

Developmental Bilingual Education in the Real World: Using Longitudinal Data to Enhance Dual Language Program Development

Margo Gottlieb and Ngoc Diep Nguyen
Illinois Resource Center and Schaumburg School District # 54

1. Context of the study

Dual language education, the use of two languages as the medium of instruction for two distinct student populations in the same classroom in order to develop bilingualism for both has become a more accepted instructional model and educational philosophy in the past two decades. Through dual language enrichment, educators are able to offer the benefits of developmental bilingualism to a wider range of students while, at the same time, enhance their academic achievement and sociocultural integration. As an educational program, dual language also has the potential of reversing the often controversial and negative status of bilingual education in this country, which to date, has been mostly transitional in nature with few sustained effects.

As dual language programs in the United States are developed, implemented and improved upon, there is a growing need to conduct studies to understand the affect of dual language education on students' language development, academic achievement and social integration. Most importantly, these studies will contribute to the growing body of research that seeks to create a solid conceptual foundation for the design of effective language education programs.

This post hoc study examines the maturational development of a dual language education program as it naturally unfolds in a Kindergarten through eighth grade school district of 15,000 students located in northwest Illinois. It follows the implementation of an 80/20 dual language education program in Spanish and English established with seed monies through two federal grants, starting in 1994. In it, we examine the linguistic and academic growth of four groups of students. Although the dual language program is comprehensive in scope with multiple goals and outcomes, the purpose of this paper is to present findings from longitudinal data sets built from quantitative measures.

The dual program in question is a program of choice in the school district and follows the 80/20 design. In a 80/20 dual language program, the target language other than English is used as a medium of instruction 80% of the time in kindergarten and English is used 20% of the time. The amount of English use is increased each year by 10% until the instructional language use reaches the equilibrium of 50/50 by 4th or 5th grade. The reason for such a design is to allow students to have opportunities to develop their Spanish proficiency more fully in a wider social context that is almost always English dominant.

During the first three years of implementation, major efforts were spent on recruitment, assessment and curriculum design, and staff development. Teamwork was at the heart of all curricular design decisions. Both dual language teachers and their general education teacher –partners were involved in the design of the curriculum, using the school district curriculum as the basis. Each summer, teachers worked as a team to review the implementation of instruction and map out the curriculum for each grade for the following year. Program improvements were made based upon new research and these reviews.

The program began with one Kindergarten class in the 1994-1995 school year at a designated elementary school. Each year, one grade level was added to the dual language strand until it was completed at 6th grade. In 2000-2001, the program was expanded to a second elementary school site, starting with one Kindergarten dual language class. In 2001, the elementary program was continued at a designated junior high school. Currently, the dual language program is operating at two elementary schools and one junior high school. Throughout the program history, the school district contracted with an independent program evaluator, OER Associates, to analyze program evaluation data. OER Associates provided us with the quantitative data analysis and technical report used for this study.

The sample is composed of 265 students; 129 use English as their first language, 134 use Spanish as their first language, and two students come from other language backgrounds. Overall the group represents a higher percent of free and reduced lunch (16.6) than the 7.4% of the school district student population. Since the program admission policy is inclusive, there are a wide range student participants, including gifted students and those with special needs.

The dual language program has four major goals; that is, to have all students achieve: 1) grade level academic performance, 2) oral proficiency in two languages, 3) biliteracy (reading and writing), and 4) cross cultural competence. These goals are aligned with Illinois academic content standards, the school district curriculum, instructional practices, and assessment measures. The dual language education program is grounded in educational theory and related research in the field of bilingual, multicultural education.

Quantitative data collection within the dual language setting began in 1996, Year 3 of the program, when participating students represented 3 cohorts, Kindergarten, grade 1, and grade 2. At the end of the three year grant period, the school district subsumed its dual language program into the overall educational program. Currently, there are a total of 265 students in the dual language program with the first cohort of students in grade 8. This paper addresses the first phase of an ongoing study in which the results of the quantitative analysis of student performance from 2nd through 6th grades are reported.

2. Theoretical bases of dual language education programs

Dual language education in the United States has its roots in the Canadian immersion programs of the early 1970's. The findings from the first studies indicated that there are clear benefits for all participating students in the areas of cultural, linguistic, and academic development.

Collier and Thomas, in their longitudinal study of hundreds of bilingual education programs in the United States, found that native Spanish speakers (NSS) in dual language education programs, over time, maintain and develop their native language, add a second language (English) to their knowledge base and are academically equal or outperform their comparison groups being schooled in Transitional Bilingual English (TBE) or English as a Second Language (ESL) programs on all measures.

Dual language education also promotes oral proficiency as well as growth in reading and language achievement in two languages for all students (Christian, 1994; Lindholm Leary, 2001). Lindholm Leary (2001) found that native Spanish speakers achieve a higher oral proficiency in the second language than their native English speaking counterparts due to the dominance of English as a preferred language both in and out of schools. The native Spanish speaking students in the same study over time also outscored their native Spanish speaking counterparts in TBE programs. In general, all students make substantial progress in their first and second language proficiency.

The achievement in second language proficiency for dual language students encompasses both oral and proficiency and a high degree of biliteracy. Dual language education contexts also foster positive self-esteem and friendships among students across linguistic and ethnic boundaries (Cazabon et al., 1993). Positive results from evaluation research conducted in Canada and the United States over the past 25 years substantiate dual language education as educational enrichment for both groups of students (Genesee, 1987; Christian, Montone, Lindholm & Carranza, 1997, Howard & Sugarman, 2001).

3. Research questions

We investigated the growth in second language proficiency and academic achievement of the two groups of students participating in dual language education, a) native Spanish speakers and b) native English speakers, in comparison with that of their counterparts, c) native Spanish speakers in transitional bilingual education and d) native English speakers in the general education program. For the purpose of this report, we asked the following questions that could be answered using multiple years of test data:

1. **Second Language (L2) Proficiency:** What has been the growth in the students' (native Spanish and native English speakers) oral and literacy development in their second language over time (from 1996-2002)?
2. **Academic Achievement**
 - A. How do native Spanish speaking (NSS) students and native English speaking (NES) students in the dual language program perform in their native language (L1), in language arts, reading, and mathematics, as compared to their respective peers in transitional bilingual and general education classes?
 - B. How do native Spanish speaking students in the dual language program perform in English (L2) in language arts, reading, and mathematics, as compared to their respective peers in transitional bilingual education classes?

4. Instrumentation, methodology, and analysis

The dual language assessment framework (see Appendix A) outlines the full complement of instrumentation used within the dual language program. It not only guides the collection of data, but also ensures that there is a balanced distribution of measures in order to capture the students' language proficiency and academic achievement. Additionally, it shows the juxtaposition of the qualitative and quantitative measures described below.

5. Qualitative measures

Although not reported in this paper, academic content at the classroom and district level data are gathered systematically throughout the academic year by teachers and are maintained in individual student portfolios. Original samples of student work in the areas of oral language and writing are interpreted with district adopted rubrics that are aligned with state standards. A qualitative informal reading inventory yields diagnostic information on students on an annual basis. Sustained professional development of staff ensures the reliability and validity of portfolio results. Each portfolio follows the students for the entire length of their participation in the program and provides a longitudinal gauge of their linguistic and academic development. The compilation of all students' portfolios, when analyzed, will provide a rich portrait of teaching and learning that occurs in the dual language classrooms as well as its results, in terms of students' growth. This analysis constitutes the next phase in this study.

6. Quantitative measures

All districts within the state must administer the *Illinois Measure of Annual Growth in English (IMAGE, 1996)* for English language learners, starting in grade 3, and the *Illinois Standards Achievement Test (ISAT, 1996)* for English proficient students in early spring. Data from these large scale measures are used for accountability purposes. Results from these tests are available, but have not been reported here in order to avoid any misinterpretation from Illinois specific measures.

Besides the measures for accountability, the school district uses multiple standardized, norm-referenced tests to measure second language development and academic growth in L1 and L2 for students in general education, transitional bilingual education, and dual language education classes:

The *IDEA Proficiency Test (IPT)*, a language proficiency measure in the areas of listening, speaking, reading, and writing, is administered annually in the students' second language, Spanish for native English speakers or English, for native Spanish speakers. The *Terra Nova (1997)*, a norm-referenced measure of academic achievement in English, is administered biennially, starting in grade 2, to proficient English speaking students. The *Supera (1997)*, a norm-referenced measure of academic achievement in Spanish, the analog to the English test, is administered biennially, starting in grade 2, to native Spanish speakers.

7. Methodologies and analysis

For the *IDEA Proficiency Test* (IPT), all available oral language, reading, and writing data were combined across years 1996-2002. For purposes of the analysis, overall designations, rather than raw scores, were used from 1 (the lowest) to 3 (the highest) for reading and writing and from 1 (the lowest) to 6 (the highest) for oral language. Paired t test comparisons from year to year were calculated for both groups in the dual language program (native English and native Spanish speakers), to determine growth in their respective L2 proficiency.

For the *Supera*, scores were reported in the form of normal curve equivalents (NCEs) for native Spanish speakers for each of the subscales and total battery. There are two types of NCEs presented in the tables. The first are derived from *Terra Nova*'s national norm group in order to compare native Spanish speakers with their English speaking peers while the 2nd type, referenced NCEs, represent the national norms of Spanish speaking students taking the *Supera*.

For the *Terra Nova*, standard subscale scores in reading, language, mathematics as well as total scores were reported for native English speakers and native Spanish speakers who were proficient in English. All available *Terra Nova* scores were combined for years 1999-2002 prior to analysis. Analyses of variance were conducted that compared differences among the student groups. Native English speakers in general education are compared with those in the dual language program and native Spanish speakers in transitional bilingual education are compared with those in the dual language program.

8. Results

L2 Language Proficiency

Tables 1-6 display the results for oral language, reading, and writing of native English speakers and native Spanish speakers in their second language across years (shown by grade to grade comparisons) in dual language education. Each table is followed by a brief summary of the findings from analyses of longitudinal data on the language proficiency measure.

Table 1

Grade to Grade Comparisons for Native English Speakers in Dual Language Education: Oral *IPT* Designation Scores

Grade Comparisons	Mean Previous Grade	Mean Current Grade	Mean Difference	S.D. Difference	df	t	Prob.
Grade K to 1	1.63	2.25	0.63	0.67	48	6.44	.001
Grade 1 to 2	2.24	2.87	0.63	0.71	38	5.46	.001
Grade 2 to 3	2.84	3.20	0.36	0.64	25	2.82	.009
Grade 3 to 4	3.21	3.53	0.32	0.58	19	-2.36	.030
Grade 4 to 5	3.55	4.55	1.00	1.11	22	4.21	.001
Grade 5 to 6	4.71	4.59	-0.12	0.60	17	-0.81	NS

Native English speakers make continuous progress in acquiring Spanish oral language across the grade levels. From grade K-2, it appears that students gain more than one half level, from grades 2-4, the pace declines to about a third of a level per year, with a jump of a full level from grade 4 to 5. Unlike the previous years when the students make statistically significant gains in oral language, at grade 6 native English speakers seem to have reached the test's ceiling, and may be considered proficient Spanish speakers. This statistic is quite revealing as the test is normed on a native Spanish speaking student population and not intended as a measure of second language proficiency, yet these students systematically move through the stages of second language acquisition, from non-Spanish speaker to fluent Spanish speaker.

Table 2

Grade to Grade Comparisons for Native Spanish Speakers in Dual Language Education: Oral *IPT* Designation Scores

Grade Comparisons	Mean Previous Grade	Mean Current Grade	Mean Difference	S.D. Difference	df	t	Prob.
Grade K to 1	2.41	3.46	1.05	0.85	36	7.56	.001
Grade 1 to 2	3.26	4.50	1.24	0.85	42	9.44	.001
Grade 2 to 3	4.39	5.00	0.61	1.02	40	3.82	.001
Grade 3 to 4	4.96	5.65	0.69	0.84	26	4.21	.001
Grade 4 to 5	5.87	5.94	0.06	0.25	15	1.00	NS

Like their counterparts acquiring Spanish as a second language, native Spanish speakers make continuous progress in acquiring English oral language across the grade levels. From kindergarten through grade 4, the students make statistically significant gains in oral language, each year. They top off at grade 5, when they reach the test's ceiling and are considered fluent in English. Spanish speakers reach oral language proficiency in their second language approximately one year sooner than native English speaking student reach comparable proficiency in Spanish, as most of these students have been exposed to spoken English prior to the onset of the dual language program.

Table 3

Grade to Grade Comparisons for Native English Speakers in Dual Language Education: Reading *IPT* Designation Scores

Grade Comparisons	Mean Previous Grade	Mean Current Grade	Mean Difference	S.D. Difference	df	t	Prob.
Grade 2 to 3	1.09	1.50	0.41	0.50	31	4.61	.001
Grade 3 to 4	1.42	2.05	0.63	0.60	19	4.61	.001
Grade 4 to 5	1.95	2.23	0.27	0.63	21	2.03	.056
Grade 5 to 6	2.13	2.69	0.56	0.51	15	4.39	.001

Native English speakers make continuous progress in acquiring Spanish reading across the grade levels, with approximately one half designation growth per year on the language proficiency test. From grades 2 to 6, each year, the students make statistically significant gains in Spanish reading with a slight dip from grades 4 to 5.

Table 4

Grade to Grade Comparisons for Native Spanish Speakers in Dual Language Education: Reading *IPT* Designation Scores

Grade Comparisons	Mean Previous Grade	Mean Current Grade	Mean Difference	S.D. Difference	df	t	Prob.
Grade 2 to 3	1.57	2.41	0.85	0.76	45	7.57	.001
Grade 3 to 4	2.17	2.04	0.13	0.55	22	1.14	NS
Grade 4 to 5	2.08	2.33	0.25	0.45	11	1.91	.082
Grade 5 to 6	2.36	2.36	0.00	0.63	11	0.00	NS

Native Spanish speakers make statistically significant progress in acquiring English reading from grades 2 to 3 and then tend to grow at a slower rate. It appears that this group of students has reached a plateau in English reading by grade 5, which perhaps is an artifact of the language proficiency measure.

Table 5

Grade to Grade Comparisons for Native English Speakers in Dual Language Education: Writing *IPT* Designation Scores

Grade Comparisons	Mean Previous Grade	Mean Current Grade	Mean Difference	S.D. Difference	df	t	Prob.
Grade 2 to 3	2.05	2.21	0.16	0.37	19	1.84	.083
Grade 3 to 4	2.29	2.00	-0.29	0.49	6	-1.55	NS
Grade 4 to 5	2.00	2.08	0.08	0.28	13	1.00	NS
Grade 5 to 6	2.00	1.87	-0.13	0.35	7	-1.00	NS

The only educationally significant gain in writing performance in Spanish for native English speakers is toward the onset of literacy development, from grades 2 to 3. Otherwise, writing proficiency in Spanish remains rather stable across the grade levels. This absence of substantial growth in Spanish writing may be attributed to the fact that the domain of writing is not emphasized in the curriculum.

Table 6

Grade to Grade Comparisons for Native Spanish Speakers in Dual Language Education: Writing *IPT* Designation Scores

Grade Comparisons	Mean Previous Grade	Mean Current Grade	Mean Difference	S.D. Difference	df	t	Prob.
Grade 2 to 3	1.96	2.19	0.23	0.43	25	2.74	.011
Grade 3 to 4	2.20	2.10	-0.10	0.57	9	-0.56	NS
Grade 4 to 5	2.20	2.00	-0.20	0.42	9	-1.50	NS
Grade 5 to 6	2.00	2.60	0.60	0.55	4	2.45	.070

Native Spanish speakers appear to perform at a commensurate rate as their native English speaking peers in acquiring writing in their second language. Similar to performance of their peers in dual language education, the only statistically significant gain in writing performance in English is from grade 2 to 3, with educationally significant differences from grades 5 to 6. These data substantiate the findings that both groups of students are developing oral language proficiency in their second language at a faster pace than L2 proficiency in literacy.

9. Academic achievement in L1 and L2

Tables 7-10 display the results for academic achievement in the areas of reading, language, and math in Spanish (for native Spanish speakers) and English (for proficient English speakers). Comparisons are made between native Spanish speakers in dual language and transitional bilingual education and between native English speakers in dual language and the general education program. Each table is followed by a summary of the findings.

Table 7

The Academic Achievement of Native Spanish Speakers in Grades 2, 4, and 6 Based on *Supera* Reading, Language, Mathematics, and Total Scores

Score	Grade 2 N=60			Grade 4 N=72			Grade 6 N=21		
	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.	N
Reading NCE*	38.00	10.31	60	38.89	18.22	70	42.48	14.81	21
Language NCE	38.30	10.29	60	35.09	14.77	70	42.76	16.79	21
Math NCE	39.83	22.06	60	33.49	15.56	72	43.62	21.44	21
Total NCE	37.82	14.72	60	34.71	15.92	70	42.14	17.21	21
Reading Ref. NCE	47.90	16.49	60	50.71	23.00	70	60.05	18.69	21
Language Ref. NCE	46.75	14.78	60	47.60	19.18	70	58.57	16.52	21
Math Ref. NCE	52.67	20.66	60	52.33	20.58	72	64.14	22.68	21
Total Ref. NCE	50.70	19.77	60	49.43	22.35	70	61.43	17.54	21

*NCE = normal curve equivalent

Overall, native Spanish speakers in dual language and transitional bilingual education programs score between the between the 47th and 64th referenced Normal Curve Equivalent (NCE), on a Spanish standardized, norm-referenced measure of academic achievement across grade levels 2, 4, and 6. These scores reflect the performance of native Spanish speakers in this school district, receiving native language support, compared with other native Spanish speakers in the norming group. In grades 2 and 4, it appears that these students hover around the 50th NCE or 50th percentile for reading, language arts, and mathematics. By grade 6, native Spanish speakers approximate 60th NCE for all content areas, a sizeable gain.

Table 8

A Comparison of the Academic Achievement of Grade 4 Native Spanish Speakers in Transitional Bilingual Education v. Dual Language Education in Spanish (L1) Based on *Supera* Scores

Score	Transitional Bilingual Education (N=46)		Dual Language Education (N=26)		Mean Difference	t	Prob.
	Mean	S.D.	Mean	S.D.			
Reading NCE	34.34	16.51	46.58	18.69	12.24	2.85	.006
Language NCE	29.93	14.18	43.81	11.42	13.88	4.24	.001
Math NCE	29.74	13.80	40.11	16.54	10.38	2.85	.006
Total NCE	29.50	14.15	43.54	15.05	14.04	3.92	.001
Reading Ref. NCE	45.21	22.18	60.04	21.69	14.83	2.73	.008
Language Ref. NCE	40.84	18.28	59.04	14.96	18.20	4.29	.001
Math Ref. NCE	47.48	18.57	60.92	21.50	13.45	2.79	.007
Total Ref. NCE	42.29	20.04	61.50	21.15	19.21	3.80	.001

Native Spanish speakers in transitional bilingual education programs in this school district receive native language support in the content areas that gradually diminishes as students become more proficient in English. By 4th grade, they are scoring between the 40th-47th Normal Curve Equivalent (NCE) that is referenced to other native Spanish speakers in the norming population. In contrast, native Spanish speakers in the dual language program are recipients of sustained native language support that is maintained by grade 4 at around 50%. At grade level 4, they consistently perform between the 59th and 61st referenced NCE in Spanish reading, language and mathematics.

This table shows that grade 4 native Spanish speakers in the dual language program consistently outperform their peers in transitional bilingual education with statistically significant differences in reading, language, math and the total score, irrespective of the norming group. These differences in performance between these two groups may be attributed to allocation of time to L1 support.

Table 9

Matrix of Pairwise Differences and Comparison Probabilities of the Academic Achievement of Native English Speakers in General Education and Dual Language Across Grade Levels Based on *Terra Nova* Scores

Status	Grade 2 General Education		Grade 4 General Education		Grade 6 General Education	
	Mean Diff.	Prob.	Mean Diff.	Prob.	Mean Diff.	Prob.
Reading						
Dual Lang. NES	14.964	.101	18.376	.065	0.767	NS
Language						
Dual Lang. NES	11.089	NS	10.062	.NS	6.749	NS
Math						
Dual Lang. NES	17.356	.061	2.413	NS	6.911	NS
Total Score						
Dual Lang. NES	14.483	.063	9.699	NS	0.141	NS

Based on the results from a standardized, norm-referenced test in English, native English speakers in the dual language program outperform their peers in the general education program in reading, language, math and the total score, more significantly in grade 2 than in grades 4 and 6. It can be inferred from these data that initial literacy development for these students in the dual language program is strong. By 6th grade, achievement in L1 is comparable for both groups of native English speakers. However, for the group in dual language education, L1 performance is only half of the achievement equation. It can be concluded, therefore, that math and literacy development in English for native English speakers in dual language education remains on the same course and pace as their counterparts in the general education program while accruing the additional benefit of acquiring a second language.

Inspecting the results of a standardized, norm-referenced test in English administered to native Spanish speaking students reveals that in grades 2 and 4, there are statistically significant differences in L2 reading and overall achievement between those students in dual language programs and those in transitional bilingual education. There are no differences in math scores for these two groups at any grade level. In the grade 6 cohort, both groups of native Spanish speakers exhibit similar academic performance in English.

Table 10

Matrix of Pairwise Differences and Comparison Probabilities between Native Spanish Speakers in Transitional Bilingual Education and Dual Language Programs on Academic Achievement in English (L2) across Grade Levels based on *Terra Nova* Scores

Status	Transitional Bilingual Education Grade 2		Transitional Bilingual Education Grade 4		Transitional Bilingual Language Grade 6	
	Mean Diff.	Prob.	Mean Diff.	Prob.	Mean Diff.	Prob.
Reading						
Dual Lang. NSS	63.417	.001	29.883	.007	2.037	NS
Language						
Dual Lang. NSS	27.537	NS	21.106	.086	-13.792	NS
Math						
Dual Lang. NSS	30.667	NS	17.875	NS	1.565	NS
Total Score						
Dual Lang. NSS	39.389	.027	22.901	.017	-3.301	NS

10. Caveats

There are limitations to every study conducted within an educational setting. The fact that this study represents a school district's internally selected measures within a naturally occurring context is a strength in terms of its program design. As the primary objective of this study is to inform school district personnel of dual language student performance over time, we have chosen not to adhere to the rigors of scientific inquiry. We recognize that there are certain caveats in choosing this path.

First, data analyses are based on cohorts of students, not matched students. Under ideal circumstances, individual student progress should be documented in a database, measure by measure, and then aggregated. Group level data, however, enable educators to see the overall picture of dual language education in terms of its program effectiveness over time.

Second, due to the small numbers of students in the dual language program at each grade level, caution should be made in generalizing the results. Program implementation was strategically planned to increase classroom incrementally over the years, starting with one kindergarten the first year, one first grade and two kindergarten classrooms the second year, and so on, in order to gradually build the program. Unless all dual language classrooms in a large district, or even state, utilize the identical measures and data collection procedures, it remains difficult to secure enough numbers of students to warrant generalization.

Third, although native Spanish speakers and native English speakers in dual language education program share the same demographics as their peers in transitional bilingual education and the general education program respectively, assignment to dual language is self selected. Therefore, the design of this study is both non random and non experimental.

The last, but most critical limitation of this study is the fact that only quantitative, district level data are reported; classroom level data need to be integrated in order to have a full complement of data sources and a more comprehensive picture of student performance. Unfortunately, time became the defining factor; analysis of qualitative data requires inspecting and codifying each student portfolio, grade by grade. We anticipate conducting this further analysis in the near future in order to grasp the total impact of dual language education on student performance and to paint a richer portrait of the continual development of participating students in this program.

11. Conclusions

Dual language education is unique in that specific decisions are made that may differentially impact two distinct linguistic and cultural groups that comprise the sample. Our data show that both native Spanish speakers and native English speakers benefit from their dual language education experience. The language development and academic achievement of both groups seem to follow a similar path.

Overall, L2 oral language proficiency is strong, and remains strong, for both dominant Spanish speakers and native English speakers in the dual language program. It appears that both groups of students have a solid foundation in the development of listening and speaking in their second language. In contrast, literacy development in L2 for both majority and minority students, in particular, writing, is not as robust.

After 6 years of dual language education, the academic achievement of native English speakers is comparable to that of their native English speaking peers in general education. In addition, they have acquired both language proficiency and conceptual understanding in Spanish, their second language. After 6 years of dual language education, native Spanish speakers perform academically at the same level as their counterparts in transitional bilingual education. This finding points to the effectiveness of native language support for Spanish speaking students as they acquire the English language and academic content in the school district, irrespective of the instructional model.

12. Implications for instruction and program improvement

This examination of dual language education has shown that thoughtful program planning and implementation, built on a strong theoretical foundation and sound educational practices, produces results that help inform instruction, and lead to the improvement of program services. In addition, information from large-scale, district assessment and classroom assessment explains how English and Spanish speaking students can and do learn side-by-side in two languages. The data generated from this study are being used to these ends by an Illinois school district.

Native English speakers in dual language programs do not compromise their academic achievement in L1 while acquiring L2 oral language and literacy. That is, the dual language environment appears to promote achievement of students across languages, and, in addition, the students perceive the value and use of possessing facility in more than one language. Native Spanish speakers in dual language programs appear to strengthen their academic achievement in L1 while they perform at the same level as native Spanish speakers in transitional bilingual education in L2 academic achievement. It can therefore be concluded that a well-articulated dual language program with a rigorous, content-based curriculum and standard procedures to monitor student progress, produces desired educational results.

Another interesting conclusion of this study is that the students participating in the dual language education program are, in fact, a microcosm of the entire student body that constitutes the school district, as shown by their similarities in both demographics and performance. Based on the results, all students throughout the school district could benefit from stronger literacy instruction in L2, especially writing, starting in Grade 3. The dual language student data support this district-wide phenomenon.

There are some findings that have greater generalizability than those at the student level, which need to be tempered due to the small size of the sample. First, it is imperative to construct a solid assessment framework, informed by research, in order to provide the groundwork for sound evaluation research and program evaluation. We have found that such a framework is useful as an organizing structure for data collection and analysis, balancing formative and summative measures, and, when shared with various stakeholders, offering insights into the breadth of the program itself.

Second, alignment among standards, program goals, curriculum, instruction, and assessment serves to validate the program and its outcomes. Establishing a relationship among the components of the dual language program becomes a way to ensure internal cohesion. Cohesion, in turn, is a means of strengthening continuity of communication and services from year to year.

Lastly, systematic monitoring of student progress is critical in order to apprise multiple stakeholders (parents, communities, teachers, administrators and school board members) of the status of student performance. The worth of any educational program is predicated on sound evidence of its effectiveness. The dual language program described in this paper has produced defensible data to report student achievement, inform teachers and instruction, and share the knowledge base associated with the developmental acquisition of two languages in a school setting. Further analysis of qualitative, ethnographic data in the next phase of the study will add to the existing results to yield an even richer and more complete picture of dual language students' growth and program effectiveness.

Appendix A

The Dual Language Assessment Framework
School District #54, Schaumburg, IL

Language Proficiency		Academic Achievement												
		Oral Language		Reading		Writing		Mathematics		Science		Social Studies		Language Arts
Classroom, Formative Assessment	E*	S*	E	S	E	S	E	S	E	S	E	S	E	S
	Student Oral Proficiency Rating	District reading rubric	District writing rubric	Student portfolios	Report cards	Informal reading inventory (IRI)	Unit tests	Self assessment						
Large scale, District Assessment	<i>Idea Proficiency Test (IPT)</i>		<i>IPT</i>	<i>IPT</i>	<i>IPT</i>	<i>IPT</i>	<i>Terra Nova</i>	<i>Supera</i>	<i>Terra Nova</i>	<i>Terra Nova</i>	<i>Terra Nova</i>	<i>Terra Nova</i>	<i>Terra Nova</i>	<i>Supera</i>
			<i>IMAGE</i>	<i>IMAGE</i>	<i>IMAGE</i>	<i>IMAGE</i>	<i>ISAT</i>	<i>ISAT</i>	<i>ISAT</i>	<i>ISAT</i>	<i>ISAT</i>	<i>ISAT</i>	<i>ISAT</i>	<i>ISAT</i>

E= English; S= Spanish

References

- Cazabon, M., Lambert, W.E., & Hall, G. (1993) Two way bilingual education: A progress report on the Amigos program. Research report No.7, The National Center for Research on Cultural Diversity and Second Language Learning. Santa Cruz, CA: University of California.
- Christian, D. (1994). Two way bilingual education: Students learning through two languages. Santa Cruz, CA and Washington, D.C.: National Center for Research on Cultural Diversity and Second Language Learning.
- Christian, D., Montone, C., Lindholm, K., & Carranza, I. (1997). Profiles in Two Way Immersion Education. McHenry, IL: Delta Systems.
- Collier, V. P., & Thomas, W. P. (2002). A national study of school effectiveness for language minority students' long term academic achievement. University of California, Santa Cruz: Center for Research on Education, Diversity & Excellence.
- Genesee, F. (1987). Learning through two languages. Cambridge, MA: Newbury House.
- Howard, E. & Sugarman, J. (2001). Two Way Immersion programs: Features and Statistics. (EDO FL 01 01) Washington, D.C.: Center for Applied Linguistics.
- Illinois Measure of Annual Growth in English (1996). Springfield, IL: Illinois State Board of Education.
- Illinois Standards Achievement Test (1996). Springfield, IL: Illinois State Board of Education.
- Idea Proficiency Test*. Brea, CA: Ballard and Tighe.
- Lindholm Leary, K. J. (2001). Dual language education. Clevedon, UK: Multilingual Matters.
- Supera*. (1997). Monterrey, CA: CTB McGraw Hill.
- Terra Nova*. (1997). Monterrey, CA: CTB McGraw Hill

ISB4: Proceedings of the 4th International Symposium on Bilingualism

edited by James Cohen, Kara T. McAlister,
Kellie Rolstad, and Jeff MacSwan

Cascadilla Press Somerville, MA 2005

Copyright information

ISB4: Proceedings of the 4th International Symposium on Bilingualism
© 2005 Cascadilla Press, Somerville, MA. All rights reserved

ISBN 978-1-57473-210-8 CD-ROM
ISBN 978-1-57473-107-1 library binding (5-volume set)

A copyright notice for each paper is located at the bottom of the first page of the paper.
Reprints for course packs can be authorized by Cascadilla Press.

Ordering information

To order a copy of the proceedings, contact:

Cascadilla Press
P.O. Box 440355
Somerville, MA 02144, USA

phone: 1-617-776-2370
fax: 1-617-776-2271
sales@cascadilla.com
www.cascadilla.com

Web access and citation information

This paper is available from www.cascadilla.com/isb4.html and is identical
to the version published by Cascadilla Press on CD-ROM and in library binding.