Content ESL), a t-test for independent samples was again performed. The following formula was used to test for significance.

$$
t=\frac{x_{1}-X_{2}}{\frac{S S_{1}+S S_{2}}{n_{1}+n_{2}-2} \frac{1}{n_{1}}+\frac{1}{n_{2}}}
$$

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

# Chapter 4 <br> Analysis of the Data 

Introduction
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 study conducted in the Yakima School District at Adams Elementary School during the 2006-2007 school year involved two groups of students. The first group consisted of Dual Language students and the second consisted of Content ESL students. Group X (i.e., experimental group, 30 students) received reading instruction in the targeted language (Spanish) for the first two years of school, and then transitioned into both English and Spanish in second grade. Group Y (i.e., control group, 32 students) received English instruction. The study sought to compare whether students who are in the Dual Language program perform
equally in the DIBELS assessment both in Kindergarten (before treatment) and then again in $2^{\text {nd }}$ grade. Hypothesis

DIBELS reading assessment scores of ELLs enrolled in the DLP will improve, from K-2, when compared to ESL content students.

Null Hypothesis
There will be no significant difference in DIBELS scores of ELLs in the DLP, when compared to ESL content students. Significance was determined for $p \geq .05, .01, .001$. Results of the Study--Tables 2 and 3

A $t$-test was calculated to determine the level of significance between control and experimental groups. Table 2 disclosed the results of the $t$-test using the kindergarten scores while Table 3 represented the distribution of $t$ with 60 degrees of freedom. Significance was determined for $p \geq$ at $0.05,0.01$, and 0.001 levels.

Table 2.
$t$-Test for Independent Samples--Kindergarten Scores
t-TEST FOR INDEPENDENT SAMPLES


As indicated in Table 2, the mean of group $X$ was 28.73, while the mean of group $Y$ was 36.94 . The degree of freedom was 60 and the $t$ value was -2.01. The values used to determine significance were published in the textbook Educational Research: Competencies and Applications (Gay \& Airasian, 2006, pg. 349).

Table 3.
Distribution of $t$ with 60 Degrees of Freedom--
Kindergarten Scores


## Findings--Kindergarten Scores

Data presented in Tables 2 and 3 were used to compare DLP students with students who received instruction in English during their kindergarten year. Results indicated that mean scores of students who received all English instruction (i.e. 36.94) were higher than the mean score for students in the DLP (i.e. 28.73). Through statistical analysis, it was determined there was a significant differences between
treatment and control groups at the level of $p>0.05$ (2.0). All other levels (0.01 and 0.001) showed no significance.

Table 4 indicated the results of the $t$-test using second grade scores while table 5 represented the distribution of $t$ with 60 degrees of freedom. Table 4.

Summary of $t$-Test for Independent Samples for $2^{\text {nd }}$ Grade


The mean of group $X$ was 72.10 , while the mean of group $Y$ was 73.47. The degree of freedom at 60 and the t value was -0.18.

Table 5.
Distribution of $t$ with 60 Degrees of Freedom for
Second Grade ScoresTRRR


Findings--Second Grade Scores
Data obtained were used to compare the DLP students with students who received instruction in English at the second grade level in the year 20062007. The results did not demonstrate a difference in the mean in students that were receiving all English instruction. Through statistical analysis, it was determined there was no significant differences
between treatment and control groups at all levels of $p>0.05(2.0), 0.01(2.660)$, and $0.001(3.460)$ levels. Summary

Chapter 4 reviewed and detailed the description of the environment, hypothesis, null hypothesis, results of the study, and major findings. Data analyzed indicated:

1. At kindergarten the hypothesis was supported at $p \geq 0.05$ level. This meant that students who entered the DLP in kindergarten were lower in the English DIBELS assessment because they were being taught in Spanish.
2. At second grade the hypothesis was not supported which meant there was no significant difference in the DIBELS assessment between the DLP students and the Content ESL students.
3. The null hypothesis was accepted regarding the second grade results (i.e. There was no significant difference in the score of students who received instruction in English as compared
to students who received their instruction in Native Spanish).
4. The fundamental research question on which the study focused indicated that students who were in the DLP program scored lower on the DIBELS in kindergarten because they were being taught in their native language (Spanish). When the DLP students are taught reading in both languages in second grade, the students caught up to the Content ESL students.

## Chapter 5

Summary, Conclusions, and Recommendations
Summary
The purpose of this experimental research project was to compare those oral reading fluency of students who were in a content ESL classroom with those who were enrolled in a DLP at Adams Elementary School, based on the DIBELS scores from kindergarten to the middle of second grade. To accomplish this purpose, a review of selected literature was conducted, essential baseline data were obtained and analyzed, and related conclusions and recommendations were formulated. Conclusions

Based on the review of selected literature and major findings produced from the present study, the following conclusions were reached:

1. Students who lived in poverty were more likely to underachieve than their peers from middle and high income households.
2. Students in programs the emphasized Spanish instruction in K-2 scored higher in Spanish;
students in programs with all English instruction scored higher in English.
3. A second language was best acquired by language minority students when their first language was firmly established.
4. Dual language Education integrated language minority and language majority students for academic instruction that was presented separately through two languages.
5. At kindergarten the hypothesis was supported at $\mathrm{p} \geq 0.05$ level. This meant that students who entered the DLP in kindergarten were lower in the English DIBELS assessment because they were being taught in Spanish.
6. At second grade the hypothesis was not supported which meant there was no significant difference in the DIBELS assessment between the DLP students and the Content ESL students.
7. The null hypothesis was accepted regarding the second grade results (i.e. There was no significant difference in the score of students
who received instruction in English as compared to students who received their instruction in Native Spanish).
8. The fundamental research question on which the study focused indicated that students who were in the DLP program scored lower on the DIBELS in kindergarten because they were being taught in their native language (Spanish). When the DLP students were taught reading in both languages in second grade, the students caught up to the Content ESL students.

Recommendations
As a result of the conclusions cited above, the following recommendations have been suggested:

1. It is recommended that students of poverty whose native language is Spanish receive special language assistance in the form of Dual Language Instruction.
2. To enhance higher oral reading score of non English speaking students they should be taught first in their L1 and then transitioned into L2.
3. Educators responsible for teaching ELL should poses understanding and ability to practice 3 important DLP premises;
4. A second language was best acquired by language minority students when their first language was firmly established
5. Knowledge learned through one language paved the way for knowledge acquisition in the second language.
6. Students needed to reach a certain level of native language proficiency to promote higher levels of second language development and bilingual proficiency.
7. Schools/School Districts interested in DLP education may wish to utilize information contained in this study or, they may desire to undertake further research related to DLP instruction more suited to their needs.

## REFERENCES:

Kerper, Jill, Wink, Joan, \& Wink, Dawn (2001). Dualing models of dual language instruction: A critical review of the literature and program implementation guide. Bilingual Research Jounal. 25, 14-19, 27.

Krashen, Dave (1984).Pedagogical foundation for the program of dual language. Bilingual Research Jounal. 19, 3.

Lindholm-Leary, Kathryn (2004).Dual Language Education: Educational success for students of the global new economy. Bilingual Research Jounal. 48, 14.

Neuman, Richard \& Celano, Mike,(2001).Dual Language: Teaching and Learingin Two Languages. Bilingual Reseach Journal. 28, 1-4.

Payne, Ruby K (1996). Understanding and working with students and adults from poverty. Instructional Leader Journal. 2,1, 4-7.

Reese, Leslie, Goldenberg, Claude, \& Saunders, William (2006). Variations in Reading Achievement among Spanish-Speaking Children in Different Language Programs: Explanations and Confounds. The Elementary School Jourmal. 106, 7-8, 11, 15.

Ovando, Carlos J (2006). Bilingual and ESL Classrooms: Teaching in Multicultural Contexts. Fourth Edition. MrGraw Hill Companies

Taylor, Julie A (2005). Poverty and student achievement. Multicultural Education Journal. 12, 1, 3.

