JAASEP

JOURNAL OF THE AMERICAN ACADEMY *of* SPECIAL EDUCATION PROFESSIONALS

SUMMER, 2008

JOURNAL of the

AMERICAN ACADEMY

of

SPECIAL EDUCATION PROFESSIONALS

(JAASEP)

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Instructional Tactics That Facilitate Inclusion

Are We Doing Successful Inclusion in Secondary Classrooms?

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Abstract

While inclusive educational placements have become the bedrock of national policy, there are questions concerning support for inclusion among both general and special educators. Further little is known concerning what instructional tactics teachers are actually using in their classes to facilitate inclusion. Ninety-one teachers from grades kindergarten through high school, teaching in either general or special education positions, completed three questionnaires; a) a demographics measure, b) a questionnaire on their use of effective instructional strategies that facilitate inclusion, and c) an attitude scale. Results suggest that attitudes toward inclusion among both general and special educators are less than positive, indicating that special educators may not be strong advocates of inclusive class practices. However, more positive attitudes toward inclusion among middle school teachers were related to increased use of instructional tactics much less frequently than elementary school teachers, suggesting that additional professional development on effective inclusion tactics may be necessary for teachers in the higher grade levels in order to facilitate effective inclusion.

Instructional Tactics That Facilitate Inclusion

Within the last 5 years, there have been further calls for increased education of students with mild or moderate disabilities in inclusive classes (Commission, 2002). As inclusion placements grow around the country, it becomes increasingly important to expand our understanding of how teachers feel about inclusion as well as how frequently teachers are using strategies that facilitate effective instruction for students with disabilities in the inclusive classroom. For example, with inclusion mandates firmly embedded within various national policy initiatives (Commission, 2002), one may well expect that special education teachers are advocating for inclusive instruction. However, little extant research has

investigated special education teachers' attitudes toward inclusive education, and research has not documented that special educators are serving as an advocacy group for effective inclusion.

Further, some research has raised questions concerning the efficacy of inclusive classroom practices for enhancing the academic achievement of students with mild disabilities (Blankenship, Boon Fore III, Hagan-Burke, 2007; Fuchs & Fuchs, 1994; Sowers & Powers, 1995; Vaughn, Schumn, & Klingner, 1995). While these studies have raised questions on the overall efficacy of inclusion, only a few studies have addressed the factors that may impact the efficacy of inclusive classroom instruction (Austin, 2001; Bender, Vail, & Scott, 1995; Blankenship, fore III, & Boon, 2005; Fore III, Hagan-Burke, Burke, Boon, & Smith, 2007; Katz, Mirenda, & Auerbach, 2002; Minke & Bear, 1996), and none of these efforts has been comprehensive. Thus, we do not know all of the particulars that impact successful inclusion.

There has been limited research during the last decade on certain isolated variables that impact the implementation of inclusive education. For example, several researchers have investigated the attitudes of general education teachers toward inclusion (Daam, Beirne-Smith, & Latham, 2001; Minke & Bear, 1996; Shade & Steward, 2001). Other researchers have described the instructional strategies that teachers have employed in inclusive classes (Bender, Vail, & Scott, 1995; DeBettencourt, 1999). Unfortunately, many of these studies involve small numbers of teachers and are limited in the grade levels described. For example, the evidence on instructional strategies utilized by general education teachers in secondary grades is quite limited (DeBettencourt, 1999). Nevertheless, these studies do provide a basis for continued investigations of attitudes and instructional practices in the inclusive classroom.

Attitudes of General Educators Toward Inclusion

It has been fairly well established that general education teachers at some grade levels may exhibit less than positive attitudes towards inclusive instruction (Daam, Beirne-Smith, &Latham, 2001; Katz, Mirenda, & Auerbach, 2002; Shade & Steward, 2001). Consequently, researchers have focused more explicitly on this issue of teacher attitudes (Bender, Vail, & Scott, 1995; Chalmers, 1997). For example, Chalmers (1997) conducted a guided interview study in order to identify attitudes of regular education teachers who were perceived as effective instructors in the inclusive setting. To select the participants, the researchers polled both special education teachers and administrators. In order to be included in the subject sample, the teachers had to be nominated for participation by both the special education teacher and the principal. Thus, this design highlights attitudes toward inclusion held by a group of highly effective regular education teachers in the inclusive classroom. Once selected the participants took part in an open-ended one-hour guided interview based on 12 specific questions. Ten regular education teachers were selected; these teachers averaged 12.6 years in their current teaching position, and included 5 secondary teachers and 5 elementary teachers. These secondary teachers worked with students with mild mental disabilities, learning disabilities, or behavioral problems. The elementary teachers were serving a wider range of students with disabilities in terms of type and severity. All of these teachers were receiving consultative services for the students with disabilities in their classroom. Researchers transcribed all interviews and sent follow up questionnaires.

The results indicated that teachers who have been identified as excellent inclusive teachers, share common positive beliefs about inclusion, as well as similar instructional skills. For example, these teachers shared the belief that individualized expectations were one requisite modification for effective inclusion services. Further, these teachers perceived that they were responsible for the academic success of all the students in their classes. Next, these teachers evidenced attitudes favoring

interpersonal warmth and acceptance in interactions with students. The data showed that these general education teachers strived to maintain a positive working relationship with the special education teacher.

However, the Chalmers (1997) study did indicate some differences between elementary and secondary teachers. Specifically, teachers in lower grades believed that they needed to provide environments fostering students' development, whereas secondary teachers did not indicate this as imperative. This difference suggests that teachers at different grade levels may value inclusion differently at different grade levels, and future research should incorporate this grade level factor into the research design.

Daam, Beirne-Smith, and Latham (2001) compared attitudes towards inclusion between several groups of educators. These researchers investigated the perceptions of elementary teachers, both general educators and special educators, as well as building administrators toward inclusive education. The subjects were 324 elementary general educators, 42 special educators, and 15 building administrators. A 24-item survey was designed by the researchers using a Likert-type scale. In addition, semi-structured interviews were conducted with 12 participants, four persons from each group. This design allowed the researchers to compare attitudes towards inclusion among these different groups of educators. Surprisingly, the attitudes of both special education teachers and general education teachers towards inclusion were less than positive, and these groups were not significantly different in their attitudes. Both groups of teachers believed that pull-out programs were more likely to be an effective instructional setting for many students with special needs. This is an important finding, since special educators have historically served as advocates for individuals with disabilities. If inclusive instruction is going to be successfully implemented, at a minimum one would assume that the special educators involved should be supporting and advocating for inclusion.

In contrast, a study by Minke & Bear (1996) seemed to demonstrate positive attitudes towards inclusive instruction among general and special educators. These researchers focused on teachers' perceptions relating to special education services. Four hundred and ninety three teachers were asked to complete a 5-page questionnaire that was developed to examine teacher attitudes toward inclusion. These questionnaires were returned by 320 elementary school teachers. Regular education teachers' return rate was 59% as compared to 90% return rate for special education teachers. These results suggested that both special education and regular education teachers report positive views of inclusion education.

Finally, some research has suggested that attitudes towards inclusion may be somewhat malleable. For example, Shade and Steward (2001) conducted a study to assess the attitudes general education and special education pre-service teachers have towards inclusion of students with disabilities before and after they have completed an introductory course in special education. The subjects were 122 general education students enrolled in a required special education course in college, as well as 72 undergraduate special education majors. The first day of each course, subjects were administered a 48-item inclusion inventory. Upon completion of the course, the subjects completed the same instrument as a posttest measure. The results of this study suggest that a single course can significantly change pre-service teacher attitudes toward inclusion for both groups of teachers.

Instructional Strategy Utilization in Inclusive Classes

In addition to the extant research on attitudes towards inclusion, a number of other studies have investigated teachers' use of instructional strategies that may facilitate effective inclusion. This research has suggested that teachers are not utilizing a wide array of instructional strategies in the general education classroom (Bender, Vail, & Scott, 1995; DeBettencourt, 1999; Welch, 2000). For example,

Bender, Vail, and Scott (1995) used the Bender Classroom Structure Questionnaire (Bender, 1992) to investigate regular education teachers' attitudes towards inclusion, as well as their self-reports concerning the instructional strategies they employed in the inclusive classroom. This study involved a survey of 127 general education teachers in 11 school districts in a Southeastern state. Teachers from grades 1 through 8 participated in the study. Each participant completed three questionnaires; the Bender Classroom Structure Questionnaire assesses the teachers' background, education, and the teachers' use of instructional tactics that facilitate inclusion. Further, the teachers' attitudes towards their personal teaching efficacy were measured by the Teacher Efficacy Scale, a self-report measure developed by Gibson and Dembo (1984). Participants included 10 male and 117 female general education teachers. Results indicated that instructional strategies that have been shown to be effective in facilitating inclusive instruction (e.g. a variety of student groups, metacognitive or learning strategy instruction, self-monitoring and self-instruction) are not being widely used in many inclusive classes. Second, these data indicate that negative attitudes towards inclusion resulted in less frequent use of effective instructional strategies. Finally, additional analysis of these data indicates that teachers who had more students with disabilities possessed a more positive attitude toward inclusion than those teachers with fewer students. However, interpretation of this particular result is difficult. Specifically, do general education teachers who are exposed to students with disabilities become more favorable towards inclusion, or do teachers who are favorable towards inclusion receive an increased number of students with disabilities, as principals and guidance counselors determine class membership prior to the school year?

In an effort to document efficacy of various instructional procedures in the inclusive classroom, Welch (2000) conducted a study on team teaching in two inclusion classrooms. This research employed a new field based design that utilized both qualitative and quantitative assessments of student outcomes, teacher procedures and teacher impressions. Participants included students in two elementary classrooms in two different schools in a suburban area. General education teachers, all of whom were involved in inclusive team teaching, were required to keep logs which provided information regarding planning time, type of instructional format used, student grouping for instruction, and follow up evaluations for quantitative assessment. Qualitative assessment was conducted by utilizing focused discussions and written comments regarding teachers' satisfaction with the implementation of team teaching. Curriculum-based assessment was the instructional method utilized to facilitate inclusion. The results showed an increase in reading and spelling performance of all students suggesting that curriculum-based measures may be one effective instructional approach that facilitates successful inclusion. However, the results also showed that, even in these team-taught classes, the dominant instructional grouping pattern was whole group instruction.

DeBettencourt (1999) conducted a study to investigate instructional strategies used by general educators at the middle school level. This study paralleled that of Bender, Vail, and Scott (1995), and sought to determine teachers' attitudes toward inclusion together with their use of instructional strategies to facilitate inclusion. However, DeBettencourt's study differed from Bender et al.'s (1995) earlier investigation in that this study focused exclusively on teachers at the middle school level. The subjects were seventy-one general educators from three middle schools in a rural southeastern state. The BCSQ (Bender, 1992) was used as a survey instrument. In total, eighty three percent of the teachers responded. The findings, similar to Bender et al.'s (1995) demonstrated that among elementary teachers, indicated that teachers were not utilizing many instructional strategies that have been shown to be effective in enhancing the education of students with disabilities. However, use of effective instructional strategies by these general educators increased with the number of special education classes taken. Finally, these data, like the Bender et al. (1995) study above, indicate that some general

educators may not have a positive attitude toward including students with disabilities in their classrooms.

Austin (2001) investigated the instructional practices in inclusive classrooms, as well as factors that affect inclusion. The research method consisted of using a semi-structured survey created by the researcher and by interview to collect informative data from a random sampling of collaborative teaching team members. Ninety-two teachers, from kindergarten through grade twelve, who were currently co-teaching in inclusive classes completed surveys concerning their teaching tactics. From this group, six general educators and six special educators were randomly selected and interviewed. The results showed that general education teachers did more direct instruction in the inclusive setting than do their collaborative special education team partners, and that the typical role for the special education teacher in theses inclusive classes was primarily a support role rather than a direct teaching role. Of course, this raises certain questions concerning optimal use of these highly trained special education professionals.

Based on these inconclusive and often contradictory data, the purpose of this study is to address an array of questions on attitudes towards inclusion and instructional strategy utilization in inclusive classes, across the grade levels. We believe it is important to consider both attitudes and instructional practices together in one study, since these clearly may impact each other. Therefore, both teacher attitudes and instructional strategy utilization will be explored in varying grade levels, elementary, middle school, and secondary school, in order to describe how teachers at various grade levels view inclusion, and employ strategies that are known to be effective for enhancing inclusive education. Finally, we sought to directly compare the attitudes toward inclusion between special educators and general educators, in order to explore the belief that special educators are serving as advocates for inclusive instruction.

Method

Subjects and Setting

A subject pool of special education and general education teachers was obtained for this study from a large graduate education class. Ninety-one teachers representing a wide geographical area within the state of Georgia participated in this study. Initially, thirty-two special education teachers who were participating in a web-based special education class at the University of Georgia were identified and invited to participate in a study on inclusive instructional strategies. Each of the special education teachers who chose to participate were instructed to randomly select two general education teachers from their school and invite their participation in this study.

Each of these 96 teachers were asked to complete three measurement instruments, a) a self-report questionnaire on their attitudes towards inclusion, b) the Bender Classroom Strategies Questionnaire (Bender, 1992; Bender, Vail, & Scott, 1995), and c) a set of demographic questions. One general education teacher and four special education teachers did not complete the measurement instruments in a usable form, yielding a total of 28 special education teachers and 63 general education teachers who completed the questionnaires for this analysis.

Measures

Demographics and Classroom Experience. The demographics questionnaire included certain questions relative to teachers' background, such as questions about race, gender, teacher certification areas, the number of special education courses the teachers had taken, years of teaching experience, and years of teaching experiences in which teachers taught students with disabilities. Teachers were also asked questions about their teaching experiences and their current instructional classes, including the number of students with disabilities in inclusive classes, and the grade level they taught.

The Attitude Questionnaire. A nine-question Likert scale was developed to assess teachers' specific attitudes toward inclusion. Questions assessed attitudes toward inclusion in general, as well as inclusion practices in the teachers' particular school. Each question assessed a teachers' belief about the positive effects of inclusion. Sample questions include, "I believe that most students with disabilities are better served in special education classes than in general education classes" and "I believe schools are equipped to serve individuals with disabilities in general education classes." Each item was rated on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scores for the indicators items were totaled for each teacher to generate a composite score indicating the teachers' belief regarding the benefits of inclusion for students with and without disabilities. A higher score indicated a more positive attitude toward inclusion.

A test-retest reliability procedure was used to establish reliability for this attitude scale. Twenty-seven teachers completed their scale twice over a one-month interval. The test-retest correlation on the total score on the attitude scale was .79 ($p < 0.001$), indicating acceptable overall test-retest reliability for an experimental measure. Further, correlations on the scores for each of the nine individual indicators were significant ($p <. 003$), and ranged from .54 to .84.

Bender Classroom Structure Questionnaire. The Bender Classroom Structure Questionnaire, (BCSC) described previously in the literature (Bender, 1990, 2002, 1992), was used to assess teachers' utilization of instructional strategies that facilitate effective inclusive instruction. This 40-item Likert scale is a self-report questionnaire that includes research-proven strategies that facilitate effective inclusive settings, and has been used in a variety of earlier studies (Bender, Smith, & Frank, 1998; Bender & Ukije, 1989; Bender, Vail, & Scott, 1995). Sample indicators include, "I suggest particular methods for remembering;" "I use advance organizers to assist students in comprehension of difficult concepts;" "I praise students for successful work whenever possible;" and "I use a specialized grading system which rewards effort for pupils with disabilities."

Three separate scores may be generated from the BCSQ – the Total BCSQ, Individualized Instruction, and Metacognitive Strategy Instruction. A high score on the Total BSCQ indicates that the teacher is using a wide variety of instructional strategies that facilitate inclusion fairly frequently. Bender and Ukje (1989) completed a factor analysis of the scores on the various indicators of the BSCQ, and a two-factor structure was identified. A high score on the first factor indicates that a teacher is using instructional methods that facilitate metacognitive understanding (Bender, 1992; Bender & Ukijie, 1989), while a high score on the second factor indicates that a teacher is using instructional grouping strategies that result in high levels of individualized instruction in the classroom. Internal-consistency reliabilities for each of there scores are in the acceptable range for research purposes (.88, .84, and .74, respectively; Bender & Ukije, 1989).

Results

Correlational Analysis

Table 1 presents the relationship between instructional strategies used by general education teachers in the inclusive classroom, teachers' attitudes towards inclusion, and various characteristics of those teachers. Table 1 demonstrates four significant correlations. First, the total years of teaching experience was positively related to how frequently the teachers' individualized instruction in their classroom. Next, the size of the inclusion classroom was negatively related to each of the three measures of teachers' utilization of effective inclusive instructional strategies, suggesting that larger general education classes are less characterized by strategies that facilitate successful inclusion. Interestingly, these data demonstrated no relationship between the use of effective inclusion strategies and attitudes toward inclusion.

Table 1

General Education Teachers Instruction Strategies

	Years of Teaching	Years of Teaching Students With Disabilities	Courses on Teaching The Disabled	Number of Special Education Students in The Class	Class Size	Fore Attitude Scale
Metacognitive Instruction	.13	.04	.07	-.16	-.30**	-.13
Individualization Instruction	.32*	.19	.11	-.13	-.25*	.06
BCSQ Total	.21	.11	.11	-.20	-.32	-.02
Fore Attitude Scale	-.07	-.11	.03	.06	-.04	---

Note. * $p < .05$. ** $p < .01$.

In our efforts to better understand inclusive instructional practices, these data were subdivided by grade level, and the same correlational analyses were run again. Among the general education teachers, 31 teachers were elementary teachers, 20 were middle school teachers, and only 12 were high school teachers. Correlations were produced for the elementary and middle school teachers, whereas the limited number of high school teachers prevented data interpretation. For the elementary teachers, only one of the 23 correlations (the same relationships depicted in Table 1 above) was significant. For elementary teachers, teachers with more students with disabilities in their inclusive classroom had less positive attitudes about inclusion overall ($r = -.34$; $p < .05$).

For the middle school general educators, four of 23 relationships were significant. First, the years of teaching experience for middle school teachers was positively correlated with increased use of individualized instruction ($r = .50$; $p < 02$). Next, teachers' attitudes towards inclusion correlated positively with every measure of effective instructional strategy utilization ($r = .44$, .58, and .58 for the metacognitive instructional strategies, individualized instructional strategies and the total BCSQ, respectively; $p < .05$). This demonstrates that among middle school teachers a more positive attitude toward inclusion was related to increased use of effective instructional techniques.

Special Education vs. General Education Instructional Strategies

Table 2 presents data comparing effective inclusive instructional strategies utilization and attitudes of general education and special education teachers towards inclusion. One may expect that special education teachers used more effective instructional strategies that would be likely to facilitate inclusion, in order to advocate for inclusion as well as prepare students with special needs for their inclusive classes. Further, one may well expect that special education teachers would be more positively disposed to inclusion. However, significant results were demonstrated on only one of the three instructional strategy utilization measures. Special education teachers did report using more individualized grouping strategies than the regular education teachers. On the measure of teacher attitude toward inclusion, special education teachers were no more positively disposed towards inclusion than were general educators.

Table 2

Comparison of Instructional Strategies Used By General Education & Special Education Teachers

	General Education Teachers		Special Education Teachers			
	M	*SD*	*M*	*SD*	*F* (2, 60)	*p*
Instruction	40.19	5.98	40.36	5.02	.02	---
Individualization Instruction	49.60	6.71	52.50	6.32	3.74	.05
BCSQ Total	146.02	16.83	150.54	15.83	1.45	---
Fore Attitude Scale	30.02	3.59	29.21	3.55	.97	---

Effective Inclusive Instruction Across Grade Levels

Table 3 presents the means and standard deviations on effective instructional strategy utilization and teacher attitudes towards inclusion for general education teachers in three grade level groups; a) elementary, b) middle school, and c) high school. The results of analysis of variance comparisons between these three groups are also presented. The results identified differenced among these three groups of teachers on each of the measures of effective instructional strategy utilization from the BCSQ, but not on the attitude indicator.

Table 3

Means and Standard Deviations

	Elementary		Middle		High			
	M	*SD*	M	*SD*	*M*	*SD*	*F* (2, 60)	*p*
Metacognitive Instructive	42.51	4.25	38.45	5.74	30.08	7.99	5.52	.01
Individualization Instruction	51.51	6.04	48.70	5.82	46.16	8.41	3.23	.04
BCSQ Total	153.32	12.83	141.35	16.38	134.92	18.96	7.65	.001
Fore Attitude Scale	30.16	3.16	30.45	3.31	28.92	4.98	.73	--

Post hoc analyses were then conducted on the three instructional strategy utilization measures to identify specific differences between the groups using Tukey's Studentized Range Test (HSD). On the frequency of use of metacognitive instructional strategies, and the frequency of use of individualized grouping strategies, the elementary teachers reported using these strategies more frequently then the high school teachers. On the total score on the BCSQ, the elementary teachers reported using effective instructional strategies overall more than either the middle school teachers or the high school teachers.

Discussion

The results from this study suggest several interesting conclusions. First, teachers' backgrounds, experience, and educational level are related to how frequently teachers utilize effective inclusive strategies in the general education classroom. These data would seem to hold some implications for practitioners, in that the increased teaching experience would tend to be related to more effective inclusion. Charmer's (1997) data would also seem to support this contention in that the average years of teaching experience among teachers who were perceived as effective inclusion teachers was over 12 years. Next, increasing the size of the inclusive classroom was related to less frequent use of appropriate inclusion teaching strategies. This would seem to suggest that inclusion might be more effective in smaller general education classes, in which the teachers may spend more time with each individual student.

The relationships between general education teachers' attitudes and teachers' of effective instructional strategies for inclusion, as demonstrated herein, are interesting. While no relationship was observed among the composite teachers' scores from all grade levels, the correlations for middle school teachers between teacher attitude and self-reported use of effective instructional strategies were significant. In that group of middle school teachers, a positive attitude toward inclusion among teachers was related to increased use of effective inclusive instructional strategies. These data support the suggestion by Bender, Vail, and Scott (1995) that positive attitudes towards inclusion among teachers are related to increased use of effective instructional strategies in the inclusive classroom. We can offer no explanation for the lack of correlations between teacher attitudes toward inclusion and use of appropriate instructional strategies among the elementary teachers.

In comparing instruction and attitudes toward inclusion between general educators and special educators, several findings emerged. First, special education teachers apparently use more

individualized instructional grouping strategies than general educators, as one may well expect. However, no difference was noted between the groups in use of metacognitive instructional tactics. Further, that attitude comparisons documented no difference in attitude towards inclusion between these groups of teachers. Clearly, with inclusion receiving increased support from federal legislative policy (Commission, 2002), one may well hope that special education teachers should serve as advocates for inclusive instruction. In contrast, these data do not seem to document strong positive perceptions on inclusion among special education teachers. This finding is consistent to those of Damm, Bernie-Smith, and Latham (2001); Murawski & Dieker (2004), who demonstrated that special education teachers and general education teachers alike were not comfortable in collaborative teaching situations. Clearly researchers who investigate implementation of inclusion in the future should build some measure of "teacher attitude" into their designs. Moreover, the easy assumption that special education teachers, who have historically been advocates for students with disabilities, are also strong advocates for inclusion seems to be incorrect. Inclusion has become the foundation of national policy, as stated in legislation as well as the recent Report for The Commission on Excellence in Special Education (2002). Thus, some type of intervention to impact the attitudes toward inclusion among special educators may be warranted. Shade and Steward (2001) showed that one course could positively impact the attitudes of special and general educators towards inclusion, and clearly some emphasis on attitude change in college courses on education of students with disabilities in the general education classroom is certainly in order.

Data derived from the studies of Murawski & Dieker (2004) and later from Murawski (2006) confirm the gap in research as just described but suggests that successful inclusion classrooms should be a true collaborative, co-teaching model between the regular and the special education teacher. Further results of the study, "also clearly imply that teachers need to be trained in how to co-teach effectively and efficiently" (Murawski, p.245).

Murawski (2006) study stressed the idea that before any new teaching delivery systems or strategies are implemented, professional development should be jointly provided for teachers charged with delivering the instructional changes. Murawski reminds the reader that " ongoing staff development is mandatory for co-teaching to be successful" (p.235). Inclusion and collaboration are two sides of one coin.

Finally, these data document that teachers at different grade levels implement effective inclusive instructional strategies with different frequency; specifically teachers in middle school and high school use these effective inclusion strategies less frequently. As reported earlier, Charmers (1997) documented that upper grade teachers felt less positive towards inclusion overall than do elementary teachers. Clearly, these studies taken together do not bode well for the overall success of inclusive placements in middle and secondary schools. It would seem that educators are doing a more effective job providing inclusive instruction in the lower and elementary grades, and a less effective job in the secondary school. This seems to suggest a need for increased professional development activities in middle and secondary schools aimed at increasing the use of effective instructional tactics that may facilitate successful inclusion. Bender (2002) recently suggested that the growing emphasis on differentiated instruction (see Tomlinson, 1999) might provide a vehicle through which such professional development could be provided. In fact, efforts to differentiate the instructional strategies in general education classrooms closely parallel the goals of increased modifications in general education that have long been advocated by special educators.

There are a number of limitations that should be noted in the present study. First, each of the independent variables was based on self-reported data by inclusion teachers and thus may have involved some bias. In the future, researchers may wish to couple this type of self-report measurement

with actual observations in the classrooms to determine which specific instructional tactics teachers are using. Next, while this study was somewhat more comprehensive than some studies in that participants herein came from a variety of schools and school districts, only teachers from one state were included here. Future studies should involve schools and teachers across a more comprehensive geographic area.

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Master's Level Teacher Preparation for Educating Immigrant Students with Special Needs in US Schools

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Abstract

This article provides results from a research project investigating how Master's level teacher training programs address the education of immigrant students at-risk and those with special needs. We surveyed Master's programs in nine states with significant populations of immigrant students. Results suggest that graduate level programs in special education emphasize selected immigrant special education training and competency areas to a limited-moderate degree. Our findings reveal that teacher training was similar among schools that differed in size and type of degree granting institution (Master's vs. Master's and Doctoral). Within-school analyses found the training area of Assessment was emphasized the most while training in Collaboration was the least emphasized. We share results from this study and also provide suggestions for future research.

Master's Level Teacher Preparation for Educating Immigrant Students with Special Needs in US Schools

Many educational classrooms nationwide have significant percentages of immigrant students, including both urban and rural school systems. The continuous and sometimes dramatic increases in the number of immigrant students place tremendous pressures on educators as they attempt to effectively work with this growing population (Suarez-Orozco & Suarez-Orozco, 2001). Although there are variations in the definition that describes who qualifies as an immigrant student, the most accepted include the following: 1) Born outside of the United States; 2) Enrolled in US schools for less than three years; and, 3) Between the ages of 3 and 19 (Emergency Immigrant Education Program, OELA).

An Urban Institute study based on Current Population Surveys data (CPS), estimated in 2000 that there were over 10.5 million school-age children of immigrants enrolled in grades K-12, representing 20% of the total K-12 student population (Fix & Passel, 2003). Of these students, Fix and Passel (2003)

approximated that 2.7 million, or 5% of the total student population, are foreign born. This presents unique challenges to educators and school systems as they attempt to meet educational needs of many immigrant students in their early stages (i.e., within the first three years of formal schooling) of acculturating to United States' schools and environments. For example, Garcia and Cuéllar (2006) building on the work of Lucas (1997) wrote that:

"Most U.S. students undergo a set of important and critical transitions: from home to school and from childhood to adolescence. Immigrant children move through these same critical transitions and those associated with transitioning to a new culture and language" (p. 2240).

Therefore, in addition to dealing with transitions experienced by all children, immigrant students must adjust to new cultural experiences and may also confront stress due to a modified family structure, migration and refugee experiences, poverty, cultural isolation, limited English Proficiency, differences in the institution of schooling, minority status, or inconsistent academic preparation (Coehlo, 1994). As a result, the educational needs of these students are significant, and if not addressed appropriately, place many immigrant learners at risk.

Literature Review

Our conceptual framework relies on three bodies of literature: 1) immigrant participation in special education; 2) the educational experiences of immigrants and the factors that represent at-risk situations; and, 3) Teacher education for work with immigrant students at-risk or those with disabilities. Although research in these areas is limited (a rationale in itself for conducting our study), the prior research provides a foundation for additional research into the education of immigrant students at-risk or those with special needs.

Immigrant Participation in Special Education

There is a significant dearth of research that investigates immigrant participation in special education. While there are several potential reasons to explain this, the issue of sampling clearly contributes. Oftentimes studies examining immigrant special education consider immigrants and children of immigrants together or English Language Learners in the same group or, even broader, as part of a heterogeneous group of minorities in special education. Such studies have contributed greatly to research on special education; however, immigrant students (as defined above) at-risk or in special education are rarely studied as a population in their own right. While research directly related to this defined population is limited, studies that have been published yield important considerations and conclusions relevant to our study.

For example, one study completed by Dylan, Schwartz and Stiefel (2007), explored nativity differences in special education participation in addition to attendance and school mobility. This study begins to illuminate not only the incidence of immigrant participation in special education but also potential reasons behind their findings, especially the role of parents in their children's education. Within their review of prior research, Dylan, Schwartz and Stiefel discussed a study (Gershberg, 2002) that found immigrant students were placed in special education at higher rates; a study that suggested that parents' lack of involvement, resulting in part from institutional barriers, contributed to an overrepresentation of immigrant students in special education. Conversely, in their study Dylan, Schwartz and Stiefel found that immigrant students at-risk, or those who may have a disability, received special education at substantially lower rates than their native-born peers. They indicated that language proficiency, poverty, nor the number of years in school fully explained this finding. Rather, they suggest that lower

parent involvement in United States schools may lead to their inability to advocate for needed special services for their children. In support, research conducted by López (2001) and Shannon (1996) suggested that the efforts of immigrant parents are not often recognized by teachers and administrators because their contributions may not fall within dominant notions of parent participation. In short, these studies suggest that collaboration between parents of immigrant students, schools, teachers and administrators is essential to address both over and under-representation in special education. In regards to learners at-risk other researchers have documented additional possible contributing factors.

Immigrant Learners At-Risk: Contributing Factors

Several researchers and authors have discussed social and educational conditions that potentially place immigrant students at-risk in learning (McCollum, 1999; Goodwin, 2000, Hoover et al., 2008; Suarez-Orozco & Suarez-Orozco, 2001). Factors such as language barriers, difficulty navigating their new environment, inability of teachers to bridge new concepts to prior cultural/linguistic experiential backgrounds, poverty, culture shock associated with adjusting to a new school environment, perceptions that immigrant students are incapable of meeting high educational standards, or biased/prejudicial attitudes are but a few of the social and educational factors that place immigrant students at-risk in learning. In addition, Goodwin (2000) wrote that 'immigrant students are especially apt to receive weak curriculum" (p. 2) further highlighting at-risk factors directly related to classroom instruction.

Teacher Preparation and Immigrants with Special Needs

Unfortunately, for many students at-risk, the misinterpretation and misidentification of learner needs, along with uninformed parents often results in less than challenging classroom curricula, inappropriate referrals to special education, lack of needed special services, inadequate evidence-based interventions and less than adequate cultural competent instruction (Dylan, Schwartz & Stiefel, 2007; Hoover et al., 2008; Suarez-Orozco & Suarez-Orozco, 2001). As discussed in the research above, one significant result of these at-risk conditions is the potential misplacement of immigrant, as well as other students, into special education due, in part, to educators' lack of knowledge and skills necessary to differentiate learning differences from learning or behavior disorders (i.e., effective teacher preparation) (Hoover, In Press).

In support, Smith-Davis (2000) found that many of today's teachers of immigrant learners lack quality training and preparation to meet their educational needs. This inadequate preparation may result in the perpetuation of various at-risk learning situations such as: 1) the lack of adequate support systems for new immigrant students, 2) barriers to equal access and opportunities to learn, 3) inadequate training to meet unique needs of immigrant students using evidence-based interventions, 4) lack of knowledge of cultural and linguistic factors relevant to the needs of immigrant students, or 5) the pervasive misperception that a language difference is a language disorder (Suarez-Orozco & Suarez-Orozco, 2001; Smith-Davis, 2000; Chaifetz, 1999; Haynes, 2001).

Specifically, results from a Pilot Study completed by Smith-Davis (2000) include:

1.) Immigrant students are over-represented in special education

2.) Language difference is often misunderstood to be a learning disability

3.) Some immigrant students with disabilities go un-referred to special education (finding also documented in Dylan, Schwartz & Stiefel, 2007)

4.) Inadequate special education supports exist for immigrant students with disabilities

5.) Teacher shortages exist nationwide in the education of immigrant students, including special education teachers

Therefore, given the increasing numbers of immigrant students, the lack of sufficiently trained teachers, and the dearth of information on immigrant participation in special education, research is needed to help clarify the current state of teacher preparation for working with immigrant students in university and college programs. Knowledge of specific characteristics of teacher preparation programs relative to training for effective work with immigrant students in today's schools will assist teacher trainers nationwide to evaluate and improve their own programs. This in turn will help to best prepare teachers to minimize the effects of at-risk behaviors and conditions in the classroom, which in turn, facilitates reduction of misplacements into special education and increases more effective culturally competent teaching for all immigrant students, including those with special needs.

Research Project

Based on current educational at-risk needs along with recommendations from previous research discussed above, we are seeking to better understand contemporary higher education practices, issues, and concerns associated with the preparation of graduate level special education teachers to effectively educate the ever-increasing immigrant student population.

Research Questions

The primary research question for this study is: To what extent do graduate special education teacher preparation programs address immigrants with special needs both in courses and/or field experience? Specific questions addressed in this research include:

1.) To what extent do graduate-level teacher preparation programs emphasize preparing special educators for work with immigrant students with special needs?

2.) Do specific school and graduate program types correlate with a greater emphasis placed on one or more training areas for work with immigrant students with special needs?

3.) Does the graduate-level special education teacher preparation for work with immigrants with special needs vary significantly across states with high populations of immigrant learners?

4.) To what extent is field experience with immigrant students at-risk and/or those with special needs incorporated into the graduate level training?

5.) In which types of courses is content for teaching immigrant students with special needs most frequently found?

Survey Development/Distribution

The survey developed for this study includes items evaluating selected knowledge and skill areas necessary to effectively educate immigrant students with special needs. A survey comprised of Likert items, grouped within selected categories modeled after CEC NCATE Professional Competencies (CEC, 1998) was developed. The categories included: Foundations/Characteristics, Individual Learning Differences, Instructional Strategies/ Learning Environments, Communication, Teaching/Instructional Planning, Assessment, and Collaboration.

Specific items were generated reflecting these training areas from information found in the 2001 Harvard Education Review Special Issue: Immigration and Education as well as from Smith-Davis, (2000), Rong and Prissle (1998) and various CEC NCATE documents reflecting training competencies. The survey was initially reviewed by several experts in teacher training for clarity and accuracy of content, and for the extent to which the items reflected the general training areas (e.g., Foundations, Assessment, Collaboration etc). Based on the reviewer feedback the survey was revised to include 40 items within the seven competency training areas as illustrated in Table 1.

Table 1: Survey Items within each Competency Training Area

Foundations/Characteristics

- Over representation of immigrant students in special education
  Acculturation needs of immigrant learners
- Diversity of views that different cultures hold towards disabilities
- Understand similarities and differences between homeland and school cultures
- Role of cultural values in the education of immigrant students
- Knowledge of the impact on immigrant students moving from one society to another
- Educational characteristics of immigrant students with special needs

Individual Learning Differences

- Language difference versus learning disability
- Social barriers confronting immigrant learners
- Academic barriers confronting immigrant learners
- Language barriers confronting immigrant learners
- Experiential background barriers confronting immigrant learners
- Cultural awareness and diversity in the classroom
- Determining differences between expected behaviors due to cultural/linguistic needs versus behavior disorders due to a disability

Instructional Strategies/Learning Environments

- Meeting instructional needs of immigrant students appropriately placed in special education
- Culturally relevant classroom instruction
- Teaching methods specific to meeting unique needs of immigrant learners
- ESL instruction
- Native language instructional methods

Communication

- Cross-cultural communication skills
- Models for assisting immigrant students to successfully acquire English language skills
- Use of instructional conversational strategies

Teaching/Instructional Planning

- Meeting second language needs of immigrant students
- Language and literacy instruction across the curriculum
- Contextualized teaching and learning
- Cultural competence in teaching
- Use of cooperative learning communities in the classroom
- Addressing post-traumatic stress in immigrant students

Assessment

- Pre-referral issues specific to at-risk immigrant students
- Cross cultural assessment
- Classroom-based informal assessments
- Curriculum-based assessment
- Use of translators/interpreters in the special education referral/assessment process
- Language Assessment
- Diagnostic academic assessment for immigrant learners
- Diagnostic social/emotional/behavioral assessment for immigrant learners

Collaboration

- Community resource support for immigrant families
- Collaboration with other educators in teaching immigrant students
- Working with parents of immigrant learners
- Advocate for needs of immigrant learners

Respondents indicated the level of preparation their special education Masters Program places on each item as it pertains to preparing special educators for work with immigrant students with special needs (1 = None; 2 = Limited; 3 = Moderate; 4 = Extensive). Also, respondents indicated whether Field Experience was included in the training for each item. Reliability (Cronbach's Alpha) was determined for the survey and was found to be .968.

In order to ensure anonymity of the schools in our database, we numbered the surveys by institution. In addition to the 40 survey items, the instrument gathered various demographic information including: Size and location of institution; CEC NCATE accredited (y/n); type of degrees offered (MA only or MA and Doctoral); number of faculty in the school of education/special education departments; number of MA graduates in special education annually; and percent of immigrant special education students in the school districts where graduates teach. The survey also requested the titles or types of courses in which the surveyed knowledge/skills were most taught. The survey was sent to chairpersons in the department of special education at the selected graduate training programs and included two follow-up mailings.

Sample

Graduate Training Program Selection

In effort to gather information about the potential training of Master's level students in special education programs for work with immigrant students with special needs, we first determined the states with a significant percentage of Pre K-12 English language learners (ELL) and immigrants by examining the list of states from Kindler's 2002 National Clearinghouse for English Language Acquisition report as well as Baca & Cervantes (2004). Based on these sources, we selected nine states with significant ELL and immigrant populations: Arizona, California, Colorado, Florida, Illinois, Nevada, New York, New Mexico and Texas. We then used the National Clearinghouse for Professions in Special Education (NCPSE) database cross-referenced with the U.S. Department of Education, Office of Special Education Programs National Center for Special Education Personnel & Related Service Providers database to locate all of the Institutes of Higher Education granting masters level degrees in Special Education in each of the nine listed states. The search yielded contact information for 193 schools with masters level special education programs in the selected nine states. These programs received the survey for participation in this research.

Results

Research yielded a 40% response rate in which seventy-nine institutions returned the survey. Four of the 79 respondents reported that they no longer had graduate special education programs; therefore a total of 75 graduate level programs out of a possible 188 are included in these analyses. Using selected demographics, survey responses were tabulated and analyzed in a variety of ways to best understand the current training of graduate level teachers for work with immigrant students with special needs. The following Tables summarize data collected reflective of our five primary research questions.

Research Question 1: To what extent do graduate-level teacher preparation programs emphasize preparing special educators for work with immigrant students with special needs?

Table 2 provides the total survey means reflecting the reported emphasis by graduate level preparation programs:

Table 2: Mean Scores of Competencies by CEC/NCATE Accreditation

Competency Subscale	NCATE & CEC Accredited	Non NCATE/CEC Accredited
Foundations/Characteristics	2.58	2.74
Individual Learning Differences	2.80	2.89
Instructional Strategies/ Learning Environments	2.73	2.82
Communication	2.49	2.63
Teaching/Instructional Planning	2.86	2.94
Assessment	2.96	2.99
Collaboration	2.43	2.64
Total Survey	**2.71**	**2.86**

Scale: 1-4: 1 = None; 2 = Limited; 3 = Moderate; 4 = Extensive

Scale: 1-4: 1 = None; 2 = Limited; 3 = Moderate; 4 = Extensive

As shown, the range of emphasis is from a low of 2.53 (Collaboration) to a high of 2.97 (Assessment). All means fell within the Limited to low-Moderate area of emphasis.

Tables 3, 4 and 5 provide a summary of the training area means broken down by whether or not the program operates with CEC/NCATE accreditation, by level of degree offered (MA Only; MA/Doctoral), and by size.

Table 3: Mean Scores of Competencies by CEC/NCATE Accreditation

Competency Subscale	Total Mean
Foundations/Characteristics	2.66
Individual Learning Differences	2.85
Instructional Strategies/ Learning Environments	2.78
Communication	2.56
Teaching/Instructional Planning	2.90
Assessment	2.97
Collaboration	2.53
Total Survey	**2.78**

Scale: 1-4: 1 = None; 2 = Limited; 3 = Moderate; 4 = Extensive

As shown, the overall average is 2.71 and 2.86 for NCATE accredited and those not NCATE accredited, respectively. The highest mean score for CEC/NCATE accredited schools was in Assessment (2.96) and the lowest mean score was in Collaboration (2.43). The highest mean scores for non-CEC/NCATE accredited schools were in Teaching/Instructional Planning and Assessment (2.94) and the lowest mean score was in Communication (2.63).

Table 4: Mean Scores of Competencies by Type of Degree Granting Program

Competency Subscale	MA + Doctoral	MA Only
Foundations/Characteristics	2.70	2.65
Individual Learning Differences	2.86	2.85
Instructional Strategies/ Learning Environments	2.65	2.80
Communication	2.28	2.62
Teaching/Instructional Planning	2.81	2.91
Assessment	2.99	2.97
Collaboration	2.56	2.53
Total Survey	**2.74**	**2.79**

Scale: 1-4: 1 = None; 2 = Limited; 3 = Moderate; 4 = Extensive

Table 4 shows that the overall average is 2.74 and 2.79 for MA/Doctoral and MA Only degree programs, respectively. The highest mean score for both types of programs was in Assessment (2.99; 2.97) while the lowest rated was Collaboration for each type of program (2.56; 2.53).

Table 5 illustrates mean scores by institution size.

Table 5: Mean Scores of Competencies by Size of Institution

Competency Subscale	*1-Mean*	*2-Mean*	*3-Mean*	*4-Mean*
Foundations/Characteristics	2.56	2.78	2.63	2.68
Individual Learning Differences	2.73	2.83	3.01	2.81
Instructional Strategies/ Learning Environments	2.80	2.74	2.79	2.76
Communication	2.48	2.62	2.55	2.62
Teaching/Instructional Planning	2.82	2.95	3.02	2.81
Assessment	2.92	3.07	2.89	3.09
Collaboration	2.46	2.68	2.44	2.57
Total Survey	2.73	2.87	2.74	2.79

1 = up to 4999; 2 = 5000-9999; 3 = 10,000-19,999; 4 = 20,000 above
Scale: 1-4: 1 = None; 2 = Limited; 3 = Moderate; 4 = Extensive

As shown, the overall emphasis based on size was consistent, ranging from Limited to Moderate emphasis for each training area. Assessment received the greatest emphasis in three of the four size breakdowns, while Collaboration received the lowest rating in three of four school sizes.

In addition, comparisons were made both across school types as well as within school types using ANOVA and correlational statistical procedures. Results comparing emphasis on training areas between CEC/NCATE and non-NCATE accredited schools showed no significant difference in reported emphasis. Similar results were found when comparisons were made between MA Only and MA/Doctoral programs.

To further understand within program or school type, ANOVA was conducted to determine if one or more training areas are emphasized relative to accreditation and level of degree offered. Results showed no significant variation in emphasis on training areas within non-NCATE schools or within MA/Doctoral degree granting programs. However, differences were observed within CEC/NCATE accredited programs and MA Only programs as illustrated in Tables 6 and 7.

Table 6: ANOVA of school means within 7 categories for NCATE/CEC schools

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.756	6	1.459	3.889	.001
Within Groups	94.199	251	.375		
Total	102.955	257			

Table 7: ANOVA of school means within 7 categories for MA Only schools

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.165	6	1.694	4.316	.000
Within Groups	163.298	416	.393		
Total	173.463	422			

As shown, a significant difference between reported emphasis on one or more training areas was found. The Tukey Multiple Comparison Test was employed to determine those training areas with significantly more emphasis within each type of school/program. Tables 8 and 9 illustrate these findings.

Table 8: Multiple Comparison Test Results comparing Seven Training Areas within CEC/NCATE Accredited Programs

Compared Training Areas	Mean Difference	Significance
Teaching/Instructional Planning with Collaboration	.43	.046
Assessment with Foundations/ Characteristics	.48	.017
Assessment with Collaboration	.54	.004

The training area of Assessment is emphasized to significantly greater extent in CEC/NCATE accredited schools over two of the other training areas, including Collaboration.

Table 9: Multiple Comparison Test Results Comparing Seven Training Areas within MA Only Programs

Compared Training Areas	Mean Difference	Significance
Teaching/Instructional Planning with Collaboration	.39	.013
Assessment with Foundations	.36	.027
Assessment with Individual Learning Differences	.34	.043
Assessment with Collaboration/ Professional	.46	.001

As shown, the training area of assessment is emphasized to greater extent in MA Only programs over three of the other training areas, including collaboration.

Research Question 2: Do specific school and graduate program types correlate with a greater emphasis placed one or more training areas for work with immigrant students with special needs?

Correlations were conducted relative to emphasis on training areas and various demographics. Results showed no significant relationship between various program characteristics (i.e., size, state, etc) and emphasis on one or more of the training areas. This finding is consistent with the other findings in this study.

Research Question 3: Does the graduate-level special education teacher preparation for work with immigrants with special needs vary significantly by state? Data were also tabulated relative to each state selected for this project. Table 10 provides the range of emphasis in the training areas by state.

Table 10: Training Areas Receiving the Lowest/Highest Emphasis in each State

State	Lowest	/	Highest Emphasis Areas (Means)
AZ	Collaboration (2.00)	/	Instructional Learning Differences (2.71)
CA	Collaboration (2.68)	/	Assessment (3.19)
CO	Collaboration (2.80)	/	Assessment (3.10)
FL	Collaboration (2.67)	/	Communication (2.94)
IL	Communication (2.29)	/	Assessment (2.90)
NM	Communication (2.60)	/	Instructional Learning Differences (3.11)
NV	Communication (1.33)	/	Teaching/Instructional Planning (3.17)
NY	Collaboration (2.21)	/	Teaching /Instructional Planning (2.82)
TX	Collaboration (2.58)	/	Individual Learning Differences (3.06)

(Scale: 1-4 = None; 2 = Limited; 3 = Moderate; 4 = Extensive)

As shown, the training area of Collaboration received the lowest emphasis in most states while Assessment, Instructional Learning Differences, and Teaching/Instructional Planning received the greatest emphasis.

Research Question 4: To what extent is field experience with immigrant students at-risk and/or those with special needs incorporated into the graduate level training?

Programs were asked to indicate if fieldwork was a component in their training of educators in each of the seven training areas. Table 11 provides the percent of schools that indicated that fieldwork was incorporated into preparation in the training area.

Table 11: Extent to which fieldwork is completed as a component in each training area.

Training Area	Percent of Schools Requiring Field Work
Foundations/Characteristics	10%
Individual Learning Differences	14%
Instructional Strategies/ Learning Environments	26%
Communication	15%
Teaching/Instructional Planning	23%
Assessment	22%
Collaboration	13%

As shown, fieldwork is incorporated into training for work with immigrant special education students in all training areas. Fieldwork is most used to assist with the development of Instructional Strategies/Learning Environments and least in the area of Collaboration.

Research Question 5: In which types of courses is content for learning about teaching immigrant special education students most frequently found? The most frequent types of courses identified by the schools for teaching about immigrant special education issues and skills are:

1.) Introduction or Foundations of special education

2.) Methods

3.) Assessment

4.) Parent/family/community related course

5.) Ed psych/child development

The courses are listed in order of frequency as indicated by all responding graduate programs. Also, as shown, issues pertaining to immigrant special education are included in a variety of classes including both theory and practical application courses. The Introduction or Foundations classes are the courses that contain coverage of immigrant special education topics in most programs followed by Methods and Assessment classes.

Discussion

Results from our study suggest that graduate level special education teacher preparation programs place a consistent amount of emphasis on similar important training competencies for work with immigrant students with special needs. Overall, graduate level teachers appear to receive similar emphasis in their immigrant special education training regardless of school size, state in which they attend school, accreditation status or type of degree offered (i.e., MA Only; MA and Doctoral Degree). In addition, preparation for immigrant special education appears to reflect consistent emphasis within training areas. That is, the competency area of Assessment was rated higher in most programs regardless of demographic or NCATE accreditation status. Similarly, the training area of Collaboration was consistently ranked as receiving the least amount of emphasis in most of the surveyed graduate level training programs.

While the programs reported similar results for the different competency areas, they also reported only limited to moderate emphasis in most areas. Assessment was more significantly emphasized over two or more of the other six that fell within the high moderate to extensive training emphasis. With a few exceptions, this may reflect a balanced effort in teacher preparation or a belief that most of these competencies are of similar importance to teachers of immigrant students with special needs. When we considered the extent to which similar types of programs placed emphasis on the training areas within their own programs, we found that the area of assessment is considered a most important competency area in most programs. This highlights the perceived significance and importance of assessment when used with immigrant students who may have special needs. Conversely, within-school comparisons showed that the area of Collaboration was emphasized significantly less than two or more of the other training areas. This finding requires further investigation since skills associated with collaboration are critical to effectively educate immigrant students, particularly as more and more districts employ response to intervention practices within multi-tiered instructional frameworks. Furthermore, our findings provide evidence that supports Dylan, Schwartz, and Steifel (2007) in that potential barriers to parent involvement in schooling may prevent parents from advocating for their children's needs regarding special education. If collaboration is not an area that is adequately emphasized in teacher

training programs, the consequences may ultimately be inappropriate education (either in or out of special education) due to lack of collaborative efforts with parents of immigrants students.

A useful strategy in the analysis of survey results relates to identification of 'hard' and 'easy' items. Hard items are those consistently rated lower while easy items are those receiving consistently high ratings from respondents. Our analysis of the top ten hard and easy items yielded interesting results as shown below:

Item Difficulty

Hard items (on average schools scored themselves lowest on the below items):

20. Addressing post-traumatic stress
40. Native language instructional methods
33. Impact of moving from one society to another
13. Community resource support for immigrant families
32. Use of translators/interpreters in special education
25. Similarities/differences between homeland and school cultures
36. Models to successfully acquire English language skills
21. Use of instructional conversational strategies
38. Advocate for needs of immigrant learners
19. Teaching methods to meet unique needs of immigrant learners

Easy Items (on average schools scored themselves highest on the below items):

27. Classroom-based informal assessments
22. Curriculum-based assessment
4. Meeting Instructional needs
24. Diagnostic academic assessment
28. Use of cooperative learning communities in the classroom
31. Cultural awareness and diversity in the classroom
6. Language and literacy instruction across the curriculum
3. Language difference versus learning disability
9. Culturally relevant classroom instruction
29. Diagnostic social/emotional/behavioral assessment

The ten hard and easy items identified are listed in order of average response by all respondents (i.e., Item 20 was rated the lowest on average by respondents, while Item 27 was collectively rated the highest). Careful review of these items clearly shows that many of the highest or easy rated items are those associated with assessment and classroom instructional practices typically appropriate for most learners with special needs (e.g., Curriculum-based assessment, cooperative learning). Those rated the lowest (hard) are more specific to individual needs often directly associated with immigrant students (e.g., post-traumatic stress, Native language instruction, community resource support for immigrant families). This suggests that graduate level teacher preparation provides general training to meet immigrant special education needs but does not provide necessary specific training to meet unique needs of these students.

Also, a surprising finding was the low ranking of two items frequently suggested by bilingual special educators as necessary for teaching English language learners, which includes many immigrant

students. These include models of native language instruction and models of English language development. Both of these items appeared on the "hard item list" and ranked number 2 for native language instruction and 7 for English language development. Two possible explanations that may account for these low ratings include: 1) this study was framed as an immigrant special education study and not an English Language Learner in Special Education study; and, 2) the fact that even though the survey was sent to the nine states with the highest number of immigrant and ELL students and the highest number of bilingual special education training programs, only a few bilingual special education training programs exist in these states as well as across the country. This may account, in part, for the lower ratings on the emphasis on native language instruction.

In regards to types of courses in which immigrant special education issues and practices are most frequently discussed these varied by programs but consistently appeared to be in introduction, methods and assessment classes. Also, fieldwork is considered an integral component in the training of graduate level teachers to meet immigrant special education needs. In addition, the training areas with the most fieldwork correspond with the degree of emphasis. Each of the competency areas of Instructional Strategies, Assessment and Instructional Planning were reported to have associated field experiences in almost one-quarter of the responding graduate level programs. These were also the three training areas that were rated as having the most emphasis in the programs. Conversely, the competency area of Collaboration in meeting immigrant special education needs received the lowest rated emphasis in most programs and also had the lowest amount of associated field experience.

Although more research is needed beyond the self-reported data we collected in this study, we are able to draw several important conclusions:

1.) Graduate level programs in states with high populations of immigrant students provide limited to moderated training to meet specific immigrant special education needs with no states, on average, providing extensive graduate preparation.

2.) Competency training areas that received the greatest emphasis also have the largest amount of field experiences, while those receiving the lower emphasis had lower amounts of associated field experiences.

3.) Issues highly specific to the needs of immigrant learners (e.g., prost-traumatic stress; acculturation) are the least emphasized aspects of graduate level preparation while aspects typically associated with education of all learners with special needs (e.g., curriculum-based measurement) received greater emphasis.

Overall, results allow us to conclude that training programs are providing preparation in various important competency areas; competencies that are appropriate for effectively educating immigrant as well as other learners with special needs.

Limitations/Generalizations

This research is limited in two important ways. First, the response rate from the graduate schools is 40%, which is minimally acceptable, and results must be generalized with this in mind. Second, the study is limited to the current knowledge and expertise of those completing the survey. Efforts to identify possible explanations for the lower return rate indicated that some of those not returning the survey did know how and in what ways immigrant special education issues were addressed in their programs; thus, being unable to adequately complete the survey. This is an important finding, in and of

itself, since the growth of immigrant special education populations in our classroom settings will clearly impact teacher preparation programs. Therefore, results from this study may assist other programs to further clarify the extent to which their programs emphasize specific training competency areas to meet teacher preparation needs for work with immigrant at-risk or those with special needs. This, in turn, also becomes important should follow-up work with these programs be completed.

Implications for Special Education Teacher Preparation

Based on the results and conclusions from this study several research issues emerge and require additional study:

1.) How might needs unique to immigrant students be best incorporated into graduate level teacher preparation?

2.) Collaboration is an essential skill in working with immigrant students with special needs. In effort to assist parents in advocating for their children's educational needs, collaboration must be addressed in more in-depth ways in teacher preparation. How might training programs improve their education by providing additional emphasis on collaborative skills?

3.) What are current school district assessment and instructional policies concerning the education of immigrant learners at-risk or those with special needs, and how do these compare with training that educators receive in our special education preparation programs?

4.) How are instructional practices emphasized in our graduate level preparation programs applied or used with immigrant students with special needs in fieldwork assignments (e.g., curriculum-based measurement, cooperative learning)? And, in what ways are these effective with these learners?

Additional research and study, including a follow up study to this project, will help to further clarify the linkage between school district policy, classroom instruction, and teacher preparation for work with immigrant learners with special needs. Results from this study provide an initial understanding of special education graduate level preparation, from which other programs may build or expand upon, as they further advance their efforts to meet the unique needs of immigrant students at-risk or those with special needs in our school systems nationwide.

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Special Education Editorial: Autism Should Be a Singular Discipline for Undergraduate Study

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Abstract

Given its pervasive nature and the amount of knowledge required to appropriately address the individual needs of children on the Autism Spectrum, professionals who assist in treating this disorder medically and educationally should have more than a certificate. This area of study should be a complete college Major, with course outlines specific to the disorder, the research behind them and the options available to support the multitude of complications and complexities relative thereto.

Autism Should Be a Singular Discipline for Undergraduate Study

Research in Autism Spectrum Disorders is a burgeoning field, with special interest groups and university specialists promulgating its exposure. However, for any professional in the field working with this population, it is more than likely that their background is in Psychology, Special Education or Applied Behavioral Analysis – there is not currently an Autism Major. Thus the creative stitch-work of universities results in a blanket overview of therapies that can be used to treat Autism and some educative practices that would be effective measures for Special Education programs. Even pediatricians who are certified DAN (Defeat Autism Now!) doctors receive only a seminar, subsequently qualifying them as Autism Specialists. This is not the case for cardiologists, thoracic surgeons or chiropractors, why should it be for a disintegrative disorder like ASD?

Post graduation, it is up to the individuals to read the research and apply the methods in their practice, as is typical for professional development endeavors. However, this type of individualized study coupled with a solid university-bred concept of a pervasive and broad disorder would be substantially more effective. If research has come this far without the study operating as its own major at any university, this position serves to indicate a dramatic increase in the quality of how children with ASD are taught and treated medically when such an introduction at the undergraduate level exists.

Explication

Teaching children with disabilities is a rewarding and valuable career. Special Education Teacher certifications in the United States have grown to cover the wide range of abilities, disabilities, exceptionalities and pedagogical strategies to effectively run an inclusive or self-contained classroom.

Undergraduate students participate in coursework boasting 10-page syllabi, credentialed maximally with names like Piaget, Vygotsky, Levine and Wiggins. Autism might appear as one to three courses, or perhaps even stand as a separate certificate at schools like Gwynedd-Marcy College or Penn State University. But not all professionals take advantage of these offerings, and not all coursework is built

the same, begging the question, is it enough? Does this deserve a more thorough investigation into a complex mind that learns differently from typical minds, differently from children with Down Syndrome, differently from other children with the same diagnosis?

The research alone substantiates the answer to that question. It is not currently enough, and thus, the epidemic continues, schools continue to run without appropriately certified teachers and children continue to struggle with how to evaporate the cloudiness of a mind consumed by itself, how to come out, and how to let others in.

Undergraduates who maintain the intellectual fortitude to know exactly what they want to do should be offered the opportunity to specialize early. Not all pediatricians want to only perform physicals on healthy kids, not all Special Education teachers want to work in public schools and not all ABA therapists want to baby-sit in regular education classrooms 'in case something happens.'

The Other Side of the Argument

Oppositional accoutrements to this position include how to fund these programs and why other disabilities shouldn't be given the same attention.

Funding: Though costly in its initial stages, financing an opportunity that will likely reduce the cost of and need for supplementary programs will prove more logical. Tuition-charging universities should not balk at this type of inset, as it will generate more interest.

Special Education programs have been successful in educating children with all types of disabilities, so why is a change necessary?

Down Syndrome is currently genetically identifiable and has consistent features in most individuals with this disability. While there are variations in personalities – as with any single human being – the education of these individuals is far more lucid than for those with Autism.

ADD & ADHD are both easily identified the more that research has provided for professionals and parents (fidgeting, daydreaming, exhibits high intellect but low performance, etc). Since this rarely indicates a deficit in a child's capacity to learn but rather how the child's behavior and tendencies can affect learning, small measures can be easily inserted into a teacher's management and differentiated instruction implementation.

Yet...

Speech and Language Delays are most commonly treated by Speech Pathologists and sometimes Reading Specialists. Both professionals are specifically trained to treat these types of problems. This indicates narrowly focused education for the purpose of identifying and rectifying similar issues in learning acquisition – another consideration on the part of Autism as a major.

What will this look like educationally?

General Education Requirements, peculiar to individual universities, usually comprise 3-4 semesters-worth of work in Art, Science, English, basic Psychology, Mathematics, History and sometimes Foreign Language. After completion of Gen Ed's, a sample of what could follow:

Education Requirements for Autism Education, Teaching Certification – OR—Autism Therapy

Exercise Physiology……..	How the brain responds to exercise	3
Abnormal Psychology I……..	Instances and indications	3
Abnormal Psychology II…….	Treating and educating a non-typical mind	3
Autism Spectrum Disorders I…….	Identification/Diagnosis: the features of Autism	3
Autism Spectrum Disorders II……	Theory and practice of treatment options	3
Autism Spectrum Disorders III……..	Diet and Exercise for Children with ASD	3
Autism Spectrum Disorders IV……..	Abilities, Disabilities and Classroom Strategies	3
Autism and Siblings……..	How siblings can help and hinder the advancement of children with ASD	1
Applied Behavioral Analysis……..	Background and Practicum with tutoring student	3
Methods and Materials……..	Teaching children with Autism Practicum in Special Education classroom (observation)	4
Socialization…….	Promoting eye contact & social awareness	2
Play Therapy and Sensory Integration Models….	Snoezelen methods and other features of play therapy	2
Math for Children with disabilities…….	Methods course in Math – using manipulatives	3
Science……..	Methods course	3
Reading and Literacy I……..	Background and philosophy	3
Reading and Literacy II –	Creative ways to use books in the classroom	4
OR—		
Book Therapy……	Therapists and Doctors use books for success	
Social Studies	-Using books and art to teach history (visual learning)	3
-- OR --		
Art Therapy in the Doctor's office……	-Therapists and Doctors use Art therapy to engage children	

Assessments and Evaluations -- OR -- Writing Analyses……..	How to effectively plan and assess for children with Autism --OR— How to write effective analyses to promote advancement	3
Autism Research Project……..	Investigate current research on Autism and write a position paper.	3
Student Teaching Practice I……..	7 weeks in-class practicum*	4
Students Teaching Practice II……	7 weeks in-class practicum*	4

Any methods course can be replaced with the typical education equivalent, provided lessons are constructed with regard to how children with ASD learn. Autism Therapy students may exchange methods courses for Occupational Therapy, ABA or Psychology courses.

All practical experiences will be monitored and advised by a professor. Students are responsible for their transportation to and from the location.

* Teaching certification only. Pre-medical and therapy students will perform a different, advisor-chosen practicum or internship.

Elective courses would include:

- Psychology Courses
- Physical Education or Physical Therapy Courses
- Education Courses
- Art Therapy or Art Education Courses

Suggesting Reading Materials:

1.) Ellen Notbohm. Ten Things Your Student with Autism Wishes You Knew. October 2006.

2.) Leslie V. Sinclair. Autism Spectrum Disorder: A Supplemental Curriculum for Life's Lessons. June 2008.

3.) Ellen Sabin. The Autism Acceptance Book: Being a Friend to Someone with Autism. March 2006.

4.) John J. Ratey and Eric Hagerman. Spark. January 2008.

5.) Lisa Lewis. Special Diets for Special People: Understanding and Implementing the GFCF Diet to Aid in the Treatment of Autism and Related Developmental Disorders. August 2005.

6.) The Healing Project. Voices of Autism: The Healing Companion: Stories of Courage, Comfort and Strength. June 2008.

After completing the minimum number of university credits, including General Education requirements, students will be eligible for graduation. The degree will be either a Bachelor of Autism Education with Teacher Certification or Autism Therapy.

PRAXIS tests will be required for certification completion according to state licensure prerequisites.

Conclusion

While Special Education Degrees are wonderful for inclusive and self-contained programs addressing a wide variety of needs, they are not specific enough to significantly impact the learning of children with ASD [unless an individual performs a large amount of independent research on Autism]. The programs that are available for certificates in Autism offer an immediate solution to a growing problem, but are not currently mandated for entrance into the field.

Placing strict emphasis on the disorder at the undergraduate level, with implications for research and development, will improve the chances that this disorder decreases in reach and that more causes are soon identified. Preparing teachers, therapists and doctors with this advanced process for specialization will improve the quality of treatment children with ASD receive in school, at home and medically.

Cooperation from Public and Special Education schools will be necessary in recruiting individuals to this major. Positive economic forecasts and appropriate compensation will ensure that graduates from this field, when highly qualified, will be attracted to these positions. Such salary and benefits should be commensurate with a Bachelor of Education and reflective of the economic resources of a geographic area.

Later, a Post-baccalaureate option for individuals already possessing a Bachelor of Education or Special education should be made available. Further, a Graduate option for professionals in the field who wish to specialize should be arranged by professors of the undergraduate program(s).

No Child Left Behind: Implications for Special Education Students and Students with Limited English Proficiency

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The No Child Left Behind (NCLB) Act was passed by Congress with overwhelming bi-partisan support and signed into law by President George Bush in January 8, 2002. The expressed long-term goal of NCLB is proficiency in reading and math for all students by the 2013-2014 school year. The law identifies specific steps that states, school districts, and schools must take to reach that goal. Each state has been required to develop and administer annual assessments in grades 3 through 8 in reading and math and once in grades 9 through 12.

The states also have been required to develop an accountability system that includes a single definition of "adequate yearly progress." This definition includes annual targets for academic achievement, participation in assessments, graduation rates for high schools, and for at least one other academic indicator for elementary and middle schools. The targets must be applied to the major racial and ethnic groups, the economically disadvantaged, special education students, and students with limited English proficiency.

For schools that fail to make achievement targets for two consecutive years a series of progressively stringent consequences will be implemented as follows:

2 YEARS — The school becomes labeled "in need of improvement," and must allow its students to choose another school in the district.

3 YEARS — The school must provide students supplemental services, such as additional tutoring and remedial services usually in reading and math.

4 YEARS — The school must replace school staff, institute a new curriculum, extend the school year or school day, or restructure the internal organization.

5 YEARS — The school must reopen as a charter school, replace all or most of the staff, enter into a contract with an entity such as a private management company, turn over operations to the state or undergo major restructuring.

Opposing Viewpoint on NCLB

Since its passage, NCLB has been criticized for a number of reasons. One of the criticisms is that it is unfair to include special education students and students with limited English proficiency in the accountability system and judge them by the same standard used for all other students. In the past, special education students and students with limited English proficiency were often excluded from high-stakes, large-scale assessment because educators believed it was not in the best interest of students

to take the tests. For many opponents of the law, it makes no sense to expect students in these groups to perform and progress at the same level as other students.

Proponents of NCLB counter that the law was designed to ensure that students in subgroups with low percentages of students meeting standards would receive attention in schools. Recently, educators have become concerned that excluding students from testing may be harmful to students because it allows their needs to remain unknown and un addressed. Students who are not tested often do not get the services they need to help improve their academic achievement. Many education researchers and policy makers now believe that special education students and LEP students should be included in the assessments to the maximum extent practical so that the needs of those students are not ignored.

Revised NCLB Regulations

As the debate continues regarding the fairness of NCLB with respect to special education students and students with limited English proficiency, the U.S. Department of Education issued new regulations pertaining to these subgroups. In December, 2003, regulations were changed for testing special education students. Those changes were followed by revised policies for LEP students in February, 2004.

Under the regulations issued pertaining to special education students, states and districts can develop alternate assessments and use them to test special education students who cannot take the grade-level tests even with accommodations. However, only up to 1 percent of students in the grade levels tested can take tests based on alternative achievement standards and have their scores counted for meeting the federal mandate of showing "adequate yearly progress."

If states exceed the 1 percent cap, they must decide which "proficient" scores of students who took the alternate assessments to count as proficient for purposes of "adequate yearly progress" and which to count as not proficient. States can apply to the Department of Education, and districts can apply to their states, to exceed the 1 percent cap, if they can demonstrate that they have larger populations of students with the most significant cognitive disabilities and have effectively designed and implemented assessment practices for students with disabilities.

There were two major rule changes for students with limited English proficiency. The first rule change says that schools are no longer required to give students with limited English proficiency their state's reading test is such students have been enrolled in a U.S. school for less than a year. Schools are still required to give those students the state's mathematics test, but they may substitute an English-proficiency test for the reading test during the first year of enrollment.

As was the case before this change, states have a one-year grace period before they must include scores of students with limited English proficiency in the calculations for adequate yearly progress. The second rule change permits states to count students who have become proficient in English within the past two years in their calculations of adequate yearly progress.

According to the U.S. Department of Education, there are 5 million special education students and 5.5 million students with limited English proficiency in U.S. public schools. It is likely that accountability for the academic achievement of these two subgroups will diminish in the future. Irrespective concerns about the negative of effects of testing these two groups of students, data from state assessments such as the Washington Assessment of Student Learning show that each year more special education

students and students with limited English proficiency are meeting state standards than in previous years.

Table 1 below shows an increasing positive trend for the reading achievement of fourth grade students overall for all students as well as special education students and students with limited English proficiency. Despite these promising results, though, it is unclear how realistic such improvements can be expected to continue over time.

Table 1: Percent of Fourth Grade Students Meeting State Reading Standard in Washington State

	2000	2001	2002	2003	2004
All Students	66	66	66	67	74
Special Education Students	27	29	30	31	39
Students with Limited English Proficiency	21	24	25	24	37

Promising Practices for Increasing Test Performance

As pressure to make adequate yearly progress increases, educators continue to seek practical ways for increasing the numbers of students who achieve proficiency in reading and math. Two strategies that appear to hold promise in this effort are (1) improving the quality of implementing test accommodations permitted for use by special education students and students with limited English proficiency; and (2) enhancing their test wiseness.

For several years, I have worked with principals, teachers, and students to implement a program of test preparation that focuses on improving the selection and use of test accommodations and test preparation. The program was initiated on the basis of two assumptions that have been supported in the research literature:

1.) Special education students receiving accommodations outperform on average special education students receiving no accommodations (Johnson et al., 2001).

2.) Students who receive instruction in test-taking strategies can perform better on tests than peers who have not received the instruction (Chittooran & Miles, 2001).

A series of teacher training sessions have been presented to translate these research findings into practice. First, training was provided for teachers in effective decision making about whether to provide, and how to best administer test accommodations. The training emphasized the use of the least intrusive accommodations; ensuring the alignment of instructional and assessment accommodations; providing appropriate training to those who administer accommodations; as well as monitoring the effects of accommodations for individual students. These topics have previously been suggested by Bolt and Thurlow (2004).

Second, teacher training was provided for teachers to implement five types of test wiseness practices identified by Miyasaka (2000) that help students more fully demonstrate their knowledge and skills on high-stakes tests. These include (a) teaching the content domain, (b) using a variety of assessment approaches and formats, (c) teaching time management skills, (d) fostering student motivation, and (e) reducing test anxiety.

Preliminary results for a district in which a systematic approach to test accommodations and test wiseness has been conducted are shown in Table 2 below. These results can be contrasted with results in Table 1 for students statewide where no such similar efforts have occurred. A comparison of the demographics of the state and district is also provided for further analysis in Table 3.

As can be seen, the reading scores for fourth-grade students in the district exceed state scores for all students as well as special education students and students with limited English proficiency. There are many complex factors that contribute to differences in results for the two groups of students. Indeed, one must be careful in interpreting the results. Nevertheless, the results suggest a possible basis for more rigorous investigation in the future.

Table 2: Percent of Fourth Grade Students Meeting State Reading Standard in Federal Way Public Schools

	2000	2001	2002	2003	2004
All Students	67	66	72	73	82
Special Education Students	22	17	38	41	45
Students with Limited English Proficiency		29	38	29	51

Table 3: Demographics of State and District Based in 2002-03 School Year Washington State Federal Way School District

	Washington State	Federal Way School District
Total Enrollment	1,015,968	22,449
American Indian/Alaskan Native	2.70%	1.50%
Asian or Pacific Islander	7.60%	16.20%
Black	5.60%	12.60%
Hispanic	11.60%	10.20%
White	72.50%	59.60%
Free/Reduced Price Meals	35.6	34.80%
Special Education	11.70%	11.90%
Limited English Proficient	6.50%	8.40%

Conclusion

As standardized testing has taken on increasing importance in the evaluation of students, teachers, and schools, so too has the preparation of students to take these tests. Clearly, the best way to prepare students for tests is to teach them the content. Moreover, schools need to ensure that special education students and students with limited English proficiency receive the appropriate accommodations permitted by the test. In addition, students need to receive instruction in appropriate test taking strategies that will help improve test performance and reduce test anxiety.

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Cultural Identity and Special Education Teachers

Have We Slept Away Our Ethical Responsibilities?

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Abstract

All teachers play a pivotal role, if not the most important role, in the success or failure of culturally and linguistically diverse children, but most importantly in the field of special education as overrepresentation of these children continues to grow. We believe that those teachers who are aware of their own ethnic identity are better prepared to work with children from culturally and linguistically diverse backgrounds. Consequently, it is our contention that the knowing of one's ethnic identity is an ethical issue for special education teachers as they attempt to understand the lives of those children who differ from themselves. This paper explores the notion of cultural and ethnic identity and its relationship to the special education teacher.

Cultural Identity and Special Education Teachers

Have We Slept Away Our Ethical Responsibilities?

The United States is experiencing demographic shifts in epic proportions as increasing numbers of culturally and linguistically diverse students are entering the public schools at rapid rates. This richness in America's K-12 public schools is readily seen in its student population, but it is not visible in the teaching force which continues to be 90.7 percent European American (Branch, 2001). This disparity among teachers and students poses ethical and moral dilemmas in that for many culturally and linguistically diverse (CLD) students their whole K-12 schooling can be experienced without ever being taught by an ethnic minority teacher (Duarete, 2000).

As it is, differences between the diversity of teachers and students are unlikely to be mitigated without intervention at the federal, state, or local level. As a matter of fact, the problem is only expected to get worse due the national shortages of teachers, especially in the area of special education. Of concern to us is whether or not America's teaching force will be culturally competent to handle the diversity to be found in the K-12 student population (Tyler and Smith, 2000), particularly those students in need of special education services.

We believe that the need for culturally competent special education teachers is second to none as more and more culturally and linguistically diverse students are being inappropriately placed in special education. Furthermore, it is our contention that as the need for culturally competent special education teachers increases it becomes paramount that universities/colleges prepare teachers in understanding their own cultural contexts as part of their teaching persona. In other words, we believe that culturally competent special education teachers are those teachers who know and understand how their own cultural identity has influenced their lives.

What is Culture?

Culture can be said to be an elusive concept (Nieto, 2004; Gollnick & Chinn, 2004; Winzer & Mazurek, 1999). The term itself denotes the shared implicit and explicit rules and traditions that express the beliefs, values, and goals of a group of people (Kalyanpur & Harry, 1999). Culture is passed on to individuals through socialization, which is the general process by which attitudes, skills, and behavioral patterns are acquired. The act of cultural therefore, is a learned experience as people interact with individuals on a daily basis.

Culture, according to Sonia Nieto (2004), can best be understood "as the ever changing values, traditions, and social and political relationships, and worldview created and shared by a group of people bound together by a combination of factors that can include a common history, geographic location, language, social class, and/or religion, or other shared identity" (p. 146). Different cultural groups have different rules or expectations that guide behavior. All students and teachers enter the public schools with a knowledge base which is supported by the cultural codes in which they are born. For many CLD students, their cultural codes are at times neither supported nor validated among teachers often resulting in what Nieto describes as cultural discontinuity.

A cultural discontinuity refers to the "lack of fit" between the home and school culture and as such may cause problems for some students from CLD backgrounds. The notion of cultural discontinuities experiences have been identified and documented throughout the research community. Classical examples stem from the works of Shirley Brice Heath (1983) in exploring the tension between African American students and their mostly Anglo teachers and in Guadalupe Valdés (1996) study which documents the plight of Mexican migrant families and their disconnection with the public schools. We also find validation in the recent works by Lisa Delpit (1995) in her seminal work, "Other people's children: Culture conflict in the classroom which illustrates varies examples of cultural conflict between culturally and linguistically diverse children and their teachers.

Our belief is that the failure of many CLD students in schools is not solely dependent on the cultural discontinuities between teacher and student, but rather a product of other factors such as the social political contexts of education and what it means to be schooled in the United States. In addition, the hidden curriculum which continues to support the status quo at the expense of a culturally responsive pedagogy has a huge impact on students and their learning (Darder, 1991; Nieto, 2004). Add to this context the culturally and linguistically diverse student who is now functioning in what Harry (1992) describes as the culture of Special Education.

Discourse and Special Education

Western thoughts about special education are deeply rooted within the functionalist paradigm which espouses the need to view reality as something objective and independent of the human perspective (Skrtic, 1991). Within this paradigm, is the belief that something is wrong with the student which requires "fixing." In other words, the concept of disability within this paradigm becomes reified – or made into a thing that the student has therefore requiring remediation by teachers or other experts (Bogdan & Knoll, 1995; Kalyanpur & Harry, 1999).

Presented in quantifiable or medical terms, the use of special education language espouses that information be delivered, sustained as objective, technical, and factual, (i.e, evidence must be shown and presented in order for truth to be legitimized). The responsibilities of the experts, such as teachers, school psychologists, for example, are to identify, recommend, diagnosis and provide treatment. Objectivity therefore, within special education paradigm implies that "fixing" is more efficient when experts remain distant or aloof from the individual requiring the fixing.

We acknowledge that although some objectivity is needed in all professions. However, our argument and that of others (Bogdan & Knoll, 1988; Kalyanpur & Harry, 1999; Mehan, Hartwick, Meihls, 1986) asks how can the notion of objectivity in special education be justified when teaching and being taught are human experiences that are embedded on those subjective experiences that are culturally coded within our identity as cultural beings? Furthermore, to assume that a special education teacher's expectations are not influenced by their own ethnicity, class or linguistic backgrounds or that of their students is to postulate that they are removed from their own cultural bias for which we find no support (Dilworth, 1998; Nieto, 2002; Rist, 2000; Rios, 1996).

Cultural Identity

Cultural identity is crucial in becoming a culturally competent special education teacher (Banks, 1997; Nieto, 2004; Vázquez, 1997). An awareness of the self allows for an understanding of situations, interactions, and relationships. Banks argues that teachers must have "a clear understanding of their own cultural identity and its influence on their attitudes toward and relationships with culturally different people" (p. 85). According to Giroux (1994) the exploration of the self leads to teachers to become "responsible for their practices, particularly as these serve to either undermine or expand the possibility of a democratic public life" (p. 339).

We believe that special education teachers must come to know themselves not only from a traditional sense of belonging to an ethnic group, but from various other perspectives which includes race, language, economic, familial, spiritual, and gender. In addition, special education teachers must also come to understand how the nature and attachment to these perspectives has shaped their personal/familial histories, as well as their teaching pedagogy (Ndura & Lafer, 2004; Villegas & Lucas, 2002).

As indicated by Sue & Sue (1990;1999) and Ponterotto & Pedersen (1993) cultural identity are the ideas and ways of thinking about you, your group and other cultural groups. Knowledge of cultural identity models such as the White Racial Identity Model (Helms, 1995) and the Racial/Cultural Identity Development Model (Sue & Sue; Ponterotto & Pedersen; Ponterrotto, Gretchen & Chauhan,

2001) are processes in which special education teachers can come to understand their cultural developmental stage and that of their students.

The White Racial Identity Model (Helms, 1995) for example can be representative of a special education teacher's position in a dominant "cultural" role (i.e., López, 2003) and how their stage of identity development impacts not only their perceptions of themselves, but also perceptions and interactions with other teachers and the students/families they serve. In understanding the Racial/Cultural Identity Development Model (Sue & Sue, 1990; 1999) special education teachers can understand where their process of developing culturally impacts their students, but also helps in understanding where their students are functioning within their own cultural identity.

The Ethical Dilemma

Understanding the construct of identity is the basis for acquiring cultural competency (Vázquez, 1997). As service providers, are we not ethically responsible for operationalizing this construct not only from a cultural and racial perspective, but from the culture of special education? As indicated by Kalyanpur & Harry, (1998), special education should be viewed as a cultural and as such has its own ethos from which it values and legitimates itself.

Special education has its own means of communication to which only those who are privy ascribe. In addition, the profession itself has certain acquired behaviors on behalf of the teachers, whether reinforced unconsciously or consciously, which portrays them as objective and experts of knowledge, which others do not have (Harry, 1992). There are also beliefs and values associated with being a teacher who works with students with disabilities that is mediated within the contexts of each individual school culture.

Yet, how often are the cultural identities of teachers considered when negotiating the Individualized Education Plan (IEP) meeting or during the application of IEP goals and objectives by teachers? Nonetheless, the Council for Exceptional Children (CEC; 1993), American Psychological Association (APA; 2002), and the National Association of School Psychologists (NASP; 2002), state that culture should always be considered not only during the special education process, but in the assessment/ intervention portion and in planning and developing the IEP with students and their families.

Having been involved in all aspects of IEP meetings, specifically in the development of goals and objectives and in the implementation of these goals/objectives, we have rarely been involved in a discussion as to how perceptions and values of the special education teacher impact the specific teaching modalities, interventions and interactions. We assert that if the cultural identity on behalf of teachers is not questioned or addressed, the probability for the overrepresentation of culturally and linguistically diverse students will continue to manifest itself in the public schools. In essence, we believe this moves this agenda from an ethical issue to a legal question in that those special education teachers may not truly be meeting the needs of culturally and linguistically diverse (CLD) students within a special education environment.

Resolving the Ethical Dilemma

In working with students who have disabilities impacting academic success, there must be an understanding that CLD students are functioning within multiple cultures and may have varying expectations and stressors associated within this context (López, Salas, & Menchaca-Lopez, 2004). Along with functioning within a multi-contextual forum, CLD students may also have attitudes and beliefs associated with each role they have in specific environments and situations (López, 2003: Ponterotto & Pedersen, 1993; Sue & Sue, 1990). As special educators and ancillary service providers, we must first come to understand and be aware of this phenomenon. Second, teacher education programs in special education must implement the use cultural identity models that have been developed in order for pre-service teachers to understand the cultural developmental stages at which they are operating. We believe that special education teachers play a pivotal role in understanding this dilemma and as such can make huge differences in the lives of culturally and linguistically diverse children by not only advocating on behalf of them, but by making appropriate decisions regarding instruction and special education placement.

Conclusion

The special education teaching profession must come to recognize that teachers are living in what Renato Rosaldo (1989) call the "cultural borderlands." Within this milieu, individuals (including teachers) are constantly intersecting with the lives of people from various racial, ages, ethnic, social class, and gender backgrounds. Schools and classrooms embody the borderlands as students and teachers backgrounds come together and influence each other in this setting on a daily basis. Special education teachers need to explore how their own cultural codes which are defined by their ethnic identity have impacted their teaching pedagogy and their beliefs regarding culturally and linguistically diverse students. We believe that the call for the exploration of how culture identity influences the practice of teaching within the special education profession has slept long enough and that an awakening is indeed warranted.

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Effectiveness of Sentence-By-Sentence Self-Monitoring (SSSM)

A Strategy to Improve Reading Comprehension of Children with Nonverbal Learning Disability (NLD)

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Abstract

Very little is known about Nonverbal Learning Disability (NLD) as the condition has no recognized, official diagnostic criteria. The awareness and support for children with NLD is far from desired levels, and no formal research studies have been done in Singapore. Hence, teaching children with NLD can be the most challenging to teachers here. The writers have chosen to work with these children with NLD in hope that with a better understanding of the NLD syndrome better intervention strategies can be developed especially in the area of reading comprehension. In this study, the writers selected the Sentence-by-Sentence Self-Monitoring (SSSM) method to teach reading comprehension to five children diagnosed with NLD to examine its effectiveness as an intervention strategy.

Effectiveness of Sentence-By-Sentence Self-Monitoring (SSSM)

A Strategy to Improve Reading Comprehension of Children with Nonverbal Learning Disability (NLD)

Background

Research studies on children and adolescents who exhibit the Nonverbal Learning Disability (NLD) syndrome have been sporadic since the early 1970s (Johnson & Myklebust, 1971; Rourke, 1989; Tanguay, 2001). Stewart (2002) described NLD as diagnosis du jour. Like many new diagnoses, NLD now seems to be found in the literature of learning disabilities (Tanguay, 2001). Since the mid-1970s, researchers have noticed a cluster of symptoms characterizing NLD. Johnson and Myklebust (1971) first published a description of the disorder, suggesting that a group of children suffered from a learning disability that differed from the often-seen language-based learning disorders. They characterized these

children as having a disability in mathematics, social functioning and reading comprehension, and began describing the syndrome as a social-emotional learning disability.

The difficulty with social interactions continued to be seen as central by researchers (Casey, Rourke, & Picard, 1991; Denckla, 1983; Wiig & Harris, 1974), and in 1989, Dr Byron Rourke published his book that focused on this disorder, Nonverbal Learning Disability: The Syndrome and the Model. He proposed the concept that this disorder was more than social ineptness, suggesting that NLD was a neuro-cognitive disorder that effected the functioning of the right brain, the area responsible for nonverbal function in, and then interconnections between the areas of the brain. He also went on to suggest that the while matter of the brain had been damaged (by injury or insult of some type) and the resulting disorder was called a Nonverbal Learning Disability. This name is unfortunate as it implies a disruption of nonverbal functioning, when that is only part of the problem (Stewart, 2002).

In Singapore, very little is done to help children with NLD. Parents and teachers do not know how to cope with the condition. In fact, NLD has no recognized, official diagnostic criteria. The awareness and support for children with NLD is far from desired levels, and no formal research studies have been done in Singapore. These studies are mainly done in the West, where organizations such as the American Association for Nonverbal Learning Disability (AANLD) provide professional help to teachers and parents of these children. Unfortunately, in Singapore, the only local organization that accepts children with NLD is the Learning Disabilities Center. However, with limited resources and manpower, it can only admit those with mild and moderate NLD. Many children are left to cope with whatever assistance or resources are available in the mainstream system.

The Singapore Education Ministry has been providing special educational support via Learning Support Program (LSP) and by employing special needs officers (who are trained only to work with children diagnosed with either dyslexia or autism spectrum disorder) in regular primary schools catering only the lower primary level, but there is only ad-hoc support before primary level. Unfortunately, mainstream teachers are not trained to identify or help children with NLD in the context of regular classrooms, would treat these children like any normal children except that these children might be labeled as weak, lazy, stupid or slow learners. Where primary schools do offer LSP, a child with NLD would most likely be identified with Asperger Syndrome by a school psychologist unfamiliar with NLD, as the criteria for Asperger Syndrome are similar to NLD characteristics (poor social skills and hyperlexic tendency). Sometimes, because of poor planning and organizational skills, problems with impulse control, inability to attend to tactile and visual information, children with NLD are mistakenly diagnosed with attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD). Another common misdiagnosis is anxiety or panic disorder. While many children with NLD have very high levels of anxiety, this is due to their disability. Therefore, a misdiagnosis of children with NLD leads to inappropriate remedial intervention by the school's learning support teacher. Things are set to change now that the Education Ministry has introduced the Teachers of Special Needs scheme by selecting and training mainstream teachers keen to work with such children.

According to Rourke (2000), providing efficacious intervention or therapeutic programs for children with NLD is complicated. First, it is necessary to understand the neuropsychological assets and deficits of those who manifest the syndrome. Next, is determining the developmental maturity of the child. Therapeutic decisions must also be considered regarding the abilities of teachers and parents to deliver a program, the idiosyncrasies of their children with NLD that may enhance or impede the implementation of the program, and other dimensions that relate specifically to the milieu in which those with NLD are developing. Finally, there is the daunting task of providing efficacious, concrete, therapeutic suggestions for the many day-to-day problems that children with NLD encounter.

Stewart (2002) recommended that the remedial intervention for children with NLD should cover the deficit areas consistently seen in the disorder and have been used for a diagnosis of NLD. Those characteristics fall into seven areas: (1) organizational skills, (2) executive functions, (3) sensory-integration skills, (4) visual-motor skills, (5) social-pragmatic functioning, (6) literacy skills, and (7) numeracy competence.

We have chosen to work with children with NLD for three reasons. First, the need for a better understanding of the NLD syndrome so that better intervention strategies can be developed especially in literacy skills and numeracy competence. Next, children with NLD display poor functional or pragmatic use of language. They are unable to read between the lines or interpret other nonverbal communication such as body language or figures of speech. Additionally, though they may possess an extensive vocabulary by age three, they may display poor reading comprehension. Lastly, NLD is rarely encountered in Singapore or more likely, because few are aware of the syndrome. It is an exciting and challenging experience to work with these children who come to us once a week for a one-hour intervention sessions. It is a rare opportunity for us to explore better ways of teaching them reading comprehension.

Previous Research

Nonverbal Learning Disabilities, also known as Right-Hemisphere Learning Disability, often go unrecognized and unaided by teachers and other professionals for a large part of a child's schooling. There has been an adequate awareness of the underlying causes for the difficulties these children encounter in school. Currently, few resources are available through schools or private agencies for children diagnosed with NLD. It is still difficult to find a professional who understands NLD. These children are often labeled with behavior problems or emotional issues because of their frequent inappropriate and unexpected conduct, but NLD is known to have a neurological rather than a deliberate or an emotional origin (Rourke, 1989, 1995).

NLD is a complicated debilitating disorder whose full impact is not realized until the child is 9 to 11 years old. The disability is revealed in impaired abilities to organize the visual-spatial field, to adapt to new or novel situations, or to read accurately nonverbal cues. It appears to be the reverse of dyslexia (Thompson, 1996). Although they progress academically, children diagnosed with NLD have difficulty producing in situations where speed and adaptability are required. NLD has been described as a syndrome consisting of a cluster of assets and deficits. The neuro-psycho-educational (NPE) diagnostic pattern often shows a mix of strengths and weaknesses that comes together uniquely in each person (Arffa, Fitzhugh, & Black, 1989; Tay, 2004).

Challenges encountered by Children with NLD

Children with NLD might not know how to do simple, everyday tasks. Generally we do not consciously teach our children how to do everyday things such as open or lock a window. Typical children seem to grasp these common everyday tasks intuitively, sometimes much sooner than we realize. However, children with NLD are often challenged by simple daily tasks. They might find opening or locking a window a complete mystery. They have to be explicitly taught these 'simple" tasks in a step-by-step fashion. The adult might say, "Pull up the blinds by pulling down on the cord on the right hand side of the blinds … unlock the window by pushing that latch at the top to the right … now push the window up towards the ceiling." letting the child accomplish each step before going on to the next. If the child

is later faced with a window that cranks out, rather than pushes up, he will have to be taught that task as if it were new.

Children with NLD are often quite bright. Indeed, some are very bright and might even excel in certain studies. However, these children have a different learning style, and need to be taught in a verbally scripted manner. When taught according to their learning style, they may grasp some things quickly, often needing only one explanation when new materials are introduced. At other times, they may need repetition. While typical children may learn from watching us perform a task, children with NLD have to be taught consciously and explicitly, and that may make us feel unnatural. However, as children with NLD begin to grasp what is taught, explicit teaching will become more comfortable for us.

A major academic challenge encountered by children with NLD is poor reading comprehension. This hampers their performance in other academic subjects such as science and mathematics. Therefore, teachers working with these children must be able to devise suitable intervention strategies that can help them to cope with subject-specific reading comprehension.

According to Clay (1991), reading comprehension is a cognitive process related to thinking and understanding, and governed by feedback and self-correction. A reader needs to draw upon three major sources of information or cueing systems to aid in comprehension. These are grapho-phonic (the relationships between the sounds and visual patterns that represent them), syntactic (the meaningful relationships among words), and semantic (the meaning) cues.

Effective reading instruction fosters independence in the use of these cueing systems that allow readers to remain in control of their own learning. According to Shake (1986), "… [I]f students are to become mature, self-reliance readers, they must have the opportunity to practice self-correction and self-monitoring skills. External monitoring and correction impede the development of these skills" (p.23). Such a view of the process of reading development is consistent with Pinnell and Fountas's (1998, p.19) description of good readers as "self-regulated rather than teacher-dependent."

Unfortunately, children with NLD approach reading with limited strategic engagement. They typically forge through text with a minimum of self-monitoring and demonstrate little concern for the meaning. Their reading indicates insufficient integration among the cueing systems. It fails to capitalize upon the synergy of component processes working together. "They lack flexibility, an essential aspect of effective reading. What an expert reader does when encountering an unknown … word in one text situation ... is to recall that ... the word is met in another textual situation" (Duffy, Roehler, & Herrmann, 1988, p.65).

Intervention for Children with NLD

Though NLD is a very serious disability, there are excellent prospects for such children with early identification and intervention. There is no one intervention strategy designed to meet the needs of children with NLD. Several successful strategies have been found that include the Neurological Impress Method (Hecklemann, 1966, 1969), Echo Reading (Anderson, 1981), Listening-Reading Transfer Lesson (Cunningham, 1975), the Listen-read-Discuss Heuristic (Manzo & Casale, 1985), and the Structured Listening Activity (Choate & Rakes, 1987). Recently, Chia (2000, 2002) proposed that re-formatting a text by putting textual contents into headings under what person (who), what happened (what), what place (where), what time (when), what reason (why) can enhance reading comprehension. This approach, known as Scaffolding Interrogatives Method (SIM), has been found to work satisfactorily with hyperlexic children or those with mild or moderate comprehension deficits. Another

strategy – Sentence-by-Sentence Self-Monitoring (SSSM), developed by Buettner (2002), has been used to develop independent self-questioning in reading comprehension. We were interested in investigating the effectiveness of SSSM in promoting reading comprehension in children with NLD.

The Study

Design

The purpose of the study was to determine whether the Sentence-by-Sentence Self-Monitoring (SSSM) approach, developed by Buettner (2002), would be an effective way in teaching reading comprehension to children diagnosed with NLD.

A pretest and posttest research approach was used in which results were based on age equivalents of word recognition and sentence reading using Schonell Graded Reading Test-Revised and the Salford Sentence Reading Test-Revised and reading comprehension based on the GAP Reading Comprehension Test. Test results were compared before and after the 6-month intervention program.

Subjects

Five male subjects of Chinese descent, between the ages of 10 and 11 years and diagnosed with NLD by psychologists from the Child Development Clinic, were selected to participate in this study. Written permission was obtained from their parents before the start of the study. We participated in the study as co-teachers to all the children who displayed poor reading comprehension and written expression despite superior word knowledge. From now on these boys will be referred to as N1, N2, N3, N4, and N5. A summary of their psychological data (where Verbal IQ > Performance IQ) is shown in Table 1 below:

Children's Initials	Wechsler Intelligence Scale for Children-III		
	Verbal IQ	Performance IQ	Full-Scale IQ
N1	124	100	115
N2	93	89	90
N3	93	90	87
N4	101	87	93
N5	109	95	102

Table 1

We administered three standardized tests to determine the word recognition and reading comprehension ages of the five children at the beginning and at the end of the intervention program.

Setting/Schedule

The study was conducted at the Learning Disabilities Center (also known as LDcenter in short), where all the five children were then undergoing weekly intervention programs in language and literacy, and mathematics and numeracy. The parents brought these children to the center for a 1-hour session every Friday afternoon from 2.30pm to 3.30pm over a period of 6 months from March to August 2007.

Instruments

Three standardized assessments were used: the Schonell Graded Reading Test-Revised (Schonell & Schonell, 1950; Shearer, 1972), the Salford Sentence Reading Test-Revised (Bookbinder, 2000; Vincent & Crumpler, 2002) and the GAP Reading Comprehension Test (McLeod, 1990).

- *Schonell Graded Reading Test-Revised*

Also referred to as Test R1, it is one of the seven sub-tests that form the Schonell Reading Tests (Schonell & Schonell, 1950) – a battery for the assessment of reading attainment and for the diagnosis of aspects of failure in some of the mechanics of reading. The Schonell Graded Reading Test-Revised (Shearer, 1972) is based on a "look-and-say" (or visual-oral decoding) approach and provides word-reading levels from ages 5 to 15. According to Newton and Thomson (1976), the Schonell Graded Reading Test-Revised has a split half reliability of .93 and good evidence of concurrent validity (coefficient of .84) and predictive validity (coefficient of .60; significant at $p < .001$) with scores on the Aston Index-Revised (Newton & Thomson, 1976) – a test for screening and diagnosis of language difficulties. This test is one of the most widely used in U.K. and Singapore.

- *Salford Sentence Reading Test-Revised*

This updated version of the Salford Sentence Reading Test (Vincent & Crumpler, 2002) consists of Forms X and Y, each containing a series of 13 oral reading sentences of graded difficulty, designed to provide a quick and accurate measure of mechanical reading ability up to the age of 10 years 6 months. The graded sentence reading tests to which "the Salford provided a valid alternative gave reading ages up to 15 years of age, although, as Bookbinder (2000) pointed out, the actual tests in question were not directly standardized on samples of readers of such an age" (Vincent & Crumpler, 2002, p.2). The Salford manual reports correlations of .95 between Forms X and Y and predictive test-retest reliability of over .95.

- *GAP Reading Comprehension Test*

This modified cloze test based on Taylor's (1954) cloze technique has proven to be a valid measure of reading comprehension and is more reliable and superior to conventional multiple-choice tests (Bormuth, 1967). The theoretical basis for the validity of the GAP Reading Comprehension Test (McLeod, 1990) that actually taps is reading comprehension has been shown by Fries (1963), who identified three layers of language meanings. They are lexical, grammatical, and social-cultural. Success in replacing words that have been randomly deleted from passages is related to the first two layers and to some extent also the third (McLeod, 1990).

Intervention Program

Intervention Strategy

Sentence-by-Sentence Self-Monitoring (SSSM) was developed by Buettner (2002) in his work with early- and middle-years students whose reading lacked self-monitoring. Therefore, they performed poorly on reading comprehension tests. "The SSSM provides an opportunity for children to experience the power of their self-monitoring and to develop a sense of reading as a meaning-making constructive

process influenced by their own investment and control over that process" (Goodman, 1996, p.602). We felt that the SSSM approach would benefit children with NLD in reading comprehension.

Intervention Program

Based on Buettner's (2002) suggested procedure, we conducted a typical SSSM session in six steps:

1.) A section of text (e.g., a paragraph or page) within the children's instructional level was selected. Background knowledge was activated, and the five participating children were encouraged to formulate some predictions as to what they might learn from reading the text. In some cases, it was necessary for us to provide direct teaching of unfamiliar concepts in the text.

2.) The children were allowed to determine the number of sentences they would read in the section. Usually this step required modeling and monitoring by us, at least during the initial stages of intervention.

3.) Any one of the five would be asked to read one sentence at a time, after being given enough time to prepare independently prior to reading aloud. Each child was told to take as much time as necessary and to request support if needed. A pre-arranged signal (calling out or sounding a buzzer) indicated that the child thought he was ready to read the sentence orally. In keeping with Robinson's (2001) and Purcell-Gates's (2001) discussions of the critical role of silent reading in supporting reading-strategy development, we had to insist that every child take sufficient time to prepare. (Note: preparation was not always silent; much of the problem-solving was quite audible.)

4.) While the child read orally, we noted all miscues (corrected and uncorrected) as well as other significant reading behaviors. If we found that the reading was not congruent with the text, our notations formed the basis for discussion of strategies with him. Sometimes, it was beneficial for us to read the sentence exactly as read by the child while he followed along with the text, prompting him to pay attention to certain salient meaning cues. Before continuing with the next sentence, the child was asked to re-read the sentence. Discussion of strategies used by the children was incorporated at this point. According to Goodman (1996, p.602), these processes are essentially about "engaging in conversations with readers as they examine their miscues and talk about the reading strategies and the language they use."

5.) The five children were reminded that it was not only acceptable, but desirable to ask for support if needed. An important component of the SSSM strategy is the development of the child's ability and willingness to request assistance when necessary. These requests are a reflection of the child's growth in monitoring, described by Schwartz (1997, p.42) as "attending to the situation and noticing when things aren't right." To minimize the dependency connotations of the word "help," the term "coaching" was used; as each child experienced with the coach's role in empowering himself to draw upon his own capacity.

6.) Each SSSM session ended with some activities that ensured cohesive sentence integration.

Data Collection and Analysis

Data were collected from the standardized assessments for comparing the results before and after the intervention. Besides, the recording form for each SSSM session (see Appendix 1) was collected and recorded to evaluate the progress made. We analyzed these recording forms to find out to what extent

sentence-by-sentence self-monitoring had actually helped the children in tackling reading comprehension.

Hypothesis

We hypothesized that children with Nonverbal Learning Disability (NLD) would improve their performance in reading comprehension significantly after a six-month intervention program, during which they were taught to use the Sentence-by-Sentence Self-Monitoring (SSSM) method.

Results of the Intervention

Pre- and Post-Intervention Results based on Standardized Assessments

- *Schonell Graded Reading Test-Revised*

Table 2 shows the word recognition ages of the five children before and after the 6-month intervention program.

1.) **Pre-Intervention Results**

The test results (see Table 2) showed that the word recognition ages of three of the children N1, N3 and N5 were 3 months, 5 months and 6 months behind their respective chronological ages; and the word recognition ages of two of them N2 and N4 were both 3 months above their respective chronological ages. The average chronological age of the five children was 10 years 10 months and the average word recognition age before intervention was found to be at 10 years 8 months. The discrepancy between the average chronological age and average word recognition age was 2 months.

2.) **Post-Intervention Results**

The results (see Table 2) showed that the word recognition ages of three of the children N1, N2, N3 and N4 were 2 months, 2 months, 3 months and 4 months above their respective chronological ages; and the only child N5 obtained the word recognition age at his chronological age. The average chronological age of the five children was 11 years 4 months and the average word recognition age before intervention was found to be at 11 years 5 months. The discrepancy between the average chronological age and average word recognition age was 1 month.

Children's initials with chronological age at the beginning of the project study	Pre-intervention word recognition age	Post-intervention word recognition age	Remarks (post-intervention)
N1 (11yrs 2mths)	10yrs 11mths	11yrs 10mths	Above chronological age
N2 (10yrs 7mths)	10yrs 10mths	11yrs 3mths	Above chronological age
N3 (10yrs 10mths)	10yrs 5mths	11yrs 1mth	3mths below chronological age
N4 (10yrs 4mths)	10yrs 7mths	11yrs 2mths	Above chronological age
N5 (11yrs 3mths)	10yrs 9mths	11yrs 9mths	At chronological age

Table 2

- *Salford Sentence Reading Test-Revised*

The Table 3 shows the sentence reading ages of the five children before and after the 6-month intervention program.

1.) Pre-Intervention Results

The results (see Table 3) showed that the sentence reading ages for three of the five children N2, N3 and N4 were below their respective chronological ages. For the other two children N1 and N5, both had hit the ceiling sentence reading age, i.e., >10 years 2 months (for Form X). All the five children, who did better in their word recognition, were expected to perform better in the sentence reading test. However, it was not to be so. Three of them (N2, N3 and N4) showed a greater discrepancy between their respective chronological ages and sentence reading ages than word recognition ages. One possible explanation is that these children had failed to use contextual cues in the sentences to decipher unfamiliar or new words.

2.) Post-Intervention Results

The test results (see Table 3) showed that the sentence reading ages for all the five children N1, N2, N3, N4 and N5 had hit at >10 years 6 months (ceiling sentence reading age for Form Y). All the five children did well in the sentence reading test. They were observed to be more cautious in reading sentence-by-sentence than when they were first tested using Form X.

Children's initials with chronological age at the beginning of the project study	Pre-intervention sentence reading age (Form X)	Post-intervention sentence reading age (Form Y)	Remarks (post-intervention)
N1 (11yrs 2mths)	>10yrs 2mths	>10yrs 6mths	Above chronological age
N2 (10yrs 7mths)	9yrs 10mths	>10yrs 6mths	Above chronological age
N3 (10yrs 10mths)	9yrs 11mths	>10yrs 6mth	Above chronological age
N4 (10yrs 4mths)	10yrs 1mth	>10yrs 6mths	Above chronological age
N5 (11yrs 3mths)	10yrs 2mths	>10yrs 6mths	Above chronological age

Table 3

- *GAP Reading Comprehension Test*

The Table 4 shows the reading comprehension ages of the five subjects before and after 6 months of intervention program.

1.) Pre-Intervention Results

The test results (see Table 4) showed that the reading comprehension ages of all the five children N1, N2, N3, N4 and N5 were behind their respective chronological ages in terms of 15 months, 21 months, 35 months, 21 months, and 18 months respectively. The average chronological age of the five children was 10 years 10 months and the average reading comprehension age before intervention was found to be at 9 years 0 months. The discrepancy between the average chronological age and average reading comprehension age was 22 months. The average reading quotient was 83. According to McLeod (1990), "a retarded reader is defined as a child whose reading level is lower than that which is normal for someone whose age is 80 per cent of the child's actual age. That is, the tables indicate the cut-off scores for children with reading quotients less than 80" (p.5). Hence, all except the child N3 have low

average reading quotient (i.e., between 80 and 89). Based on McLeod's (1990) definition, the child N3 is a retarded reader with a reading quotient of 73 (below the cut-off reading quotient of 80).

2.) **Post-Intervention Results**

The test results (see Table 4) showed that the reading comprehension ages of all the five children N1, N2, N3, N4 and N5 were behind their respective chronological ages in terms of 10 months, 15 months, 29 months, 21 months, and 18 months respectively. The average chronological age of the five children was 11 years 4 months and the average reading comprehension age before intervention was found to be at 9 years 6 months. The discrepancy between the average chronological age and average reading comprehension age was 22 months. The average reading quotient was 84. The reading quotients of all, except the child N3, remained at the low average range 80-89. The child N3's reading quotient remained at below the cut-off reading quotient of 80, with only an improvement of 1 point at 74, up from the previous 73. In other words, the child N3 was confirmed a retarded reader (by McLeod's definition) with NLD.

Children's initials with chronological age at the beginning of the project study	Pre-intervention reading comprehension age (Form B3)	Post-intervention reading comprehension age (Form R3)	Remarks (post-intervention)
N1 (11yrs 2mths)	9yrs 11mths	11yrs 10mths	Above chronological age
N2 (10yrs 7mths)	8yrs 10mths	11yrs 3mths	Above chronological age
N3 (10yrs 10mths)	7yrs 11mths	11yrs 1mth	3mths below chronological age
N4 (10yrs 4mths)	8yrs 7mths	11yrs 2mths	Above chronological age
N5 (11yrs 3mths)	9yrs 9mths	11yrs 9mths	At chronological age

Table 4

Summary

The pre-/post-intervention results suggested that there was a significant improvement in the average word recognition age for all the five children: from 10 years 8 months to 11 years 5 months, an increase of 8 months. Also, the discrepancy between the average chronological age and average word recognition age was down by 1 month, i.e., from 2 months at pre-intervention phase to 1 month at post-intervention phase.

The pre-/post-intervention results also pointed to a significant improvement in the average sentence reading age for all the five children: from 10 years (Form X) to more than 10 years 6 months (Form Y), which is the ceiling sentence reading age.

The pre-/post-intervention results also suggested that there was no real significant improvement in the average reading comprehension age for all the five children: from 9 years 0 months (Form B3) to 9 years 6 months (Form R3), an increase of 6 months, which was due more to developmental maturity during the six months of intervention program. Also, the discrepancy between the average chronological age and average reading comprehension age remained the same, i.e., 22 months at both pre- and post-intervention phases. The average reading quotient of 83 (Form B3) at pre-intervention

and that of 84 (Form R3) at post-intervention was not a significant difference. In other words, all except the child N3 displayed a low average reading quotient in the range between 80 and 89. Only the child N3 was found to be a retarded reader with NLD.

Conclusion

This study investigated the effectiveness of SSSM as a strategy to aid children with NLD in understanding what they read and answering comprehension questions correctly. It also examined how children with NLD could learn to comprehend what they read through self-monitoring sentence-by-sentence reading.

The findings showed that all the five children with NLD improved in their performance in word recognition and sentence reading after undergoing six months of intervention program. The SSSM method had increased the word and sentential awareness of the five children with NLD during reading and also aided them in self-correcting any mistake made during the decoding process. They read sentences more fluently and accurately than before. However, their performance in reading comprehension continued to be poor. In other words, despite an improvement in word recognition or sentence reading, there was no significant improvement in reading comprehension for these children with NLD.

That is to say that, despite being taught to apply the SSSM method, none of the five children with NLD showed any significant improvement in their performance in reading comprehension although their word recognition and/or sentence reading were more fluent and accurate than before.

Limitations of SSSM

A major problem with SSSM is its obvious piecemeal nature. A child may become fixated at the sentence level of analysis and lose a sense of the wholeness of the text. Buettner (2002) has suggested a number of ways to deal with this shortcoming:

1.) Asking questions or making comments about the relationship of a particular sentence to the one just before it, or eliciting from the child a prediction about the upcoming sentence

2.) Developing story grammars or structured overviews

3.) Re-reading the passages after completing SSSM

4.) reading the text to the child before SSSM

5.) Asking questions after SSSM (with the text in front of the child, so that responses are text-based).

Requiring oral reading that is of high congruence with the text may pose some philosophical problems for teachers who work within holistic language models that give primacy to meaning cues (Weaver, 1994). SSSM is grounded in an interactive reading framework, one that certainly acknowledges the importance of top-down (meaning driving) elements, but views the latter as functioning in an interactive and compensatory manner with bottom-up sources of information (Stanovich, 1984). From this perspective, helping a child with NLD become a more effective comprehender assumes a

sensitivity to the points of imbalance within the reader's use of cueing systems and the ability to provide effective prompts to achieve a flow of dynamic integration (Pressley, 2000).

The ultimate goal of SSSM is clearly not to cultivate the notion that all texts must be read with 100% accuracy; its purpose is to promote strategic and independent processing of print that encompasses appropriate attention to bottom-up and top-down processing elements (Buettner, 2002). In SSSM, the quality of oral reading text congruence must be constantly evaluated by the teacher and appropriately discussed with the child concerned.

Finally, SSSM can easily become tedious and slow moving. It must be emphasized that SSSM is not a long-term strategy. It is a highly focused practice and its purpose is to support authentic reading. In our experience, children with NLD require more than 15 sessions with SSSM as recommended by Buettner (2002). It is therefore important to jeep accurate records in order to provide careful monitoring of the rate and quality of a child's progress. To ensure long-term internalization of self-monitoring strategies, periodic informal tests (e.g., listening to a child's oral reading) are recommended in the weeks following intervention.

Recommendations/Suggestions

It is important to note here that this study focused on using the SSSM method only to teach reading comprehension to children with NLD. Failure to show any improvement by the five participating children with NLD in their reading comprehension through the use of the SSSM method does not mean they could not be taught to read with comprehension. The study suggested that perhaps the SSSM method might not be totally suitable for use with such children. There are many other reading comprehension strategies, such as those (e.g., Listen-Read-Discuss Heuristic and the Scaffolding Interrogatives Method) mentioned earlier, that could be used with children with NLD and be tested for their effectiveness. Perhaps, what is also important is that at least one method, i.e., the SSSM method, has been tried with children with NLD, tested for its effectiveness, and found to improve sentence reading than reading comprehension. Teachers working with such children should explore other reading comprehension strategies and in the same manner, test their effectiveness.

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Special Education Debate

Based on state and federal statistics, minority students are not being over identified for Special Education, the students in Special Education have a lower dropout rate than the students in general education, and students in Special Education show growth towards closing their learning gap.

Natalie Bogg
Vernette Hansen
Azusa Pacific University

Debaters

Natalie Bogg has 7 years experience in Special Education through teaching and/or being a job developer with the WorkAbility I Program. Natalie has earned a Master's Degree, General Education and Special Education Credentials, CLAD Certificate, and is married with 2 teenage daughters living at home. Natalie has completed the Con side, Pro Rebuttal, and Conclusion of this paper.

Vernette Hansen left business after 12 years to pursue a Master's degree in Special Education. She became interested in students with special needs after working for county schools as an instructional assistant. She felt these students could do much more than what was expected of them in academics, behavioral and life-skills management. She has worked for three years in a school setting running a Learning Center and providing support for regular education teachers. All Special Needs students in her school are in regular education classes most of the day. Vernette has completed the Introduction, Pro side, and Con Rebuttal of this paper.

Introduction

There are three controversial issues concerning Special Education and achievement. First is the concern that minority groups are over identified as Special Needs. The data indicates this may be occurring to some degree, but has lessened in the last few decades for some groups. Then there are the twin issues of closing the achievement gap between Special Education and regular education students and eventual high school graduation rates for Special Needs students. The new high school exit exam requirements heighten concerns of these issues.

In 2006, the California Department of Education issued a progress report showing statistics for sub-groups of Special Education students and progress in these areas. These groups are especially important to look at as we, educators, strive to meet the educational needs of students with challenges. We know we have succeeded legitimately in meeting those needs when we have proportionally represented sub-groups in Special Education, closed the learning gap between students with special needs and non-disabled students, and produced high school graduates from all sub-groups.

Pro Argument

Statistics show that Whites have the same percentages as the general population in Special Education identification. They also show the graduation rates for Whites identified with Special Needs is considerably above the state average for other challenged groups and higher than those not receiving services. Finally, we are closing the achievement gap for special needs students as evidenced by the graduation rate and standardized test scores.

A report issued by the California Department of Education in 2006 released statistics for 2004-2005 showing that approximately 10% of the overall student population is identified as Special Needs. If we were to maintain that there is no discrimination towards minorities through over-identification of Special Needs, then each minority sub-group would have close to10% of their population identified as Special Needs. The report indicated 9.8 % of Hispanics, 11% of Native American, 11.3% of Whites and 15% of African-Americans students receive Special Education Services. The other sub-group minorities are Filipino, Asian, and Pacific Islander, and these are under represented in Special Education by 5.0%, 5.2% and 7.6% respectively.

The statistics for this latter sub-group clearly demonstrate that not all minority sub-groups are over represented. Whites are identified more than Native Americans, and overall, Whites are over represented in Special Education by 1.3%. Only African Americans are disproportionately represented by a significant margin. No other sub-group significantly exceeds the state average.
In considering the statistics for Special Education and high school completion, another State Department of Education's report from the demographics office compared low income, English Language Learners, and Special Education dropout statistics. The dropout rate for Special Education students in the 2005-2006 school year was 8.6 %. In contrast, the dropout rate for ELL students was 33.7%, and the socioeconomically disadvantaged were alarmingly 44.2%. The average student with none of the above challenges has a dropout rate of 17%. Regular education students drop out at a rate twice that of special education students. The National Center on Secondary Education and Transition reports that the dropout rate for Special Needs students (other than those with emotional or behavioral conditions) is contingent on several variables not related to disability that also tend to effect the rate for non-disabled students. These factors include previous retention, socioeconomic situation, drug abuse, low parental involvement, etc. Therefore, other than emotional or behavioral disorders, disability is not the primary contributing factor in dropout rates.

Further indication that the achievement gap between regular education students and Special Education students is narrowing is evidenced by looking at the standardized testing from 2001-2005. Special Education students not only made growth in the 4 years of testing, but they scored 18% in 2001 and 22% in 2004 in the proficient range (CDE, 2006). This is remarkable considering that in order to be identified as a Special Education student, the disability must affect academic performance.

As encouraging as these statistics are, it is interesting to note that the most successful Special Education students are unaccounted for as they are the students who have overcome their disability such that they no longer need Special Education supports and have exited Special Education.

Con Argument

If minority students are considered as all racial/ethnic groups except for whites (non-Hispanic) then, according to the national statistics, minorities are being identified more often than whites for specific learning disabilities, developmental delay, hearing impairments, autism, deaf-blindness, mental retardation, and emotional disturbance. To support the above statement, the 27th Annual Report of Congress on the Implementation of the IDEA Act, 2005, was referenced for the percentage of the American population receiving special education and related services by race/ethnicity (see Table 1 below).

Table 1. The Percentage of Students Receiving Special Education for 2003

Race/Ethnicity	American Indian/Alaska Native	African American	White (non-Hispanic)	Hispanic	Asian/ Pacific Islander
Risk Index	13.8%	12.4%	8.7%	8.2%	4.5%

The report continues with risk ratios for 2003 comparing the proportion of a particular racial/ethnic group served under Part B to the proportion served among the other racial/ethnic groups combined. Black and American Indian/Alaska Native students were more likely to be served under Part B than all other racial/ethnic groups combined (1.5 times more likely); Asian Pacific Islander, Hispanic and white students were less likely to be served under Part B than all other racial/ethnic groups combined (0.5, 0.9, and 0.9 respectively). Additional statistics from the report were that American Indian/Alaska Native students were 1.8 times more likely to receive special education and related services for specific learning disabilities and 3.6 times more likely to receive special education and related services for developmental delay than all other racial/ethnic groups combined. Asian/Pacific Islander students were 1.2 times more likely to receive special education and related services for hearing impairments, autism and deaf-blindness than all other racial/ethnic groups combined. Black students were 3.0 times more likely to receive special education and related services for mental retardation and 2.3 times more likely to receive special education and related services for emotional disturbance than all other racial/ethnic groups combined. Hispanic students were 1.2 times more likely to receive special education and related services for hearing impairments and 1.1 times more likely to receive special education and related services for specific learning disabilities than all other racial/ethnic groups combined. White (non Hispanic) students were 1.6 times more likely to receive special education and related services for other health impairments than all other racial/ethnic groups combined.

The second part of this debate refers to dropout rate. Estimates from 2001 place the overall dropout rate for students without disabilities at 11 percent (Kemp, 2007). Another source, the 2006 Digest of Education Statistics, listed the 2003 national high school dropout rate for all racial/ethnic groups to be 9.9 percent (white was 6.3 percent, black was 10.9 percent and Hispanic was 23.5 percent). These two sources' data don't match, but they are fairly close in percentages. Switching focus to the national dropout rate of students ages 14 and older with disabilities, the 27th Annual Report to Congress on the Implementation of IDEA, 2005, for the year 2002-2003, detailed the figure to be 34 percent. Checking figures from the 2006 Digest of Education Statistics, the dropout rate for all students with disabilities for that same year (2002-03) was 33.6 percent. The dropout rate was highest for American Indian/Alaska Native students with disabilities (48.4 percent); black (41.7 percent) and Hispanic (38.9 percent) students with disabilities had the second and third highest dropout rates. The dropout rate was lowest for Asian/Pacific Islander (24.3 percent) and white (29.9 percent) students, both with

disabilities. For students with emotional/behavioral disorders, the dropout rate has been between 50% and 59%, while between 32% and 36% of students with learning disabilities drop out of school (Kemp, 2006). Comparing the national figures from these two resources (34% and 33.6%) for all students with disabilities, to the 11% and 9.9% of all students without disabilities, the conclusion seems fairly obvious. Students with disabilities had a higher dropout rate than students without disabilities. Lastly, as students with disabilities progress toward the secondary level in our national school system, they show less and less growth towards closing the learning (academic performance) gap.

The No Child Left Behind (NCLB) law has provided a spotlight on the academic performance of poor and minority students, English language learners, and students with disabilities whose lagging achievement had previously been hidden (Haycock, 2007). It also has afforded leverage to educators who are working to close achievement gaps. In high schools, however, which get little attention (and even less funding) from NCLB, not much progress has been seen (Haycock, 2007). Results from state assessments and the National Assessment of Education Progress from 2003-2005 indicated 17 of 24 states showing improvement in reading, but only 13 of 20 states showing gap-closing for African American students, and 11 of 20 states showing the same for Latinos. In math, 20 of 23 states showed overall improvement, but only 12 of 20 showed the same for Latinos. In math, 20 of 23 states showed overall improvement, but only 12 of 20 showed African American/white gap-closing and only 10 of 20 states showed Latino/white gap-closing (see Table 2 below).

Table 2. Growth Towards Closing the Learning Gap (Secondary Level), 2003-2005

	% for all groups tested	African American	Hispanic
Reading - states tested	71%	65%	55%
Math –for states tested	87%	60%	50%

On the contrary, “improved achievement and narrowing gaps on state tests in the elementary grades are being seen; this is where most of the energy and resources provided through NCLB’s Title I are focused. In the middle grades, on the other hand, the picture on state assessments is mixed” (Haycock, 2007). Consequently, as a whole, students in Special Education show little growth towards closing their learning (academic performance) gap.

Pro Rebuttal

In regards to over-identifying a certain group of students for Special Education, the “Pro” statistics cited from the 2006 California Department of Education’s report for 2004-05 showed that Native Americans (11 %) and African-Americans (15.4%), together with Hispanics (9.8%), Filipino (5%), Asian (5.2%), and Pacific Islander (7.6%) were receiving Special Education services. Thus, if minority students are considered to be all racial/ethnic groups except for whites (non-Hispanic), the statistics prove that all minorities, together, were being identified more than whites (11.3%) for Special Education services. Both sides of the debate, comparing distinctive years, listed drastically different statistics for dropout rates. Students with and without disabilities are dropping out of school at an alarming rate (Kemp, 2007). However, the precise extent of the problem remains elusive because individual schools, school districts, and state departments of education often use different definitional criteria and calculation methods (Kemp, 2007). “There are two commonly accepted calculation methods used for computing dropout rates. The event method measures the proportion of students who

drop out of school in a single year (i.e., "What percentage of students dropped out this year?"). It is the most liberal and, consequently, favored by school districts because it underestimates the true number of dropouts. The cohort method, or longitudinal approach, involves following a group of students who are expected to graduate together across the secondary school years (i.e., "What percentage of students entering the X grade in a certain school district drop out after Y years?"). It is the most conservative and, consequently, accurate method. School districts avoid using this method because it portrays an accurate but unfavorable dropout rate. There is a third method that is rarely used but nevertheless appears in the literature: status rate. It measures the proportion of students who have not completed high school and are not enrolled on a specific day" (Kemp, 2007). Therefore, secondary schools, school districts, and state departments of education need to reach consensus on a uniform method of reporting when a student has dropped out of school and how to calculate and report the dropout rate; a uniform system would allow for the true dropout rate to be calculated. Thus, both debate sides have good arguments, but without definitive methods being identified to determine data, either side could be right! Results of standardized test scores, when collectively compiled for all grade levels as the "Pro" side reported, might show evidence of proficiency for students with disabilities, but the overall patterns according to the study by Education Trust (Ed Trust), are fairly consistent. The Education Trust, established in 1990 by the American Association for Higher Education as a special project to encourage colleges and universities to support K-12 reform efforts and now, grown into an independent nonprofit organization whose mission is to make schools and colleges work for all of the young people they serve, works hard to track achievement patterns both in the U.S. as a whole and in the individual states (Haycock, 2007). "The Ed Trust collects and analyzes results from state assessments and the various exams that make up the National Assessment of Educational Progress (NAEP). The analysis of state assessment results from 2003-05 looked at states that had at least three years of consistent elementary assessments for which they had reported results for the different subgroups. Improved achievement and narrowing gaps on state tests in the elementary grades, where most of the energy and resources provided through No Child Left Behind's (NCLB) Title I are focused, were seen. However, in the middle grades, for reading, only 20 of 31 states showed overall improvement, 22 of 29 states showed gap closing for African-American students, and 17 of 29 showed gap closing for Latino students. In math, 29 of 31 states showed improvement, but only 18 of 29 showed gap closing for African American students and 17 of 29 showed gap closing for Latino students" (Haycock, 2007). In high schools, which receive less funding and less attention from NCLB, far less progress was seen, as stated in the earlier Con Argument (refer to Table 3 below).

Table 3. Growth towards closing the Learning Gap (Middle Grades), 2003-2005

	% for all groups tested	African American	Hispanic
Reading- states tested	65%	76%	57%
Math-for states tested	94%	62%	57%

Further, "patterns for NAEP scores are consistent with those for state assessments. The most stable of all the tests, reading and math scores at the elementary level, show strong improvements between 1999 and 2004. More important, record performance was shown for all groups of students and the smallest gaps were evidenced separating African American and Latino students from white students in U.S. history. In the middle grades, however, performance is up and gaps are narrowing in math, but reading is mostly flat. At the high school level, Ed Trust's analysis of NAEP data shows no real change" (Haycock, 2007). Therefore, only elementary students in Special Education seem to show significant growth towards closing their learning gap.

Con Rebuttal

When looking at the most current statistics for the dropout rate for California special education students, it would appear we as educators have made dismal progress. The opposing position has asserted that the high school dropout rate for special education students is still much higher than the regular education student population dropout rate; however, when the dropout rate for specific disabilities is analyzed, it becomes clear that emotionally and behaviorally disabled students have a 50% or higher dropout rate (What Do We Know, 2). Their statistics skew the data to show a much higher overall rate than most disabilities. We can say we have progress to make with these two disabilities, but that does not indicate a failure overall at reducing the dropout rate for special needs students in general. The same partial positive growth is seen in closing the achievement gap between regular education and special education students. We have gains to make in closing the gap for secondary students, but we are closing the gap for younger students, as seen in standardized testing. We are moving forward with the youngest students because that group tends to respond to interventions more rapidly than secondary students. For example, a brief issued in 2007 by the National Center for Educational Statistics states, "It has been shown that 17% of special education students across the later elementary grades receive special education services for only two years." The brief describes the longitudinal study of students beginning in 1997 whereby 43% of the group that received special education services in first grade, no longer received them by third grade. It can be assumed that students are exiting special education because the gap has closed between them and regular education students.

Conclusion

For the first aspect of the debate, the Pro side cited statistics from a 2006 California Department of Education report, which differed from the statistics cited from the 27th Annual Congressional report, used for the Con side of the debate. These two sources, although the percentages were different, proved that one certain subgroup of students seemed to be more readily identified for Special Education services than any other subgroup. African-Americans (black) seem more likely to be served under Part B of IDEA than any other racial/ethnic group, the latter of which would include whites. Both sides of the argument also agreed, even though actual statistics were dissimilar, that white students were more often identified than Hispanics and Asian/Pacific Islander youth. To address the over-identification of students of color, both sides of the debate agreed that steps for correction need to be initiated. Youth require screening to identify those "at risk" for developing learning, behavioral, social, and/or emotional problems that impact school achievement. Next, implementation of research-based interventions is essential in the general education settings. For those students not responsive to the interventions, further comprehensive evaluations are necessary; the assessments need to identify reasons for poor receptiveness, to determine the possible presence of a disability, to establish the educational need, and to develop an appropriate individualized educational plan. Postulating a conclusion about the dropout rate for students with disabilities, compared to students without disabilities, was difficult. Both sides of the debate used statistical data published in the same year (2006), but the actual years for comparison were different (2002-03/2005-06). The Pro argument, using the State Department of Education report, found that the Special Education student was less likely to drop out than the average student with no disabilities. The Con argument, on the contrary, citing information from the 2006 Digest of Education Statistics and the 27th Annual Report to Congress on the Implementation of IDEA, 2005, declared that students with disabilities were three times more likely to drop out than pupils included in the national high school dropout rate for all racial/ethnic groups together.

The debate team concluded that the three years between the cited statistics (2002-03/2005-06) could hardly have created an "about face" in the identified group. A uniform method of reporting when a student has dropped out of school and how to calculate and report the dropout rate would probably allow for the true dropout rate to be calculated. Discovered by both parties from researching this aspect of the debate, however, was the fact that dropping out of school is contingent on several variables not related to the disabilities of youth. Both debate sides ascertained that previous retention, amount of exposure to the general education curriculum (education in regular classrooms), socioeconomic situations, drug abuse, low parental involvement, cultural norms and values, academic failure, lack of involvement in school functions and extracurricular activities, and absenteeism affect the reasons for all students exiting school without a diploma. Lastly, the team determined that students in Special Education have demonstrated improvements in closing the learning (academic performance) gap. Improved achievement and narrowing gaps on state tests has been strongly evidenced in the elementary grades, with students in the middle grades showing slight improvements, mostly in math. High school youth have shown less growth in closing their academic performance (learning) gap. To continue the trend and improve achievement across the continuum, the debate team agrees that accountability needs to translate into long-term goals. According to Kati Haycock's article, No More Invisible Kids, several objectives would make a difference. "Secondary education needs more attention, allocation of more resources, and implementation of more effective strategies for improving and increasing graduation rates. The expansion of expertise and resources is necessary to focus on turning-around persistently low-performing schools. Recognizing growth in students' learning can help distinguish between schools whose students are working toward proficiency and schools whose students require more interventions. States need to ensure that students are taught real-world standards and teachers are provided stronger supports to teach and assist students in meeting those standards ; and finally, teacher quality must be improved, with provisions intact for equal access to effective teachers" (Haycock, 2007).

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The Impact of Assistive Technology on Vocabulary Acquisition of a Middle School Student with Learning Disabilities and Limited English Proficiency

A Descriptive Case Study Analysis

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Abstract

Vocabulary acquisition traditionally has been a struggle for students with special learning needs. This study involved an eleven year old fifth grade student with learning disabilities in reading and writing and limited English proficiency. Assistive technology assistance was provided from the Franklin Language Master 6000b and Microsoft's Power Point 2003. Visual representation (e.g., student drawings) was also used to aid student connections to an individual vocabulary word in the context of the text read. Best practices pedagogy (i.e., trade book use, choice, discovery, interactive learning, reciprocal teaching, and repetition) were utilized and have been framed in a lesson structure entitled, Individualized Direct Vocabulary Discovery Method with Assistive Technological Scaffolding (IDVDMATS). This case study provides readers rich descriptions of the special vocabulary learning needs of one student following the IDVDMATS approach.

The Impact of Assistive Technology on Vocabulary Acquisition of a Middle School Student with Learning Disabilities and Limited English Proficiency

Reading, writing, spelling, and vocabulary building activities are the nature and emphasis of literacy instruction in American schools today and are troublesome activities for many students (Choate, 2000; Donaldson and Nash, 2005; Gentry, 1995; Hardman, Drew, and Egan, 2005). Students with learning challenges such as those with special learning needs often struggle with such activities that dominate the learning of language including reading, writing, spelling and vocabulary (Council for Children with Learning Disabilities, 2004; Donaldson and Nash, 2005; Hardman, Drew, and Egan, 2005; Laurice and McCachran, 2003; LD Online, 2003; National Information Center for Children and Youth with Disabilities, 1997; Office of Disabilities Services (ODS) at Haverford College, 2003; Teaching LD, 2005). Limited English proficiency students (LEP) also encounter similar language learning problems, especially, in the single most important area of language development—vocabulary acquisition (Hardman, Drew, and Egan, 2005; Pikulski and Templeton, 2004; Schmitt and McCarthy, 1997; Waring and Takaki, 2003). Vocabulary acquisition is one of the most important components to becoming literate and developing literacy skills (National Institute of Child Health and Human Development, 2000).

Vocabulary acquisition may become difficult for students with learning challenges as they encounter text with increasing readability difficulty and demands. Readability is very important for a reader gathering meaning. Dale & Chall (1949) defined readability as "the sum total of all those elements within a given piece of printed material that affects the success a group of readers have with it. The success is the extent to which they understand it, read it at an optimum speed, and find it interesting" (p. 23). DuBay (2004) cited several research studies concerning readability as salient today. These studies he cited from the 20th Century reported text with greater readability allowed the reader to persist in reading the content (cf. Feld, 1948; Hardyck & Petrinovich, 1970; Klare, 1974; Klare, Shuford, & Nichols, 1957; Murphy, 1947; Schramm, 1947; Swanson, 1948). To date, none of these studies included students with vocabulary learning challenges.

Vocabulary growth is typically measured by two facets: a.) words enunciated correctly and (b) correct understanding of word meanings. Instruction to develop reading vocabulary is most effective and beneficial for any learner, when it provides an intrinsic life motivating opportunity for him/her to develop vocabulary and construct meaning throughout one's experiences with language (Fosnot, 2005; Mathewson, 2000). Assistive technologies (ATs) may be one avenue for supporting vocabulary growth in students who struggle with learning language (Leu, 2000; Male, 1994; 1997; Molebash & Fisher, 2003; Vacca & Vacca, 2008).

Assistive technology (AT) has been defined by the 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA) "as any item, piece of equipment, or product system, whether acquired commercially, off-the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability" (IDEA, 1997, p. 8). The pairing of AT with best teaching practices has proven efficacious for students with reading and other language learning issues. For example, in Gentry's (2006) study, the pairing of e-publishing assistive technology to trade books use was efficacious in enhancing content learning growth. Students with learning, writing, and reading issues gained in content growth within this study. The use of trade books, technology, video, speaking, listening, and other forms of texts have the ability to improve the learning in content area classrooms (Sampson, Rasinski, & Sampson, 2003; Vacca & Vacca, 2005; 2008). Victoria McLaughlin (2006) found interactive story reading with picture, visual support expanded English language learners Spanish as well as English vocabularies. Another best practice which is indispensible in classrooms today follows brain friendly, teaching research; it is the conveyance of choice (Silberman, 2006; Zull, 2002). AT choices, book selection, word selection, picture representation choices all represent the number of choices offered through the IDVDMATS approach. Students learning with assistive technologies benefit when such learning has a connection to best teaching practices (e.g., using trade books and choice) (Gentry, 2006; Sampson, Rasinski, & Sampson, 2003; Vacca & Vacca, 2005; 2008). Repetition of vocabulary words has proven to benefit English language learners (Galeano, 2006, McLaughlin, 2006). McLaughlin (2006) found children books to be a suitable platform for repetition with semantic context and picture support. Assistive technology paired with best practices may provide a means for repetition to be meaningful and not another exercise of drill and practice. Gaming is a new phenomenon which is used to facilitate repetition learning of vocabulary as meaningful and engaging (Richek, 2005). Recently, discovery learning and reciprocal teaching as best teaching practices have been heralded as relevant and needed in today's classrooms (Chak, 2007; Garderen, 2004; Richek, 2005; Schlenker & Tierney, 2006; Slater & Horstman, 2002). Slater & Horstman (2002) cited reciprocal teaching as the preeminent cognitive strategy fitting middle school and high school struggling readers and writers. Similar to the above studies, this study involved elements of discovery and reciprocal education in regards to vocabulary discovery and the teaching of recently learned vocabulary to peers.

Research into reading attitude's connection to students with special learning needs is especially lacking and in need of further investigation (Lazarus & Callahan, 2000). Feiwell's (1997) research with second graders who have reading disabilities reported reading words ability as the best predictor of one's "academic self-concept" which was operationalized through "physical self-concept, social self-concept, and global self-worth measures from Harter's Self-Perception Profile for Children" (p.1; cf Harter, 1985). Therefore, using trade books to focus on certain words to provide opportunities for the direct reading of unknown words may prove to be a benefit for maintaining or encouraging a positive attitude toward reading among students who struggle with vocabulary acquisition. Attitude is an important component to learning vocabulary and reading perseverance especially for those students who struggle to gather meaning from text (Mathewson, 2000). The blending of reading books, AT, and other vocabulary acquisition instructional best practice methods may provided motivational opportunities for the creation of successful semioticians (meaning makers).

Purpose of the Study

The purpose of the study was to develop a method which merged best teaching practices with assistive technology support accompanying the use of student selected children's books to ameliorate vocabulary acquisition of unknown words discovered while reading. Also, the study sought to report the student's perceptions and reading attitudes before and after the lesson intervention. Readability scores from the student's text selections were reported. The following research questions guided this study:

- What learning perception does a student with learning disabilities and limited English proficiency manifest concerning reading instruction and personal reading experiences before the IDVDMATS?
- What learning perception does a student with learning disabilities and limited English proficiency manifest during and after the IDVDMATS instructional experience?
- What is the impact of IDVDMATS on the reading attitude of a student with learning disabilities and limited English proficiency before and after the lesson?
- What is the impact of IDVDMATS on the vocabulary acquisition of a student with both learning disabilities and limited English proficiency?
- Does a higher readability scores negate IDVDMATS potency for a student with both learning disabilities and limited English proficiency

METHOD

Study Instruments and Teaching Procedures

AT Device: *Franklin® Language Master 6000b™*
The Franklin® Language Master 6000b™ (FLM-6000b) specifications are varied. The average cost for this device is $107.00 USD. The FLM-6000b provides instant access to 130,000 words, 300,000 definitions, and 500,000 synonyms. It is an independent device which makes it portable and battery powered. The FLM-6000b includes the Merriam - Webster® dictionary. There are two models of the FLM-6000b: 6000b/6000SE. The dimensions of the device are 5 1/2 x 5 3/4 x 1 1/2 in and weighs 12 oz. The power can be by battery, 4 x AAA, or by alternating current (AC) via an AC Adapter Jack. The FLM-6000b was designed to provide instant access to phonetic spell correction using ClariSpeech™ technology that is used for both words and definitions. An English grammar guide is included on the device to assist with grammar confusion. Twelve word games are available for students to experiment and play with language: Anagrams, Jumble, Word Builder, Flashcards, Spelling Bee, Memory Challenge, Hangman, Word Blaster, Word Train, Deduction, Word Deduction, Letris. A user list

allows the user to save past words typed in the device for later study or game play with the twelve listed games above. FLM-6000b includes an 8-line display screen. The user controls contrast using a small wheel on the right side of the device marked by ◑. The FLM-6000b allows the user to adjust the font size. The device is designed to save battery power with automatic shutoff. The FLM-6000b has computerized word say back function that is assessable using the "SAY" button. A headphone jack allows the user to connect and quietly use the computerized speech functions of the device. The volume control wheel is below the contrast wheel and allows the user complete sound control. A battery low indicator aids as a reminder to replace batteries.

Individualized Direct Vocabulary Discovery Method with Assistive Technological Scaffolding
The Individualized Direct Vocabulary Discovery Method with Assistive Technological Scaffolding (IDVDMATS) is a student centered approach that allows the student to have control and pleasure while learning. Control and pleasure are two needs a brain must have fulfilled to be productive and functioning (Zull, 2002). Before students are introduced to IDVDMATS, students must have experience with the technology to be used as prescribed by past research. The Institute for Research on Learning, warn, "The technology learning curve tends to eclipse content learning temporarily-both kids and teachers seem to orient to technology until they become comfortable" (Goldman, Cole, & Syer, 1999,. 5). Therefore, the student learned the functions and gained orientation experience while using the FLM-6000b before reading strategies in the IDVDMATS were introduced. Also, note the importance of the "I" (individualized) from IDVDMATS. Individulaization is as important as the technology or books used and is the ultimate best practice for students with special needs (Gentry, Fowler, & Nichols, 2007; Ryndak & Alper, 2003). The method below was adapted for students, like the participant in this study, with vocabulary acquisition problems who relied on visual cues to learn new vocabulary words. Also, the method was developed based on research and the information gained from pre student and teacher interviews as well as the student's prior knowledge and experience with technology.

LESSON STEPS:

Part 1- Reading & Finding Unknown Words

1.) The researcher and the student select a text (i.e., trade book) to read together in a read aloud.

2.) The student is asked by the researcher to find words he/she wishes to know more about as the researcher and/or student reads the selected text aloud.

3.) In accordance with the interactive reading activities design of pre, during, and after, the researcher plans the pair read aloud with prediction (e.g., "What does the title or picture on the cover tell us about the story we are reading today?"); Prediction and discussion occurred as needed.

4.) The student may stop the reading to point to a word that is unknown. The researcher writes the word on a small sticky note and places it on the page for quick identification of unknown words. A discussion of the word may occur. The student may type in the word on the FLM-6000b to be defined and said aloud using the SAY key to compliment the discussion.

5.) After the teacher and student's pair reading activity has progressed for an age appropriate time, the researcher turns the pages of the text read with the student in the search for words of interest. The student with the researcher's encouragement selects words of interest. The researcher may guide the

student to a word for consideration. The word choices should be words characterized by the student as limited or having no semantic understating. The researcher places a small sticky tab to mark the words for easy identification when reading through the second time.

6.) Once a word is selected, the student types in the word on the FLM-6000b to be defined and said aloud using the SAY key.

7.) The student reads the definition and uses the appropriate functions to have unknown words in the dictionary screen read aloud and/or defined as necessary. During this process, the researcher conferences with the student concerning his/her word selection and discovery.

8.) The student adds the word for later vocabulary game play and study using FLM-6000b LIST function key.

9.) Researcher point to the chosen words in the text. Remember that sticky tabs may be used to mark words. The researcher may not read the chosen words but asks the student to say the word and tell the meaning of the word. The researcher and the FLM-6000b assist when necessary.

Part 2 - SemanticVisual Representation and Guided Practice

10.) Visual representation is a process where the student and teacher select or draw pictures to represent the meaning of each word in the context of the definition from the text read. The teacher and student uses the LIST function on the FLM-6000b to track unknown words from the text read and finds the words in the text read using the sticky notes as a guide. The student draws or the teacher/student find pictures based of the context of the word in the text, the pictures provided by the text (if any), the definition from the FLM-6000b, and researcher/student interactive discussions (See Figure 1).

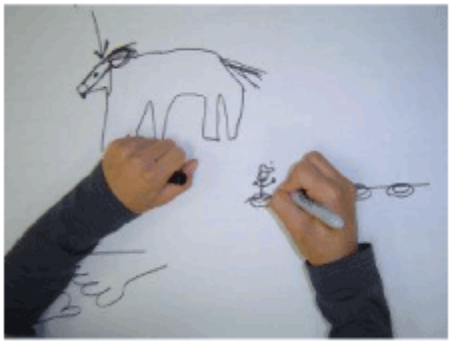

Figure 1. SD's drawing representation for the vocabulary word entrenched.

11.) After visual representation activities, the learner may engage in several guided practice activities. New learning may be practiced using several creative Learning Expression Choices (LEC): a.) sharing discovered word lists by playing one of twelve FLM-6000b games with a peer, b.) performing skits or tableau expressing word meanings for a peer to guess while viewing the actor student's word list on the FLM-6000b, c.) create a song or dance expressing the discovered word(s) and meaning(s), or d.) allow the student to express learning in his/her unique way. With LEC, the possibilities are endless.

12.) For a solitary guided practice activities and learning, the student may play one of 12 vocabulary games, study his/her word selections using the FLM-6000b LIST function for review, or review flash cards to match words to pictures selected or created during step ten. The student may review their list words and their definitions as well as their enunciations using the FLM-6000b.

13.) Steps two through twelve are repeated until all words are expressed visually.

Part 3 - Formative and Summative Assessments

14.) Formative Assessment: Using Power Point 2003 or other multimedia formats, researchers constructed games using the chosen vocabulary words for a student to match selected or drawn pictures in the context of a sentence from the text read to the correct vocabulary word. Researchers monitored the enunciation of the selected words as well as correct word matches. A student may use the FLM-6000b for help with definitions and enunciations (See Figures 2 and 3).

Figure 2. ***a) (left)*** *Photograph of the Franklin Language Master 6000b retrieved from http://www.franklin.com/estore/dictionary/LM-6000B/.* ***b) (top right)*** *The liquid crystal display illustrating the dictionary function of the Franklin Language Master 6000b for the word ominous. c) (bottom right) A slide from the formative assessment Power Point 2003 game illustrating the students picture drawing for caissons.*

Figure 3. A slide from the formative assessment Power Point 2003 game illustrating the Student's picture drawing for caissons and the illustrator's painting for caisson from the Last Brother: A Civil War Tale (Noble, 2006). This slide appeared when the student selected the correct hyperlinked word caissons from three words choices on a pervious slide.

15.) Summative Assessment 1: Using Power Point 2003, researchers construct a new story based on the book for a student to enunciate and to tell the researcher the meaning of each word after a reading is completed per slide. Enunciations and the correct defining of vocabulary words from new story were monitored. Unlike the formative assessment, pictures are found in the peripheral and not in a missing word blank (See Figures 4).

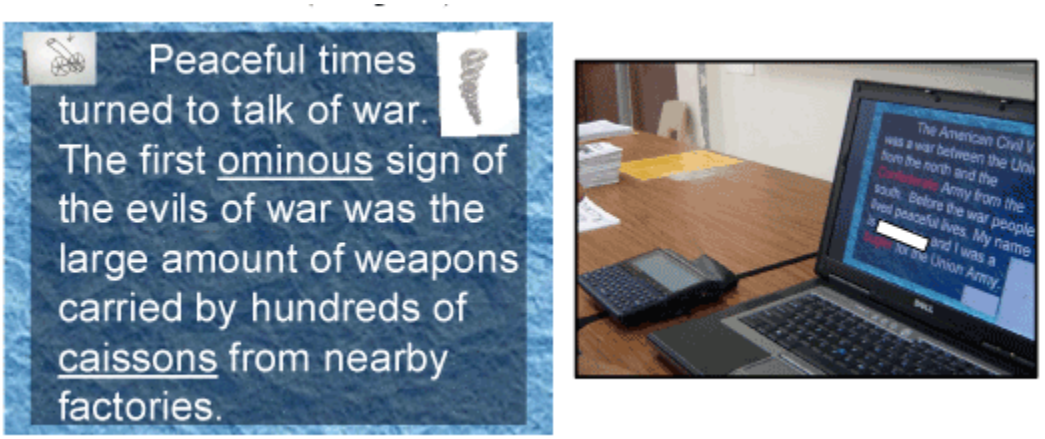

*Figure 4. **(Right)** A Power Point 2003 slide from the teacher created book utilized during summative assessment 1 and by using two vocabulary words with student generated picture drawings in the periphery. **(Left)** SD during summative assessment 1 read a Power Point 2003 slide which represented many slides from the laptop computer used which included two vocabulary words with corresponding picture drawings in the periphery. SD was the main character in the story. SD's name was omitted with a white box.*

16.) Summative Assessment 2: The Student viewed each word on 9.5'' X 11'' flashcards. As the researcher pointed to each card, the student enunciated the words and provided the definition of the words without text context, picture support, or the use of the FLM-6000b (See Figure 5). This was monitored.

Figure 5. One of the 9.5'' X 11'' flashcards used in Summative assessment 2.

17.) Summative Assessment 3: Using a paper story board sheets, the student constructed a written story as well as corresponding illustrations using the selected vocabulary words in a storyboard format. The student was asked to read the created story. Enunciation of the words and definition understanding s from oral explanations without the use of the FLM-6000b were evaluated (See Figure 6).

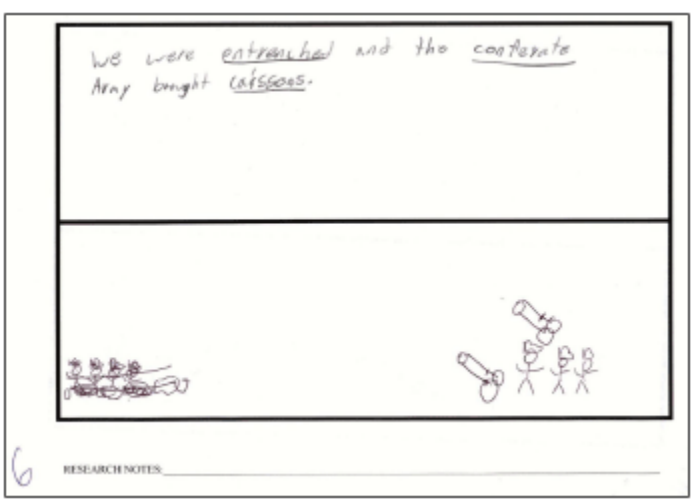

Figure 6. An example of a story board piece which SD placed as the sixth page of his story. He illustrated the story using picture drawing ideas from his previous vocabulary word drawings.

18.) Summative Assessment 4: the drawings from the student's created story were scanned and stored on a laptop for later use. The researcher typed the student's story and pasted corresponding pictures to Power Point 2003 slides following the student's story board (See Figure 6). The student used Power Point 2003, to make adjustments to the story (e.g., change wording, add clipart, add sounds, slide arraignment, etc…). The student shared the story as well as corresponding illustrations with the researcher. Enunciation of the words and definition understanding s from oral explanations without the use of the FLM-6000b were evaluated (See Figure 7).

Figure 7. A Power Point 2003 slide representing SD's story using two of his vocabulary words. The sound of swords hitting each other constituted the sound effects SD chose for this segment of his story presentation.

19.) Summative Assessment 5: Using Power Point 2003, the student shared the story as well as corresponding illustrations with peers. The student explains the meaning of each word after reading sentence(s) per slide. Enunciation of the words and definition understanding s without the use of the FLM-6000b were evaluated (See Figure 8).

Figure 8. SD after he presented his new story to his class via Power Point 2003 and a data projector. SD's face, name, and picture were blotted out to maintain confidentiality.

20.) This whole process can begin again with the selection of a new book.

Design

This case study employed a descriptive design (Strauss & Corbin, 1990; Yin, 1993, 1994). Therefore, the case study operated in four phases: pre, implementation1, implementation2, and post. Following individual case study application procedures for a limited population of interest, one participant, SD, a student with learning disabilities and LEP, was selected by the school district for participation in the study (Hancock & Algozzine, 2006). The descriptive case study approach has been widely used and employed by special education researchers (e.g., Pyecha, 1988). Also, because little research addresses the use of assistive technology's blending with best practices to aid students with special learning needs in vocabulary acquisition, case study methodology was utilized and deemed appropriate by special education experts at Tarleton State University. Because case studies have traditionally been deemed by many scientists as unscientific or unsuitable, care was taken in developing the methodology (Hancock & Algozzine, 2006). Yin (1994) cited six data sources for case study research. All six sources are not absolutely essential in every case study. However, a myriad of sources of data add to the reliability of a case study (Stake, 1995; Yin, 1994). The following are the six sources specified by Yin (1994): documentation, archival records, interviews, direct observation, participant observation, and physical artifacts. Following data source triangulation research ideology (Denzin, 1984), this study utilized all six sources specified by Yin (1994) to provide a vivid, descriptive picture of the student's learning experience in the framework of an interactive lesson methodology, the IDVDMATS approach.

During pre several interviews occurred. The student participates were directed, "Tell me about the times you have learned new words and definitions." Also, a question was asked, "What do you think could make learning new words and definitions easier for you?" The teacher was prompted to describe the the student as a learner and reader, and how the student learned vocabulary best. The student participant responded to the Elementary Reading Attitude Survey (McKenna & Kear, 1990). Once the pre phase concluded, the FLM-6000b was introduced.

Within the implementation1 phase, the student was introduced to the FLM-6000b's functions and uses by the researcher. Specifically, the student was taught how to use the dictionary, SAY, LIST, GAMES, navigation, and input functions of the FLM-6000b. A student may play with the device and ask teachers questions concerning device functions. At the conclusion of implementation1 phase, exit interviews were conducted. A single question relating to the FLM-6000b was asked, "What did you think the lesson today? Explain?"

During the implementation2 phase, the student used the FLM-6000b as the AT while following the IDVDMATS instructional method. After each day's work in the study in an exit interview, the student was asked, "What did you think about the lesson? Tell me about the lesson?" The student followed the steps of IDVDMATS from part 1 to part 3 as the study progressed. After the initial lesson as described in part 1, the researcher met ten times with SD. These meetings range from approximately an hour to an hour and 30 minutes. The meeting times depended on school and researchers' schedules. After each meeting, the researcher copied the vocabulary words from the FLM-6000b LIST feature onto paper as a record and for safe keeping of the data. An exit interview question was asked after each of the meetings, "Tell what you think about your work today?" The researcher probed for clarification as needed depending of responses from participants. Also, the book chosen had its readability evaluated.

The post phase of the study commenced once a reading was completed in part 1 and 2 of IDVDMATS. The student progressed from a formative assessment and five summative assessments using the word list generated on their FLM-6000b in part 3 of IDVDMATS. In the formative assessment researchers counted correct picture to word matches and correct word enunciations out of the total number of words. The student was allowed to use the FLM-6000b for help with definitions and enunciations (See Figures 2 and 3). Within summative assessment 1, researchers constructed a new story based on the book for the student to read. Enunciations and the correct defining of words were monitored per slide. Unlike the formative assessment, pictures were peripheral and not in missing word blanks (See Figure 4). Summative assessment 2 required the student to view each word on 9.5'' X 11'' flashcards. As the researcher pointed to each card, the student enunciated the words and provided the definition of the words without text context, picture support, or the use of the FLM-6000b (See Figure 5). This was monitored. Summative Assessment 3 allowed the student to use a paper story board to construct and sequence a written story as well as corresponding drawings using the selected vocabulary words. The student was asked to read the created story. Enunciation of the words and definition understandings without the use of the FLM-6000b were evaluated (See Figure 6). In summative assessment 4, drawings were scanned and stored on a laptop for later use. The researcher typed the student's story and pasted corresponding pictures to Power Point 2003 slides following the student's story board (See Figure 9). The student used Power Point 2003, to make adjustments to the story (e.g., change wording, add clipart, add sounds, etc…). The student shared the story as well as corresponding illustrations with the researcher. Enunciation of the words and definition understanding s without the use of the FLM-6000b were evaluated (See Figure 7). In summative assessment 5, the student shared the story as well as corresponding illustrations with peers. The student explains the meaning of each word after reading sentence(s) per slide. Enunciation of the words and definition understanding s without the use of the FLM-6000b were evaluated (See Figure 8). After the student presentations, teachers were asked to describe their impressions of the vocabulary learning experience with AT.

In all assessments if the student does not enunciate the word correctly, the researcher provided the enunciation of the word for the student and had the student repeat it back. If the student did not know the definition, the researcher provided the student the definition. At the conclusion of the assessments, the student was handed the FLM-6000b and asked to review his word list using the LIST function. In an exit interview, the student was asked, "Why did you chose these words from your reading?" The researcher asked two final questions, "What do you think about reading books and finding vocabulary using (point to device) FLM-6000b? and "What did you think about how you learned new words from a book (point to book used)?" Also, the teacher was interviewed and asked to explain her thoughts, concerns, and ideas about the IDVDMATS. The learning disabled/LEP student participant responded to the final administration of the Elementary Reading Attitude Survey (McKenna and Kear, 1990).

Setting and Participant

The intermediate school which served grades 5 and 6 was located in a central Texas rural community. Student to teacher ratio ranged from 15 students to 1 teacher. The largest industries are dairy farming and a four year university. In the 2007 school year, the campus served 540 students. By ethnicity the following constituted the campus population: African American 1% (5.4), Hispanic 19% (102.6), Native American 1% (5.4), and Anglo or others represented 79% (426.6). Special education population represented 5.9% (32) of the population. Students with learning disabilities and those who were served with English as a second language services represented 5% (27) and 7.4% (40) of the total population, respectively.

SD was served as a student with learning disabilities and as an English second language learner. SD was a curious young man who voiced a love for school. He was Hispanic and valued his culture and Spanish language. SD spoke English fluently but had trouble reading and writing in English. SD enjoyed books about war history and weapons. SD was administered the 2007 alternative state developed test for reading and answered 75% of the items correct. His teacher referred to him as having a positive attitude toward learning. Continuing from teacher statements, SD's family valued education and supported the school's efforts to educate SD. SD had experience with using Microsoft software technology like the 2003 versions of Power Point and Word.

Data Sources

Quantitative Data Sources and Instrumentation

Vocabulary Word List. Vocabulary words and their corresponding definitions came from the words SD stored on his FLM-6000b list function area. The words were used through the IDVDMATS's lesson procedures.

Elementary Reading Attitude Survey. The Elementary Reading Attitude Survey (ERAS) (McKenna and Kear, 1990), also known by educators as the Garfield, is used to measure reading attitudes of children in elementary schools. The ERAS was designed for students in grades 1 through 6. The survey contains 20 questions which begin with, "How do you feel," introductory words. The students respond to the items on a Likert type scale with 4-point intervals. Students choose 1 of 4 pictorial representations depicting Garfield, a cartoon. Students select the character that matches their feelings. The Garfield cartoons' emotional expressions range from "very happy," "a little happy," "a little upset," and "very upset." The survey evaluates two separate areas of reading attitude: academic reading and recreational reading. Each area has 10 items.

McKenna and Kear (1990) surveyed over 18, 000 elementary students to determine validity for grades 1 to 6. Internal consistency ranged from .74 to .89 Cronbach alpha coefficients. ERAS construct validity for recreational and academic reading was determined by comparing students from various groupings. Using factor analysis and score comparison, researchers determined construct validity for each subscale of the ERAS. Survey testing produced significant differences ($p<.001$). Recreational reading attitude validity was determined by comparing scores of students: with library cards (mean=30) versus without library cards (mean=28.9), checked books out from the library (mean=29.2) versus did not check out library books (mean=27.3), and less than one hour of television a night (mean=31.5) versus more that two hours of television a night (mean=28.6). Furthermore, academic construct validly was determined by comparing scores of high ability readers (mean=27.7) with the scores of low ability readers (mean=27.0). As an indication of reliability and validity, numerous studies (Bottomley

et al., 1999; Kush & Watkins, 1996; Lazarus & Callahan, 2000; McKenna et al., 1995) have used ERAS as a measure of reading attitude.

Scoring ERAS is determined by student responses. The point values ranged from 1-4: 4= "very happy," 3="a little happy," 2="a little upset," and 1="very upset." Students have a possibility to score a maximum of 20 points and a minimum of 10 points per subscale (i.e., recreational or academic). A total score combining both subscales exerts a maximum of 80 points and a minimum of 20 points. The higher the score on individual subscales and the subscales total combination the more positive the score's measure.

Readability Matrixes. Each text was evaluated for readability using three established measures: Gunning Fog Index (GFI), Flesch Reading Ease Score (FRES), and the Flesch-Kincaid Grade Level Score (F-KGLS)(Kincaid, Fishburne, Rogers, Chissom, 1955; Flesch, 1946, 1948, 1949,1960; Gunning, 1968). Although the researchers of this study do not agree with all the philosophies behind such formulas (e.g., shorter sentences are always better), these formulas do offer an indication of difficulty for a reader when comparing texts (Weitzel, 2006). DuBay's (2004) synthesis of research asserted readability formulas as well researched and proven as a valid/reliable means to compare texts' readability according to a standard. Please note—it is not the philosophy of the researchers in this study to match texts with students based of readability scores. Students reading text with difficult words or longer sentences benefit learners with appropriate scaffolding from significant others (Fountas & Pinnell; 2006).

The Gunning Fog Index (Gunning, 1968) like the Flesch-Kincade Grade Level Score (Kincaid, Fishburne, Rogers, Chissom, 1955) indicate the number of years of education required to understand the text. The Flesch Reading Ease Score does not provide a grade level but offers an interval scale to measure readability. For example, the text which scores closer to 100 is considered easier to read.

Qualitative Data Sources

Student Oral Interviews. Oral student semi-structured interviews occurred in pre, implementation1, implementation2, and post phases of this study. Interviews were videotaped and dialogue was transcribed to serve as a record of SD's experiences and perceptions.

Researchers' Observations and Field Notes. Supporting data sources included the researchers' observations and were recorded in field notes. This was not be systematic and occurred when the researcher noted something considered deserving of further inquiry or observation.

Story Board and Student Edited Power Point Creation. The story board creation depicting a unique storyline using the 18 selected words and the Power Point 2003 depiction of said story with added sounds allowed a view of the student's interactive story making capabilities. These artifacts provide tangible evidence representing SD's progress through the IDVDMATS approach .

Data Analysis

Quantitative Data Analysis

Vocabulary Growth Analysis. Vocabulary growth is specifically defined as the number of vocabulary words enunciated correctly in the post phase assessments out of total discovered words on each of the FLM-6000b student's generated vocabulary list created during implementation2. Also, vocabulary growth includes the number of word meanings correctly stated or expressed out of total number of

word meanings on each of the FLM-6000b student's generated vocabulary list. Once frequency counts are completed, descriptive statistics were calculated and reported for enunciations and word meanings per assessment. A total vocabulary growth score combined the frequency count of vocabulary words enunciated correctly (WEC) and the frequency count of correctly stated word meanings (CSWM) from all assessments (i.e., formative to summative assessment 5). Continuing, a total vocabulary growth was calculated by the combined frequency count sum of WEC and CSWM (i.e., ΣWEC + ΣCSWM) which was divided by the total number of opportunities to enunciate (OE) and state meanings (OCSWM) of SD's selected vocabulary words into a single score. This score was labeled total vocabulary growth score (TVGS). The formula for this calculation read: {((ΣWEC + ΣCSWM)/(ΣOE+ΣOCSWM))=TVGS}. The TVGS provided the percentage of combined correctly enunciated and correctly stated meanings total sum from the total sum of opportunities given a student to enunciate and state meanings of vocabulary words correctly. Therefore, the WEC, CSWM, and TVGSs for SD were reported. The numbers of correctly enunciated and defined words from formative to summative assessments were utilized. Frequencies and percentages were reported.

Elementary Reading Attitude Survey Analysis. The learning disabled/LEP Student's reading attitude scores were calculated from the ERAS pre and post surveys (McKenna & Kear, 1990). Gain and loss scores from pre to post were computed. From attitude surveys, a student may produce scores in three reading attitude ranges as follows: Recreational Reading Attitude (1-10), Academic Reading Attitude (1-10), and a Total score (20-80). A student with total reading attitude gain/loss scores below 41, between 41 to 50, or 51 and above were categorized as having negative, indifferent, or positive reading attitude ratings respectively. Descriptive statistics were generated.

Text Readability Analysis. The book chosen by the SD was evaluated using three readability formulas: GFI, FKGLS, and the FRES. Following the requirements for each readability algorithm, sentences were analyzed from three general areas in each text: beginning, middle, and end. Scores were obtained for each readability formula for the chosen text. Whole pages of text were analyzed per beginning (first three pages), middle (three pages from the center), and end (last three pages of textual story). An average from the beginning, middle, and end of the each text were computed for each readability formula, respectively. Descriptive statistics were reported.

Qualitative Data Analysis

With the desire to provide the research participants with a voice, grounded theory, phenomenological, and case study traditions' elements were used to glimpse the whole picture of the socially constructed process called vocabulary learning (Feagin, Orum, & Sjoberg, 1991). The natural setting takes preeminence over all forms of research for educational social scientist eager to discover practical solutions for the complex learning issues teachers experience in today's classrooms; hence, interviews, observations, artifacts, and archival records provided the medium to view this complex and at times incoherent view (Berg, 2004; Creswell, 1998; Marshall & Rossman, 1999,Yin, 1994).

Interviews, Perceptions, Field Observations, and Artifacts Analyses. Interview data were collected from SD through open ended semi-structured oral exit interviews which progress from pre, implementation1, implementation2 (parts 1&2), and finally post (part 3). All interviews and field experiences were recorded using an audio recorder and at times a video camera. Artifacts were photographed or digitally scanned for comparison descriptive analysis with field note observations, student/teacher field experience recorded statements, and interview data. The data was analyzed using Yin's (1994) general analytic strategy techniques of pattern-matching (Trochim, 1989) and explanation-building. Therefore, the analysis was based on the theoretical underpinnings which led to the case study. Also, to further enhance the study's validity, a descriptive frame work in the structure of

a lesson method, IDVDMATS, was utilized to provide rich details of the participant and researchers use of assistive technology blended with best practices to enhance vocabulary acquisition of students, like SD, with special vocabulary learning needs. The goal of this case study was to provide a

Findings/Results

The findings and results were reported in the framework of the IDVDMATS lesson. This lesson framework provides an organization to report with rich description the phenomena of IDVDMATS as experienced by SD, a student with learning disabilities and limited English proficiency. The following is a sampling of SD's experience.

Pre Phase: Before IDVDM -ATS

SD's Pre Interview. SD's responses to both pre questions were quick and short. He was quiet and reserved and answered in a whispering voice with a barely audible tone. This interview occurred in one meeting.

Researcher: Tell me about the times you have learned new words and definitions?

SD: I like to learn new words. When I remember new words, I feel good.

Researcher: What do you think could make learning new words and definitions easier for you?

SD: The pictures in my eyes…told me about words before. One time I forgot a word the teacher wanted us to know about. I asked her what the word is and said it a lot to remember it. I made what the word means in my words.

Researcher: What do you mean when you say "pictures in my eyes?"

SD: I see the word doing…word is there in a way to do…I see it a lot.

Teacher's Pre Interview. The teacher responded to two requests. The teacher described the student as a reader and explained how the student learned vocabulary best.

Teacher: SD is a strong reader as far as resource class. He is close to being on level. Oral reading and sight words are strong. Vocabulary knowledge is weak and a struggle. In the context and brainstorming in small group discussions…Visual cues work well. He works hard to do his best…It is pictures for him while he learns new words. He can put pictures on the computer for discussion and writing (The teacher was referring to Word and PowerPoint 2003).

Implementation1 Phase: Learning How to Use the FLM-6000b

Introduction and Practice Using the FLM-6000b. SD was shown the features of the FLM-6000b by the researcher and allowed to explore the uses of the device using words SD chose. The speech feature was understandable to SD when SD used words he already knew. However, when he typed in words he did not know from reading materials found on the teacher's desk, he had to listen to the word several times using the SAY function to understand the pronunciation. The researcher helped the student understand the pronunciation of one of the three misunderstood words pronounced using the synthesized speech function. Also, the definition of each word was explored. SD had difficulty reading and understanding two of the words' definitions during the FLM-6000b introduction. SD thought aloud as he tried to understand the definitions. For example, using one of the words he found on a

piece of paper, SD began unprompted self and student to researcher dialogue. I encouraged this behavior as the research project continued.

SD: There the word is…I know the say of it (He pushed the SAY function key to hear the word and he says the word immediately) ... Assessment…Which definition is it? (Looking at the researcher for a response).
Researcher: There are four of them. They can all be true…

SD: How do you know the one (He points to the screen)?

Researcher: The word assessment means different things…It depends on …

SD: I remember…It means…from the other words and sentences with it to help me know it.

Researcher: Yes…the fancy word for what you are describing is called using context clues. Using the words and sentences around a word to help know what the word means helps us.

SD: How do I do it without it being with other words? It is on the paper (pointing to the paper on the teacher's desk) all by itself here…I need more words to know it.

Researcher: SD, you are right. This is hard without more words or what I say is needed is context…

SD: contestant clues!

Researcher: context clues…

SD: context clues…context clues…I knew it.

SD typed and entered words in the FLM-6000b while communicating his thoughts and ideas aloud about the device and his past experiences with words he had learned. Similar dialogue expressions like the previous example above followed other word experimentations using the FLM-6000b. During the session SD asked about the different functions of the device. At times he sought hints or reminders from the researcher concerning the varied functions of the FLM-6000b. As time passed, he asked fewer questions as he typed in words from around the room, the teacher's desk, and from his memory.

SD's FLM-6000b Use Interview. After the experience with the FLM-6000b, the researcher asked one question. What did you think about using the FLM-6000b (researcher pointed to device)?

SD: Think it is good to help me learn new words. I liked the game hangman with the word bird. I won it. I want to learn it more.

Researcher: What more do you want to learn about it (pointed to FLM-6000b)?

SD: I want to know it more and the words I need to get…I like it.

Implementation2 Phase: During IDVDM-ATS
Part 1- Reading & Finding Unknown Words. This phase extended into three meetings which total time summed to three hours and thirty minutes. SD expressed an interest in war history and battles. After reviewing several books, SD decided on a book about the civil war entitled, The Last Brother: A

Civil War Tale (Noble, 2006). The average readability scores for the book placed the text above SD's grade level: GFI 8.82, FRES 78.19, and FKGLS 6.26. Although the book is stationed above SD's grade level with moderate reading difficulty, SD's high interest with the book selection outweighed any score.

Through paired, interactive reading, several words were discovered as problematic for SD in both enunciation and definition meaning. SD did not know the enunciations and the definitions of the following 18 words: bugler, dozed, outflanked, skirmishes, bayonets, battalions, brigades, regiments, entrenched, confederate, caissons, bombardment, ominous, reins, lunged, shielded, twilight, and etched. Each definition found in the FLM-6000b proved difficult to read for SD. SD scanned the book where the word was found and looked at the pictures as well as surrounding sentences to understand the meaning of the word in the context of the story. After reviewing the text, SD could understand the definition provided in the FLM-6000b. This was a time consuming process. The longest time spent on defining a word from the book was 17 minutes. The word confederate proved the most difficult. For example, the definition in the FLM-6000b read, "**1.** United in a league: Allied [or] **2.** Of or relating to the Confederacy." SD did not know the words united or allied. Also, SD did not know Civil War history well. However, SD used the FLM-6000b to define allied and united. He chose the following as possible definitions respectively, "[united] **1.** made one and **3.** Being in agreement…[allied] **2.** Having a family relationship." After reviewing the FLM-6000b's definitions and the book's pictures of the two opposing armies with supporting sentences containing confederate, SD came to the meaning. As he went through this process, the researcher asked SD to talk out his thoughts or think aloud. The following is an excerpt of SD thinking aloud about the meaning of confederate:

SD: It says [concerning united] made one or agreeing on something…[concerning allied] It says being family…[He presses the SAY key to hear the word confederate] confederate…confederate… They are a family? [SD looks at the books pictures and read the sentences with confederacy in it.] The problem in the Civil War was that the Confederate Army had the same calls. The Confederate Army is one side who agrees with their side and the Union Army [Union Army was from a different part of the book.] wore blue and that is the side Gabe [main character in the story] was on…the Confederate Army…gray…The Confederate fought the Union side as one fighting army. I hope Gabe is not hurt by the confederate Army; he is on the blue side.

Researcher: Good work SD…Let's see what happens next. So Gabe is on the blue side, the Union…What is going to happen?

SD: Will he get hurt? He is just playing a horn. He is going to a war battle.

Researcher: Well…we can find out by reading more… [The process continued.]

The average time for all 18 words was 5.2 minutes. The longer it took to define a word, the longer it took to reorient back to reading the book. After looking up confederate and using the FLM-6000b, the researcher labored to help SD get back on the story line using the interactive reading approach (Fountas & Pinnell, 2006). SD wanted to know what was going to happen to Gabe and constantly asked about other characters and a horse's well being from the story.

The SAY function proved easier to use for SD. After he typed an unknown word in the FLM-6000b, he was able to pronounce it. However, he pressed the SAY key two to three types per word before enunciating each word. His ability to use the FLM-6000b improved with each use. After the word

confederate, SD did not ask any more questions about how to use the FLM-6000b. He used it without asking what button to press next or what screen is currently being viewed.

Part 1 - During Exit Interviews. SD began to talk more as he became more familiar with the book and the assistive technology device. He shared the following at the closing of the three meetings during this phase in response to the same exit interview question: "What did you think the lesson today? Explain?"

SD (*Meeting 1*): It was good. I liked to find out the word bugler [Also, went to the word on his list and pressed say to hear it.]. The black computer [FLM-6000b] is neat to find words and tell them out to you. I know the words faster and don't have to look in a fat dictionary book.

Researcher: Why do you not like the dictionary as a book?

SD: I don't know how to spell it and I get lost in it…I end up asking someone anyway. I will just ask the black computer. It not only helps me spell it but says it so I can know it. I am just faster to use it.

SD (*Meeting 2*): I liked learning the word outflanked. This means you are in trouble because the enemy soldiers, like the gray to Gabe, could get you. Confederate was a hard word. I am glad not all the words were like that. I had to learn [define] words in the screen using it [SD points to the FLM-6000b.] to get the first word I typed from the book. I want to type all the words I don't know to get when I need to remember them in class.

SD (*Meeting 3*): The word ominous is something about to happen that is bad…evil. I think it is like when I see the tornado that came and the sky is dark and scary. If the tornado hits, we could get hurt… I have eighteen words on my list [SD presses the LIST function and points to the screen on the FLM-6000b.] I like the list because I know the words I need to learn to know the story [SD began to press the SAY key to hear some of the words from his list]…I like the thesaurus. I did know about a screen [SD is referring to the thesaurus screen function on the FLM-6000b.] that gives you same and not same words for a word. I used the thesaurus screen to get the word skirmish…I knew that short conflict with military means to fight.

Part 2 - SemanticVisual Representation and Guided Practice. SD preferred to draw pictures which tell the meaning of the words from the book read. Using the FLM-6000b's LIST function with support from the book's pictures and surrounding sentences or words, SD began to draw pictures which go with the each word's meaning (See Figure 1). The dialogue between SD and the researcher as well as SD's think aloud illustrated the thinking as SD drew. Part 2's duration occupied two meeting times. The following are excerpts from his drawings of confederate and ominous, respectively.

SD (*Word - confederate*): What can I draw for [SD presses SAY function to hear confederate.]…confederate…confederate …

Researcher: What does it mean?

SD: Means family or being one on something…They were different that the blue…they wore gray and fought the Union. Orlee was a Confederate bugler [Orlee was a southern boy who meet Gabe in the woods. They became friends in the story. SD found Orlee in one of the book's illustrations and pointed to it]

Researcher: What will you draw?

SD: I will draw Orlee…no I will draw agreement… That is what confederate means. I will draw two hands shaking like they agree. You know this could be a picture that shows the Union…the blue were agreeing to fight the gray side.

SD (*Word-ominous*): [SD types the word ominous in the FLM-6000b and presses the SAY function key to hear the word.] Ominous…ominous…The tornado is a bad sign…ominous… of bad to come…fortune teller of evil to come…[SD made wind sound as he drew the tornado representing the word ominous.].

Researcher: What will you draw to represent ominous?

SD: I will draw a tornado…I guess that's all…

For more practice with SD's chosen words after all the drawings were completed, SD decided to forego the LEC ideas and engage in a solitary guided practice activity using the GAMES function on the FLM-6000b. SD played hangman with the words. SD was able to guess ten of the words with two to three letter hints.

Part 2 - Semantic Visual Representation and Guided Practice Exit Interviews. SD was asked, "What do you think of the lesson?" after the two day drawing exercise. SD responded with the following statements…

SD: I like the drawing and practicing the word with the SAY [SD pointed to the SAY key on the FLM-6000b.] I want to do this with my other words.

Researcher: What other words?

SD: Not the words from the war book….The words in science class could be knowed [sic] to me…

Researcher: What did you like about drawing the pictures?

SD: I liked…liked…I don't know…. I liked knowing it with one thing [SD pointed to his picture representing etched, one of the last pictures drawn. He was referring to the picture as holding the meaning to the word as one object.]… It is easier to do it like that.

Researcher: Did you find anything hard about the picture drawings?

SD: yes.

Researcher: Tell me about it.

SD: The words confederate and ominous were hard to do pictures for…. They were words without something…I had to make it something to be a drawing for the word…. I knew the word and thought of the drawing picture to make.

Part 3 - Formative and Summative Assessments: *Post IDVDM- ATS*
Formative Assessment. The researcher created a game based on student and teacher's input. Both the teacher and the student used sound to express vocabulary word meanings with action. For example, SD mimicked a wind sound when drawing the word ominous and relating it to a tornado. The teacher often

associated sounds with stories, poems, and words to clarify meaning. For example, in her unit concerning pioneer life, she vocalized a scraping sound as she described the process of husking corn. The researcher found sounds on the internet (http://www.findsounds.com/) relating to the 18 words. These sounds played when SD chose the correct vocabulary word. All of SD drawings and some of the illustrations from the book were scanned into the computer as jpeg files and placed in Power Point 2003 slides with sentences directly out of the text which used the vocabulary words. SD was instructed to read the sentence and select (click) the correct vocabulary word from one of three vocabulary words represented by hyperlink buttons at the top of the slide. A blank space occupied by a picture clued the student to what word was needed (See Figure 2 and 3). SD was able to match 16 of the 18 words with pictures. The two words he could not match were confederate and lunged. Also, these two words proved difficult for SD to enunciate and state the meanings. SD looked at his list on the FLM-6000b and retrieved the two words definitions and enunciations. Once he reviewed the two words on the FLM-6000b, he was able to enunciate and correctly match pictures to vocabulary words.

Summative Assessment 1. The researcher created a story using the 18 words in the same context of the original story following a similar story line. In this version, the researcher made SD the main character. From the reading of the new story created by the researcher, SD was able to enunciate and state word meaning during and after slide readings (See Figure 4).

Summative Assessment 2. SD was able to enunciate 17 words correctly. However, the meanings of two words were confused. SD mixed the meanings of ominous and bombardment and was unable to enunciate skirmishes. Once the assessment concluded, the researcher placed the pictures representing the three confused words before SD. Also, SD used the FLM-6000b to review his list and found the three words giving him trouble with the meanings or enunciation. SD pressed the SAY key to hear the words and used this same function within the definition portion to hear certain words. After the picture and FLM-6000b review, SD immediately knew the meanings and was able to enunciate skirmishes. He expressed the following during this exercise.

SD: I see them…bombardment is just a cannon shooting cannon balls. Ominous is the coming of the tornado [SD makes wind noise with his mouth.].

Researcher: I noticed you were able to pronounce the words but had trouble with these words' meanings. What do you think about that…what happened?

SD: I forgot about the tornado picture and saw the cannon balls coming down to hurt people. The cannon balls coming are… hurt to come to you. I see now…. I thought…the cannon balls are coming. Bad things are coming. They [cannon balls] were [SD presses the SAY function key on the FLM-6000b on the word THREATENING which is found in the definition of ominous (See Figure 2). After hearing the word, SD pressed enter on this word to see the definition of THREATENING (See Figure 9).]. You see…threatening means warning….

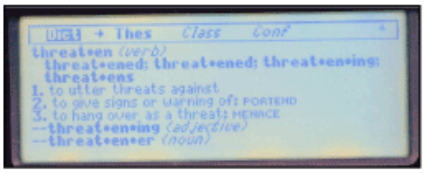

Figure 9. The definition for threatening using the definition function of the Franklin Language Master 6000b.

SD: Skir…[SD pressed the SAY function key on the FLM-6000b to hear the word.] Skirmishes…that's that fighting word called [pressed Say key to hear words again] skirmishes…They use the bayonets to skirmish with each other in the Civil War.

Summative Assessment 3. Of the assessments, this was the most time consuming—involving two meetings. SD used the flash cards from summative assessment 2 to begin his story using the 18 words. After he used a word or several words on a story board page, he drew an X on the flash card containing the word used. He wrote sentences using all the words and drew pictures illustrating the action in the story. Some of the pictures used were similar to the ones he drew for certain words (See Figure 6). He correctly used each word following the newly learned definitions. SD followed the story line of the book and researcher's story. Like the book and the researcher's story, SD pursued the Civil War theme. As SD wrote, he arranged and rearranged the words and rewrote sentences to create a story in logical sequential order. This seemed to be natural for SD. He said, "I like the story I know and the one I can do too." Similar to the researcher's story, SD placed himself as the main character. SD portrayed himself as a bugler; however, he as gave himself a fighting role and that of a hero who saved the life of a fellow soldier (See Figure 10). The ending of his story was similar to the original book and the researcher's story (See Figure 11). After SD completed his story and arranged it in the order he felt was appropriate, he read it to the researcher. SD enunciated and correctly used all 18 words in his story.

Figure 10. A page from SD's story board during summative assessment 3 in which he assigns himself the persona of a hero who saves a friend from danger.

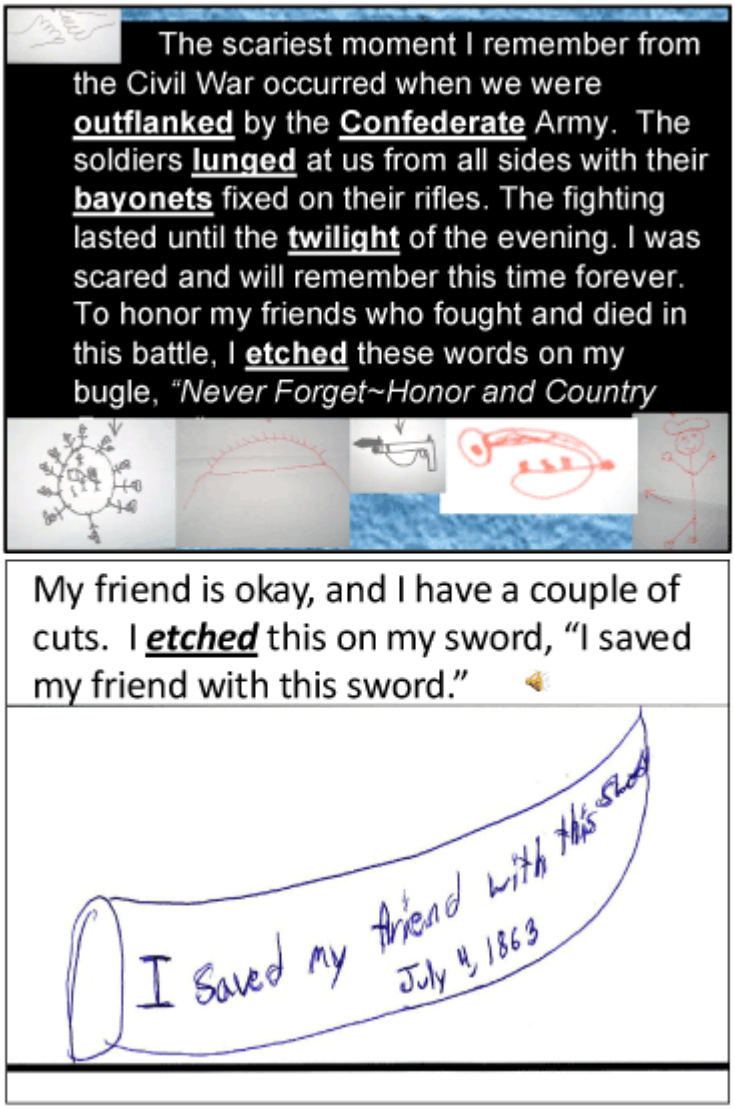

Figure 11. From top to bottom, the Power Point 2003 slides created by the researcher during the summative assessment 1 and summative assessment 4, respectively, followed the same ending to the story from the mentor text used, The Last Brother: A Civil War Tale (Noble, 2006). The slide had a sound of etching in the background as represented by the speaker icon.

Summative Assessment 4. The pictures and sentences were placed in the order specified by SD in summative assessment 3. Changes were not made to the story sequence or story line. SD wanted to place his picture on the first slide, and he wanted peers to hear him say, "What's up!" Therefore, the researcher photographed SD with a digital camera and recorded him saying, "What's up!" These were placed in the first slide of SD's story. SD became enthralled with sound. SD's asked if some of the sounds from the game during the formative assessment could be used in his story. This process progressed for two meetings. For example, the sound of someone snoring was used with the word dozed just as it was used in the formative assessment upon a correct response. The researcher and SD listened to sounds and placed them where SD specified in his Power Point 2003 story. In some of the slides SD wanted his voice to be used. For example in the slide where he used three similar meaning words (brigades, regiment, and battalions) his voice pops up saying, "Are you ready guys?" (See Figure 12). Also, the researcher allowed SD to choose sounds from a sound search internet site

(http://www.findsounds.com/). Once completed, SD read his story to the researcher. All 18 words were enunciated and had meanings correctly stated.

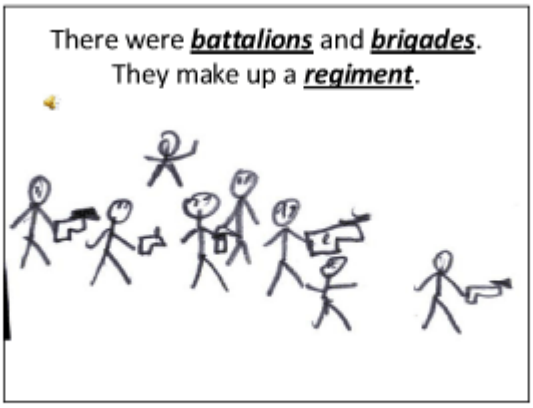

Figure 12. A Power Point 2003 slide from SD's book using three of the 18 vocabulary words. The icon is the recording of SD saying, "Are you ready guys?"

Summative Assessment 5. SD presented his story via Power Point 2003 to his fellow students, teachers, and principal within his special education language arts resources class. After the sound effects subsided on each slide, SD read the story. After reading, SD enunciated the vocabulary words and explained the meanings per slide. His peers clapped and laughed when they heard the sounds, and SD laughed with them. He enunciated and correctly explained the meanings for all 18 vocabulary words in his story. After this exercise, spontaneously, students began to ask SD questions:

Student 1: SD, how did you do the sound and pictures on the computer?

SD: I put them in with Dr. Gentry from the internet, and we had pictures I drew put in the computer to use.

Student 1: I want to do it next….

Student 2: I like the story SD. How did you know to write it?

SD: [Holding up the book, The Last Brother: A Civil War Tale (Noble, 2006)] I looked at this one….I liked the Civil War.

SD's Post Interview. SD responded to three questions, a)Why did you chose these words from your reading; b) What do you think about reading books and finding vocabulary using (point to device) FLM-6000b; and c) What did you think about how you learned new words from a book (point to book used)? The following is an excerpt of the responses to the questions above, respectively.

SD(a): I did not know them before I read them. I wanted to know what they meant and what they said for the story…. I liked the book and need the words… to know it.

SD (b): The computer [FLM 6000b] helped me. I liked having a place to go and see the words I need to know [SD is referring to the LIST function on FLM-6000b.]…When I could not say it or see it [recognize it], I could press SAY, and I heard it said… The only thing hard were some of the words tell

what the word meant. Sometimes I had to look at other words [SD is referring to using the FLM-6000b to define words in the definition of other words or the use of the THES or thesaurus function to find the meanings of unknown words.] to know the word…. I want to use it in other classes and other books to know their words. I think I will like that…Sometimes I could not tell what the word was and had to push the SAY button to keep hearing it. I was able to get it, but I wish it [SD pointed to the FLM-6000b] sounded like me [SD pointed to the speaker grid on the FLM-6000b]…need it to sound better to really get it in one time.

SD (c): This was the best story I read and know the words. I like the time to know the words and the games I played with the words on hangman. I hope I can do it again… all my friends in class now wish they were me…. I can read a new book and know how to find out what some words mean. I think I will do it once you give the computer to Mrs. BV…. She told me I could teach her and the class how to use it.

Teacher's Post Interview. The teacher reported positive results as well as concerns with the IDVDM-ATS process. The teacher expressed that SD enjoyed the project and the one-on-one instruction. She described his self-efficacy about learning new words as improved and evident as he learned new words in class. The only concerns she expressed related to the availability of the technology (FLM-6000b, computers, and Power Point 2003) for staff and students to have the time to learn and then apply it to vocabulary learning.

Teacher: SD enjoyed his project…He seemed to not only improve vocabulary and comprehension, but also confidence as he shared his accomplishments with adults as well as peers. He enjoyed using technology along with the book and was enthusiastic about the outcome of this project…. I hope we can do this…but we do not have a large amount of time we can spend in the computer lab.

SD's Elementary Reading Attitude Survey: *Pre & Post*
SD's ERAS (McKenna & Kear, 1990) raw scores with corresponding percentile ranks for pre and post were 35/87, 36/91 recreational; 36/96, 37/98 academic; and 71/95, 73/97 full scale, respectively. SD produced a 4 point percentile rank gain in recreational reading attitude, a 2 point percentile rank gain in academic reading attitude, and represented a full scale gain of 2 percentile points between pre and post survey administrations. According to the ERAS, SD had a positive reading attitude during pre and post administrations.

SD's Vocabulary Growth Measure from Post Assessments of IDVDM-ATS
SD's TVGS was 96.76%. SD was provided 108 opportunities to correctly state vocabulary word meanings and vocabulary word enunciations. During the formative assessment SD enunciated and correctly stated definitions for 16 of the 18 words. Summative assessment 2 proved to be a challenge as well with 17 words enunciated correctly and 16 words' meanings correctly stated. The remaining summative assessments reveal 100% correct enunciations and stated words meanings (See Table 1).

Table 1

SD's Vocabulary Growth Measure from Formative to Post Assessments of IDVDM[ATS]

Source	WEC	CSWM	OE	OCSWM
Formative	16	16	18	18
Sumative1	18	18	18	18
Sumative2	17	16	18	18
Sumative3	18	18	18	18
Sumative4	18	18	18	18
Sumative5	18	18	18	18
∑ of Assessments Totals	105	104	108	108
(∑WEC+∑CSWM) & (∑OE+∑OCSM)		209		216
TVGS (209/216=)		**96.76%**		

SD's Vocabulary Growth Measure from Formative to Post Assessments of IDVDM-ATS

Note. WEC= count of words enunciated correctly, CSWM =count of correctly stated word meanings, OE= count of opportunities to enunciate vocabulary words, OCSWM=count of opportunities to state vocabulary word meanings, Σ=sum, and TVGS=total vocabulary growth score.

LIMITATIONS

The limitations are acknowledged to give the research consumer the ability to decide the level of trustworthiness and level of situational likeness to assign given findings and conclusions. Each student may interpret the IDVDMATS differently. The prior level of expertise using technological learning tools may impact study results. The IDVDMATS is not a fixed, stagnant lesson approach but is a framework to individualize instruction using AT tools for vocabulary acquisition. Therefore, application of such an approach with diverse students may have differing results. For instance, a different choice in LEC activities within IDVDMATS could change vocabulary learning outcomes. SD had a good attitude toward reading before the research project. A student with a poor attitude may not fare as well using this instructional approach.

DISCUSSION

A guiding philosophy for teachers working with students who have special learning needs can be summed with this statement, "Turn weaknesses into strengths and use strengths to overcome weaknesses." All that remains with such a philosophy are strengths. A philosophy like this energizes teachers to adapt and individualize instruction like a medical doctor would a prescription or a procedure to fit the individual patient's needs. The first step to do this is getting to know your student. One axiom or law should guide educators in all they do and say-Know Thy Student (KTS)! This study sought to do just that. From pre student interviews, teacher interviews, and past research with students who have special learning needs, researchers learned SD may learn vocabulary best from trade books of interest, allowing choices, interaction with technology, pictures representations, and repetition of unknown words in an interactive format. Thus, IDVDMATS was born with a mixture of past research knowledge, KTS, AT, and best practices. Although an approach like IDVDMATS is time intense, it is time well spent if the time allows a student to experience authentic literature and vocabulary concept learning in an interactive, interesting manner.

CONCLUSIONS

Readability, Attitude, and Interest: *The Choice*

SD's chosen text, The Last Brother: A Civil War Tale (Noble, 2006), was above his readability level according to the GFI 8.82, FRES 78.19, and FKGLS 6.26 ratings. SD's interest in the book with his good attitude toward recreational and academic reading combined with the IDVDMATS approach transcended the challenges SD faced as a student with learning disabilities and limited English proficiency (Mathewson, 2000). Readability is only one factor to consider when students select books to read. SD's interests were the prime concern for this study. One could argue that readability is a problem if the student has no interest in what is read (Dale & Chall, 1949). SD expressed his preference about learning new vocabulary best, "I like to learn new words. When I remember new words, I feel good." This strength capitalizes the learning experience when supported by a good attitude, interest, and choice (Dale & Chall, 1949; Feiwell, 1997; Mathewson, 2000; Silberman, 2006; Zull, 2002).

IDVDM-ATS = SD Learning Vocabulary

Individualization of vocabulary instruction can transpire if a teacher ascribes to KTS philosophy and actively pursues the best course of action for an individual. This study upheld the benefits of blending several best practices proven from past research with AT as central in aiding students, like SD, to generate meaning from text. For example, allowing students to chose their text; choice allowed in discovery learning of unknown concepts like vocabulary; interactive learning through AT games and children trade books; interactive repetition of concepts with the FLM-6000b's dictionary, say, and thesaurus functions; and interactive pictorial representation of concepts via large paper drawings and Power Point 2003 technology which utilized Internet sound resources, trade book illustrations, and student digitalized drawings all became the interactive mainstay of the IDVDMATS approach specifically designed with SD's strengths in-mind (Male, 1994; 1997; McLaughlin, 2006; Richek, 2005; Silberman, 2006; Vacca & Vacca, 2005; 2008; Zull, 2002). In summative assessment 5, SD became an author of his own story using the vocabulary he did not comprehend at the beginning to teach peers his learning (Slater & Horstman, 2002). Thus, SD's TVGS of 96.76% is a representation of the encouraging possibilities of such an approach (See Table 1). The approach used in this study is more than AT + SD = vocabulary acquisition. If a formula was written for IDVDMATS 's approach specifically designed for SD, it might read— interactive concept representation + interactive pictorial representation + interactive concept games + authentic literature (like trade books) + choice allowed + discovery learning + story authoring using vocabulary or concepts learned + SD's good reading attitude + the number of AT tools used + teacher KTS=vocabulary acquisition. A single magical AT device or instructional cure to alleviate learning problems or the struggles of students with limited English proficiencies is mythical and does not exist (Gentry, 2006; Male, 1997). However, a blending of knowledge concerning research for such students and the individual learning preferences of students in schools today with AT are fundamental to the nature and individualization philosophy of those called teacher/researcher. Individualization was readily observed in SD's slight change of story line while still maintaining the essence of the original story line (See Figures 10 and 11).

AT Can Get Better!

FLM-6000b. Although the IDVDMATS approach proved successful with SD, the AT could add more student friendly functions. For example, during pre concerning vocabulary learning, SD said, "The pictures in my eyes…told me about words before… I see the word doing…word is there in a way to do…I see it a lot." Pictures were very important to SD's learning the meanings of vocabulary words. The FLM-6000b would be a powerful electronic dictionary if it also included a picture function per definition. The student could type in the word and see pictures relating to definitions of interest. For

SD, such a capability would be valuable. The FLM-6000b synthesized speech was difficult and at times incomprehensible to SD. SD expressed this concern at the end of the study with the following comment, "Sometimes I could not tell what the word was and had to push the SAY button to keep hearing it. I was able to get it, but I wish it [SD pointed to the FLM-6000b] sounded like me [SD pointed to the speaker grid on the FLM-6000b]… I need it to sound better to really get it in one time." SD described the desire to hear the words in human speech. Although the synthesized speech was a problem, SD could make out the enunciation of the words after several hearings of the word using the synthesized speech SAY function. However, a student with a poor attitude toward reading and with less interest toward reading a certain text may not persevere like SD with such difficulty (Mathewson, 2000).

Power Point 2003. Power Point 2003 proved to be the easiest AT for SD in the study. He had prior experience with Power Point 2003 and was able to use some of the more advanced function like adding sounds from the Internet to further the reader's experience with story he created. Power Point 2003 was uniquely configured to build a sequential story by its design of slides which can be moved to a desired place in the presentation and an author's ability to insert pictures, text, and sounds to tell a story. Prior experience with technological tools may be one of the most accommodating experiences a student can have when using these tools to express new learning. Newer versions of Power Point could have an authoring book feature for students which offer students and teachers the ability to print and thus publish work in book and Web page forms. Software exists which performs authoring capabilities for struggling students, but Microsoft Office with tools like Power Point are taught to students from elementary to high schools. Its availability and use in schools could be a consideration by Microsoft as software engineers develop new versions or school versions of its products.

Future Research

This descriptive case study example is limited in its generalizability to learning disabled and limited English proficient students with poor attitudes toward reading or limited or no exposure with AT. Yet, this study begins a discussion concerning the needs of students within a special learning dichotomy—learning disabled and limited English proficient. AT's role for students like SD will continue to change as technology continues to change (Leu, 2000). Future research following the individualization philosophy (Gentry, Fowler, & Nichols, 2007) found in IDVDMATS is needed. Research illustrating the adaptability of IDVDMATS with various students may aid the further development of IDVDMATS with various ATs already available or yet to be invented. Descriptive case study research projects which investigate special populations like the learning disabled and limited English proficiency are a necessity.

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Seven Winnings to Inclusion

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Abstract

This is a story about a fun and successful program that involved the integration of adults with developmental disabilities with adults without disabilities. Coach Mahar started the city's first integrative softball team for players with and without disabilities. It is evident that the choices of recreational/leisure activities for adults with disabilities are still not available on a widespread basis. Too often, adults with developmental disabilities spend a great deal of time watching television and listening to the radio. Many adults with disabilities do not regularly participate in any recreational/leisure activities, especially community group activities.

Mahar's team was developed using the following guidelines: teaching the basics, developing self-advocacy skills and learning about accommodations and adaptations, getting to know each other, improving social skills and developing relationships with others, and growing personally. The team members with disabilities enjoyed a sense of belonging while those without disabilities experienced satisfaction in offering this opportunity.

Seven Winnings to Inclusion

It has been a long time since I sat on this side of the fence at the softball complex. I am sitting on these bleachers today as a fan, watching one of my former softball players, Paul. Previously, I'd been on the other side of the fence coaching the first inclusive softball team in North Dakota, the L.I.S.T.E.N. Broncos. Sitting as a spectator at today's game, I couldn't stop thinking about how many things had changed in the field of disabilities since I first started my career, 20 years ago. As I was thinking about this, my friend, Carla, who also works in this field and began her career at the same time, came walking up with some friends from the L.I.S.T.E.N. Center (Love is Sharing the Exceptional Needs), a community recreation and leisure center serving people with disabilities. I had been the program director of the Center for fourteen years, the place where I initiated and implemented the idea of an integrated softball team that would play in the "regular" men's city league.

Recent studies indicated that only 41% of high school students with Developmental/ Cognitive Disabilities (DCD) participated in organized group activities in the community and only 33% participated in school group activities (Wagner, Cadwallader, Garza, & Cameto, 2004). Considering these current percentages are for individuals who are still in school and live at home, therefore having more structure and opportunities, it would not be surprising to know that opportunities for the integration of adults are limited.

Reminiscing

As soon as I saw the players coming on the field, it all came back to me clearly. I felt the need to tell Carla what I was thinking as the players were running the bases. As if my friend could read my mind, she nudged me and said, "Let's walk over to third base." I was glad to do so, as it reminded me of all the games where I had stood there. As we visited, Paul, who happens to have a developmental disability, made it to second base on a nice hit to left field. Carla asked me if I remembered the first time I saw one of my players run to second base. I laughed and said, "Yes, I also remember when one of my players ran from home plate straight to second!" Smiling, Carla said, "There must have been the need to participate in a fundamental training program." I replied, "Oh, much more than teaching the fundamentals!" Carla agreed, "Yes, I remember some of your players that got involved in the self-advocacy movement," (i.e., a movement that teaches people with disabilities how to speak up for what they want). "That was the key," I said. I remember Kenny, another participant, wanting to be the batboy. He was not able to verbally share that information with me, and had not been involved with self advocacy training at the time, but the message became clear when I couldn't get him off the field during one game. He was physically expressing his desire to be a bat boy. We both smiled as we remembered how he used to stand by the opening in the fence, waiting for the umpire to call "time!" He would look at me for approval and then run to get the bat. He would be dressed in a uniform, just like all of the players, which made him a part of the team. "There were a lot of innings with that first ever softball team, weren't there?" By this time, Paul had made it home and his team was up by one run. "There were many 'innings' before the games ever started," I said. "Like getting to know your players?" Carla asked. "Do you remember all the time you and your staff spent getting to know your team?" I remember when Paul and I went out for coffee and talked about our dreams of qualifying for the state softball tournament. I also remember when the team went out for pizza and we visited with family members, but over and over we found out our players had one thing in common, a desire to PLAY BALL! Carla and I continued to visit and watch the game and reflect on the magic of inclusion. My friend, whose passion lies in promoting self-advocacy, shared her appreciation that I "provided a choice for people with disabilities that had never been there before."

It is evident that the choices of recreational/leisure activities for adults with developmental disabilities are still not available on a widespread basis. Modell & Valdez (2002) reported that "the most common leisure activities for people with disabilities are watching television and listening to the radio" (p. 46). They also commented that many adults with disabilities do not regularly participate in any recreational/leisure activities and that 83% had not recently participated in any kind of community group activity.

While recent educational legislation (e.g., IDEA) promotes the inclusion of students with disabilities with students without disabilities, these opportunities are not mandated in the adult world. However, through IDEA, the transition process for students with disabilities, ages 16-21, must be planned and carried out in order to ensure a smooth transition to adult life. This is where opportunities and choices can begin to develop.

I continued reminiscing with Carla.

I agreed with my friend and quickly added, "It was a choice for people with disabilities, but the players without disabilities who were recruited, also had choices." They knew the game, they had the social skills and they had the connections. Yes, I remember the "Recruitment Do's." I found the first few players without disabilities through individuals who were already involved with the Center. Board

members, family members and their friends were all drafted, and soon found out that the payoff was better than playing for the Yankees. As Carla and I continued our conversation, we talked of the importance of social skill training and facilitating healthy relationships within our team. Paul developed a friendship with the shortstop, a team member who did not have a disability, while they participated as partners in the role playing session in the social skills training program. This gave them an opportunity not only to develop skills, but also to develop a healthy relationship. "Patti, just think of the friendships that were made over the years on that softball team." I nodded and added, "Like Roger, our pitcher, a local chaplain who faithfully would give rides to the games and practices to two of the players, Chad and Mark." Carla shared how the Speakers' Bureau was beneficial, because over and over again, we faced attitudinal barriers. The Bureau was a means for our players to put into practice their social skills and self-advocacy skills by educating the community through speeches that came right from their hearts. The need for creating understanding was evident when we heard remarks that were less than kind such as, "We're playing the retards, we better win."

This process of building relationships between team players is similar to programs recently developed in high schools around the country. One such program was described by Eskow & Fisher (2004). In this program, college students in the occupational therapy program participated in small group activities with 18-21 year old students with developmental disabilities. All of the students participated in a shared activity at the beginning which was designed to help them learn from, and about, each other.

Similarly, a Peer Buddy program was developed where general education students were paired with a student with disabilities and then participated in social, academic, community, and recreation/leisure activities together (Hughes, Guth, Hall, Presley, Dye, & Byers, 1999). One Peer Buddy shared that "before I joined the program, I really did not understand people with disabilities. I felt sorry for them. Now I know that each one has his or her limits and abilities. It's like becoming friends with anyone else" (p. 33).

Carla and silent for a moment, as we watched Paul, who was now playing for a team sponsored by the company he works for. Would he have been asked to play on this team if he hadn't had the L.I.S.T.E.N. team experiences? Perhaps not. Perhaps he would not have had the confidence and necessary fundamental skills, and perhaps the attitude would have still been prevalent that people with disabilities need to play with other people with disabilities. Not only was Paul included, but so was his wife, who has a disability as well. She was sitting with the other wives, visiting and enjoying the feeling of belonging and being included.

Carla broke the silence by saying that Roger, a team member without disabilities, loves to share his favorite story over and over again about Chad, who has a visual impairment and uses a walking cane. Roger tells about guiding Chad to the field as the opposing team looked on. The looks on their faces when Chad hit the ball over second base, making a base hit were ones of amazement. "Did he use an orange ball so he could see it better?" Carla asked. Again, recalling, I smiled and said, "No, we tried that accommodation but it didn't work. So Roger practiced yelling 'SWING!' when the ball came across the plate. Granted, it wasn't 100% accurate, but it worked." We found out through trial and error that some adaptations worked for some and not for others. We learned quickly to look at each player as an individual. No two players were the same. We learned to not make the mistake of treating all people with the same disability in the same way and making the same accommodations. Over half of the players on the integrated team had developmental disabilities, but each had a different need. Some needed support in transportation, some in social skills training, and others needed a lighter bat.

It was now the bottom of the sixth inning and Paul's team was winning. If you went by actual game score, this was something that didn't happen very often for the L.I.S.T.E.N. Broncos for the first five years. If score was measured in personal growth for people with and without disabilities, there would be many winners. I could see the pride on Paul's face, as he glanced our way.

After the game, Paul headed our way and said to me, "Hey, coach, did you see the one I hit to left field?" He then turned to Carla and said, "I got a bowling team lined up for league bowling that will be starting in October." I got goose bumps when I heard Paul say this because he was experiencing empowerment and expanding his choices. We both congratulated Paul on a game well played. We each headed to our own car and on my radio, the song, "Take Me Out to the Ball Game" was playing. I waved and smiled at Carla and once more, like an instant replay, the seven innings of inclusion went through my mind.

Inning One: A Fundamental Training Program

Players were taught how to run the bases in order. They usually knew they had to run the bases but would often run from first to third or just from first to home. They also learned how to hold a bat and how to put on a glove, and progressed to swinging the bat and catching ground and fly balls. Some of the other benefits to teaching these adults the "basics" included their improved physical strength, flexibility, and endurance.

Inning Two: Self-Advocacy

Learning to see themselves as just "people", instead of "people with disabilities" was the first step in the second inning. Next, they were taught that their behavior reflected who they were. This was accomplished by teaching the participants how to speak up for themselves, make their own decisions, and advocate for each other. As coaches, we knew there was a risk factor involved when they were making choices for themselves but we felt they needed the opportunity to learn from their mistakes as everyone else does. Through support of the whole team, they also learned about listening to each other and working together. Finally, other teams in the league were trained to emphasize abilities rather than disabilities. This was accomplished by having the players from other teams attend presentations by participants in the Speakers' Bureau. Through these presentations, players learned about focusing on what players can do, rather than what they cannot do. They also learned to focus on commalities rather than differences between person with and without disabilities.

Inning Three: Getting to Know the Players

The coaches and players without disabilities learned to see the players as "people" rather than as "clients." The focus was on each individual's gifts rather than on each individual's deficiencies. Several games were played "for fun" in an effort to learn the strengths of each player.

Inning Four: Social Skills Training

This was definitely the "inning" that took the most time. All possible situations were role played, such as what to do when the umpire called a player "out," or when someone referred to one of the players as a "retard." A great deal of time was spent on developing or expanding social skills. For example, assisting the participants in handling conflicts and awkward social situations, and developing conflict resolution skills were key areas addressed. Other topics included how to introduce oneself to new

people, establish meaningful relationships, speak effectively, and conduct oneself in a socially acceptable manner.

Inning Five: Facilitating Healthy Relationships

This was an inning that was ongoing, since teaching how to have healthy relationships was best done incidentally as real-life situations occurred. Teaching was done both "on the spot" and later in role playing that replicated real life. Interactions with other teams always provided opportunities for real life scenarios. Some of the situations we faced included challenging oneself, how to handle frustration or disappointment, and supporting and encouraging other people.

These interactions provided for some of the best learning opportunities for everyone involved. Just as students with disabilities who are separated from general education peers have limited opportunities to interact and practice social interaction skills (Hughes et al, 1999), the same is true for adults with disabilities. They do not have enough opportunities to interact, practice, and use the social skills they learn.

Inning Six: Accommodations

It was first determined what accommodations, if any, each player would need. Then, those who needed to know, were taught what the accommodations were and how to implement them. This included the umpires and other players. For example, if a player needed more time getting on and off the field, it was agreed prior to the start of the game. Also, if a player needed verbal assistance to complete a play, additional coaches were used at first or third bases. For the participants who were learning to control their verbal impulses, the umpire gave two warnings instead of immediately kicking them out of the game. These accommodations were beneficial to the participants and helped them not only learn the game of softball, but also helped them with their own areas of need.

Inning Seven: Personal Growth

The growth was phenomenal, as players went from not knowing how to run the bases to becoming base coaches. A few players learned how to "keep" the book with the game statistics. Others became bat boys, flipped the coin at the beginning of the game, and became greeters to the other teams. The strongest evidence of personal growth was that by the end of the first season, the Broncos were just another team in the league, which was our goal from the beginning.

I think the "win" we had in our seven innings was far grander than the World Series. The team shared our philosophy with the community that one's individuality is a gift to be respected and appreciated without conditions and limitations, despite differences. In a softball complex of thirteen fields, we felt a sense of belongings as we heard the umpire holler "Batter up!" with the fans who were cheering us home.

This sense of belonging is just one of the many benefits of participating in physical and recreational activities in an inclusive setting. The quality of life for everyone involved can be enhanced and lifelong friendships can be formed. According to Modell & Valdez (2002), interactions and relationships on the field can help encourage and develop relationships off the field.

Inclusion for our softball team, the L.I.S.T.E.N. BRONCOS, was once just a dream. It was clear to me tonight after watching Paul, that now, a field where individuals are valued for their abilities, is a

reality. The BRONCOS were encouraged to speak up for what they wanted, gained meaningful relationships, participated in social skills and fundamental training, received appropriate accommodations, were part of a team, and grew emotionally, spiritually, and physically, all from the common desire to PLAY BALL.

Today, along with Paul, we educate and motivate people about the value of inclusion using the seven inning model we developed. Our seven inning approach has been successful in including people with disabilities in all areas of recreation and community life. Whether a softball team, a bowling league, or getting someone involved on a board or committee, this approach is a winner. So "batters up!"

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"A League of Our Own" - The Implementation of the Vocabulary Football League

Karen Talalas and Bill Gallache

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The basketball player who hits two free throws to win the game is never ridiculed for practicing foul shots. The runner who breaks a personal best is never jeered for training in all kinds of weather. The outstanding wrestler is never belittled for enduring tortuous workouts day after day. Yet, the aspiring, conscientious student is often mocked for studying, the academic equivalent of practicing. This has always bothered Bill Gallacher, English teacher and a two-sport varsity coach at Howell High School in Monmouth County.

Gallacher went on to explain, "Teenagers willingly accept people who strive for excellence in sports and in many other areas of life, but when it comes to striving for excellence in the classroom, teenagers will label classmates as 'nerds' or suggest that somehow those who study and care about doing well 'have no lives.' I wanted to change that attitude."

Gallacher's pet peeve got him thinking and acting more like a coach in his English class, and it became the impetus for the formation of what he termed the "Vocabulary Football League."

The Vocabulary Football League (aka "VFL") is a high school vocabulary learning program modeled after the National Football League. Special and regular education students are assigned to NFL teams and compete for points on their vocabulary tests. The match-ups are set before the "game," which is the weekly test. Student-players receive an individual test score, and their team receives a score based on its performance. Teams compete for extra credit points in weekly head-to-head games. The top teams qualify for playoff rounds and, ultimately, one team from each class battles in the championship game called the Watershed, the equivalent of the NFL's Super Bowl.

"I was just a little hesitant to introduce the concept," says Gallacher, "because over the years there were some trends in education that went against my philosophy. One was to eliminate competition in education. Much of that ground swell seemed to stem from the concern that a student's self-esteem would be detrimentally affected by any activity that had winners and losers, another idea that was in direct opposition to my plan. Remember, I had read educational articles that suggested that a game of tag was even frowned upon because someone had to become 'it.'"

"Like the team sports I coach," Gallacher continues, "this league uses teamwork and competition to challenge students to try their very best for themselves and for teammates. It recognizes individuals for outstanding effort and achievement, and it is also helping to change the way kids view study and preparation for class."

After discussing his concept with his special education co-teacher, Karen Talalas, Gallacher felt confident his idea was worth pursuing. Talalas wholeheartedly agreed with the concept and committed

to making it work. "When we first discussed forming the VFL, I was so enthusiastic. The VFL combines teamwork and competition, and it motivates those who are not self-motivated. More importantly, however, the socialization aspect of the VFL is particularly beneficial for my students. Inclusion students become part of a team and practice with regular education students to prepare for 'game day.' Many of our freshmen special education students come from a smaller resource room setting and have had little opportunity to integrate with the regular education population in the classroom. Participation in the VFL grants the perfect opportunity for socialization and cooperative learning."

"It seems to me," adds Gallacher, " that many of the inclusion students are some of the most enthusiastic and successful players. They really enjoy the competition and the camaraderie that comes from being part of a team."

Bill gives much of the credit for the league's enormous success to Karen Talalas. He states, "Karen's tireless efforts on behalf of the league have been the linchpin of the program's popularity."

When Bill first introduced the idea of the VFL to me," Talalas explains, "it was very appealing. This program is an innovative and motivational way to present vocabulary to our students. As 'Assistant Commissioner,' I wanted to help in the organization and promotion of the league."

Talalas continues, "I began by creating a VFL Scoreboard, and then contacted NFL Headquarters and every NFL franchise by email, phone or letter. I requested that each send a congratulatory letter to our student-players for their participation and success in our program. The response from the NFL has been absolutely overwhelming. Almost two dozen teams have responded with inspiring letters, certificates, and small promotional items (such as stickers, player cards, key rings, etc) that we use as incentives for student achievement. Additionally, NFL Communications Director Jared Cooper sent a congratulatory letter from the NFL Corporate Division, the Minnesota Vikings sent an authentic jersey signed by six players, the Miami Dolphins mailed autographed player pictures and pennants, and the owner of the Baltimore Ravens a sent beautifully written letter of encouragement and a dozen team caps. In fact, we often hold 'press conferences' to update our VFL players on the latest arrivals. We are humbled by the extraordinary support and generosity of the NFL."

Typical week in the VFL

The typical week in the Vocabulary Football League begins after the completion of a game on Wednesday. After collecting the tests, Gallacher and Talalas have students "break out the play books" (a packet containing weekly lists for the entire school year) and pronounce each of the words on the new list because, as Gallacher and a doctored Spider-Man poster warn: "With a great vocabulary comes great responsibility." Like it or not, he tells his students, there are always social consequences when using words. "Mispronunciation and/or misuse of a word," he stresses, "can leave you feeling foolish or appearing pretentious."

Talalas notes that Gallacher likes to use humor while introducing the words. "Bill will provide our students with lucid examples of how each word is typically used, and he also attempts to make words memorable by injecting humor. He's never afraid to take a risk. He will scamper about the room imitating the 'dexterous' movements of a squirrel, if that's what he feels he needs to do to drive the meaning home. He also makes contemporary references to music, sports, and current events that our students understand. This not only enhances our students' comprehension, but makes the vocabulary relevant to them."

Students then begin preparing for next week's game with a variety of cooperative activities and homework assignments. As Gallacher observes, "They work as a unit with the same players for six months and really do begin to think and act like a team. Some teams wear the same colored shirts on game day, some wear football jerseys, and others tape signs with their teams' logo or helmet on their desks." Students will huddle with teammates on Thursday for a fifteen-minute practice, creating flashcards to use throughout the week and for cumulative reviews. The VFL expects that students demonstrate sportsmanlike conduct at all times. Gallacher and Talalas remind students that some members of the team will perform better than others, just like any athletic team. A good teammate does not complain about the performance of others; he or she must look to help their teammates to improve. By stressing this point, the teachers set the tone for positive and productive "practice sessions." Vocabulary homework is due on Monday, and is assessed and recorded by Mrs. Talalas. Students must correctly spell each vocabulary word, identify its part of speech, and use the word appropriately in a sentence. Teams often gather again on Tuesday for another 10-minute practice session.

Talalas says that on Wednesday, game day, Gallacher's enthusiasm is absolutely infectious. "We both wear referee uniforms, but his is complete with whistle and yellow flag. As the students enter the room, he tosses a small football around while the sports-themed music blasts from a portable CD-player. The student-players take a few minutes to 'warm-up' by huddling with teammates to review the play book or flashcards."

The action, however, doesn't stop when Gallacher turns off the music and blows his whistle. He then goes into his pre-game referee's speech, which reinforces many of the VFL words. He warns students not to "tarry" when putting away the playbooks or a delay of game penalty will be "assessed." Students may be penalized for "encroachment" if their desks are too close to one another. Just prior to distributing the tests, he "implores" the students to "curtail the prattle." " Bill stays in character during the game, as he patrols the room with whistle and flag," says Talalas.

Mrs. Talalas continues, "Bill's high-energy enthusiasm sets the tone and keeps the students motivated and engaged. They revel in the 'big game' atmosphere and excitedly await scores."

Just as coaches recognize outstanding athletic efforts and performances, Gallacher and Talalas are committed to praising and rewarding the accomplishments of the VFL players. Players with high or improved scores qualify for weekly drawings of NFL merchandise. Each class also has a "Last Player Standing Competition." The winners of these contests are the students who remain perfect on tests for the longest period of time. Remarkably, after twelve weeks of testing, one class still has four perfect students. Overall, eight students are still perfect. "This is particularly impressive" Gallacher notes. "when you consider that the tests are cumulative. I select words from previous lists to add to the current test." Additionally, one student is recognized and awarded a "Player of the Week" certificate.

At home on Wednesday night, Gallacher computes team averages and consults the schedule to determine the outcome of each game. He prepares the results of the week's action, updates the standings, and posts them on the VFL scoreboard on Thursday morning. "It's very gratifying to see so many of the students rush into class and head to our scoreboard to check on the results of the games," says Talalas.

Bob DeMore, another teacher in the Howell High School English Department, joined the VFL in September . Talalas continues, "We are delighted that Bob DeMore and his students joined the VFL this season. Bob is very enthusiastic. He has created a VFL Scoreboard for his classroom, and he is also writing his own vocabulary tests to challenge his student-players. Recently, Bob recognized

individual player achievements at a Howell High School football playoff game." Bob admits he initially had some doubts about the VFL. "I really wasn't sure how it would go over with my students in the beginning, but now I'm really glad we joined the league. Each week quiz scores have gone up and the students are doing much better, overall. The highest score possible on my tests is a 29, and last week every member on one team got a perfect score!"

Bob Demore's special education co-teacher, Mary Lu Hansen, makes this observation, "The concepts of teamwork and competition really seem to motivate our students. They may not be self-motivated, but they make sure to study their vocabulary words for the test so that they don't let their teammates down. It's truly a 'win-win' situation."

Gallacher and Talalas have high hopes for the future of the Vocabulary Football League. "I can speak for both of us and say that one of the most gratifying aspect of our involvement in the VFL has been seeing the players evolve as students and as individuals." states Talalas, " Many of these students may never be on a traditional sports team, but in the VFL they work cooperatively as teammates and enthusiastically engage in competition as part of a team. We could not be more proud of the fact that the Vocabulary Football League has come to represent success in learning. We are hoping to inspire other educators to consider introducing the concepts of teamwork and competition in their classrooms."

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