Education for a Changing World

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Foreword by
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Education for a Changing World

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Table of Contents

HIGHER EDUCATION IN A CHANGING WORLD

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*At least two members of the editorial advisory panel reviewed
every manuscript submitted to the yearbook editors.
We deeply appreciate all their efforts.*

EDUCATION FOR A CHANGING WORLD

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Foreward

Paul Maxfield
&
Jack Cassidy

The fifth annual conference of the Center for Educational Development, Evaluation and Research (CEDER) was held November 30 and December 1, 2007. The CEDER Conference focused on "*Education for a Changing World*." More than 250 educators from around the United States and as far away as Venezuela and South Africa attended. The 2008 *CEDER Yearbook* is a peer-reviewed compilation of some of the papers delivered at that conference.

Chapter 1, entitled, "Free Voluntary Reading: Still a Great Idea," is presented by Dr. Stephen Krashen, one of the conference's keynote speakers. He provides a meta-analysis of research linking access to books with child literacy rates and demonstrates that encouraging children to read for pleasure is a key to literacy development.

The following 10 articles in this yearbook were selected by the Editorial Advisory Committee based on a number of criteria, including the importance and timeliness of the topic, theoretical grounding, and the contribution made to the field of education. Several themes run through this volume, which, when combined, paint a panoramic and vivid image of education for a changing world.

Chapters 2 through 6 examine education for a changing world at the K-12 level. In Chapter 2, Barbara Marinak examines several methods in which the elements of informational text structures can be taught in elementary classrooms to increase reading comprehension. In chapters 3 and 4, the authors explore the implications of bilingual education in a world that is becoming increasingly diverse. Cherie McCollough, JoAnn McDonald, and JoAnn Canales use Chapter 3 to examine the ways in which culturally relevant family science learning events work to engage families in a child's education. Special consideration is given to non-English speaking parents and family members. In Chapter 4, Frank Lucido, Christine Marroquin, Gina Reynolds, and Piedad Ymbert discuss brain-compatible teaching strategies and practical methods to develop bilingualism in students. Similarly, in Chapter 5, Connie Patchett, and Sherrye Dee Garrett call for the inclusion of more nonfiction in elementary classrooms as a way to overcome the "fourth grade slump" in reading comprehension. They provide several frameworks for the effective use of nonfiction texts with a variety of elementary students. In Chapter 6, Michael Moody takes a look at education in a changing world from an administrative perspective. He explores the relationship between

school boards and their superintendants of schools, and the discrepancies in how they prioritize competencies for superintendant success.

Chapters 7 through 11 explore higher education in a changing world. In Chapter 7, Teresa Le Sage and Barba Patton promote increasing pre-service teachers' familiarity with using math/science notebooks to increase their effectiveness in the classroom. In Chapter 8, Kaye Nelson, Marvarene Oliver, and Darwin Nelson provide an overview of counselor education programs' changes over time in response to the changing needs of a constantly fluctuating population. In Chapter 9, Barba Patton demonstrates the need for greater Internet literacy amongst pre-service teachers in an evaluation of lesson plans found online. Caroline Crawford, Richard Alan Smith, and Marion Smith, in Chapter 10, explore how web-based classes are changing college student perceptions of their instructors. Finally, in Chapter 11, Daniel Pearce, Wally Thompson and Tammy Francis Donaldson explore the effectiveness of a developmental reading class on the academic success of students in higher education.

The world is changing rapidly, and it is important that educators adapt to these fluctuating circumstances and contexts. *Education in a Changing World* is not only about presenting emerging trends, but also about creating educators who are prepared to respond effectively to whatever challenges they may face in the future.

Our sincerest thanks go out to everyone who contributed their talents to the creation this yearbook, and to all who participated in the Fifth Annual CEDER Conference.

Chapter 1

Free Voluntary Reading: Still a Great Idea

Stephen Krashen

Abstract

There is strong evidence supporting free voluntary reading as a means of stimulating literacy development. This evidence includes experimental studies, case histories, and correlational studies. Studies also strongly show that access to books is the most crucial element in encouraging reading; there is little we can do to encourage reading if books are not available. The problem of access is most acute in children of poverty. Both research—such as the research presented in this discussion—and common sense tell us that reading (especially self-selected free voluntary reading) is the most powerful tool we have in language and literacy development.

Free Voluntary Reading: Still a Great Idea

The twenty-first century saw the advent of the federal "No Child Left Behind" legislation, which provided funding for the "Reading First" initiatives. These initiatives were required to use as their theoretical base the Report of the National Reading Panel. (National Institute of Child Health and Human Development , 2000). That panel reviewed scientific experimental studies in the field of reading and concluded that there was sufficient quantity and rigor in the research related to five areas of reading instruction: phonics, phonemic awareness, fluency, comprehension, and vocabulary. These five areas became known as the "five pillars" of reading instruction. Unfortunately, many people assigned equal weight to these five pillars, although most authorities in the field of reading acknowledged that comprehension and vocabulary were much more important than the other three. Luckily, the five pillars are beginning to crumble, and phonics and phonemic awareness no longer seem to have the same importance they once did (Cassidy & Cassidy, 2007; Cassidy &Cassidy, 2008). Unfortunately, educators are still paying scant attention to free voluntary reading or sustained silent reading as a means of stimulating literacy development despite the existence of a number of experimental studies, case histories and correlational studies which provide support for this practice.

Experiments

In experimental studies, students who participate in "sustained silent reading" consistently outperform those in traditional classes. Students identified as "English as a first language learners" and "English as a second and foreign language learners," each group of which includes children, teenagers, and college students, have demonstrated this attainment (Krashen, 2004).

Table 1 (from Krashen, 2007) summarizes studies featuring high school and university students from several different countries, all of which are using English as a foreign language (EFL). English as a foreign language is a good laboratory to study the effects of pleasure reading. Typically, the classroom and classroom library are the only sources of English for these students. Included in Table 1 are the effect sizes for cloze tests and tests of reading comprehension. In all cases the effect sizes are positive, which means that students in the self-selected reading groups did better than those in traditional classes. An effect size of 1.0 or more is considered to be quite large; an effect size of 0.2 or less is considered to be small. Note that in Table 1, free reading never loses; the effect sizes range from small to very large. In addition, those with more access to reading (more titles per student) did better on both reading tests. This shows that the relationship between access and reading comprehension results are very strong, while the relationship is not strong for cloze tests.

Table 1
Access, Duration and Effect Sizes

Study	n	Titles	Titles/S	Duration	ES Cloze	ES RC
Yuan & Nash (1992)	37	200	5.4	one year	0.38	
Sims (1996)	30	550	18.3	one year		0.81
Sims (1996)	30	550	18.3	one year		0.65
Mason & Krashen (1997)						
Retakers	30	100	3.3	one semester	0.702	
Jr colleges	31	200	6.4	one year	1.47	
Universities	40	200	5	one year	1.11	
Response L1	40	550	13.75	one year	0.24	0.61
Response L2	36	550	15.28	one year	0.63	0.48
Lituanas et al, (2001)	30			6 months		1.7
Bell (2001)	14	2000	142.9	one year	1.31	3.14
Sheu (2003)	31	57	1.84			0.71
Sheu (2003)	34	55	1.62			1.04
Lee (2005a)	65	215	3.3	12 weeks	0.24	
Hsu & Lee (2005)	47	354	7.5	one year	0.58	
Smith (2006)	51	500	9.8	one year	0.47	0.39
Lee (2006)	41	1200	29.3	one year	1.02	
Hsu & Lee (2007)	47	500	10.6	3 years		
Smith (2007)	41	500	12.2	one year	0.56	
Liu (2007)	46	450	9.8	one year	1.59	

Effect size = Cohen's d.
All effect sizes take pretests into account (ES posttest – ES pretest) for reading comprehension, except for Mason & Krashen (1997) which was based only on the post-test.
n = number of students in extensive reading group
Titles/S= number of separate book titles per student
Retakers, Jr colleges, Universities, Response L1, and Response L2 are all from Mason & Krashen (1997). Response L1= students wrote summaries in Japanese; response L2= students wrote summaries in English
Note. From "Extensive Reading in English as a Foreign Language by Adolescents and Young Adults: A Meta-Analysis," by S. Krashen, 2007,

Correlational Studies

Many studies have found positive correlations between how much students say they read and scores on reading tests (reviewed in Krashen, 1988). The most interesting of these studies are those that use multivariate methods to control for possible confounding variables.

In nearly all second language studies, reading emerges as the strongest predictor of literacy development, outdoing variables measuring instruction and language use (Gradman & Hanania, 1991; Witton-Davies, 2006). In some studies, reading emerges as the only successful predictor (Lee, 2005b; Stokes, Krashen, & Kartchner, 1998). In another study, reading was one of three significant and stronger predictors of performance on the TOEFL examination. The others were length of residence in the US and years of English instruction (Constantino, Lee, Cho & Krashen, 1997).

Case Histories

I regard case histories as valid scientific evidence, as long as we do not restrict ourselves to just a few of them. In many case histories, recreational reading was the only likely factor that could have been responsible for impressive growth in literacy (e.g. Cho & Krashen 1994, 1995a, 1995b; Krashen, 2004; Mason, 2006). In Lin, Shin, & Krashen (2007), we present the case of Sophia, a high school student who came to the US with her family when she was in sixth grade. Her high school reading test scores showed a strange pattern. During the academic year they declined, but over the summer they increased. During the summer, Sophia would make up the loss of the year and then some.

The answer to this mystery was that Sophia was a dedicated summer pleasure reader, reading about 50 books during each summer. She had, however, little time for pleasure reading during the academic year. Sophia's reading was not a deliberate strategy for improving her English. She did it for pleasure. The discovery of this pattern became apparent in her exam scores later, after she had been a summer reader for several years.

Encouraging Reading: The Importance of Access

By far, the most important step to take in encouraging students to read is to make sure books are available. A number of studies confirm that more access to books means more reading (reviewed in Krashen, 2004). Since we already know that more reading means better reading (and writing, spelling, vocabulary, and grammar), it is safe to hypothesize that more access means

better reading. This prediction has been confirmed by a number of studies showing a positive relationship between school library quality and reading achievement (Lance, 2004; Krashen, 2004; McQuillan, 1998).

I review here some of our recent progress in this area (Krashen, Lee & McQuillan, 2008). McQuillan (1998) examined the relationship between access to reading material and scores on the 1992 NAEP reading test given to samples of fourth graders in 42 states in the US. His measure of access was a combination of three measures of access to reading material at home, two of access to reading in school, and two of access to reading in the community. Table 2, a multiple regression analysis from McQuillan, tells us that even after controlling for the effect of poverty, access to print was a significant and strong predictor of performance on the NAEP. That is, those with more access did better.

Note also that the combination of poverty and print access accounted for 72% of the variability on the NAEP. That is, if we know the level of poverty of families in a state and how much reading material is available to children in that state, we have 72% of the information we need to predict how well fourth graders in that state scored on the NAEP.

Table 2
Predictors of NAEP Scores for Grade 4 in 1992

	beta	t	p
Poverty	-0.45	-5.07	0
Print Access	1.12	4.3	0

$r2 = .72$
Note. From "The Literacy Crisis: False Claims and Real Solutions," by J. McQuillan, 1998, Copyright 1998 by Heinemann Publishing Company.

Table 3 presents a replication of McQuillan's (1998) findings using the 2007 fourth grade NAEP from 51 States and more recent measures of poverty and access to books (a combination of books per student in school libraries and per capita total circulation in public libraries in each state). It also controls for the presence of English learners by only including scores for fluent English proficient children.[1] Once again poverty is a strong predictor of scores, and once again access to books makes an independent contribution to reading achievement.

Table 3
Predictors of NAEP Scores for Grade 4 in 2007

	b	beta	t	p
Poverty	-0.919	0.72	7.42	0
access	0.658	0.53	1.62	0.055
r2 = .6468				

r2 = .65 adjusted r2 = .63
Note. From "Do Libraries Contribute to Gains in Reading Between Grade 4 and 8?," by S. Krashen, S.Y. Lee, J. McQuillan, 2008, Poster presented at the meeting of the American Library Association Meeting.

A separate analysis was performed to try to determine what factors are responsible for improvement after Grade 4, or, more accurately in this case, the difference between Grade 4 and Grade 8 scores. This multiple regression analysis involving 51 states is presented in Table 4. Again, this multiple regression analysis only includes fluent English proficient students. This analysis indicates that, not surprisingly, that Grade 4 scores are a strong predictor of Grade 8 scores. It is surprising; however, that poverty is a weak predictor of the difference between Grade 4 and Grade 8. Recall that the impact of poverty is strong, however, on the Grade 4 test. Of interest to us is that access to books, again a combination of school library holdings and public library circulation, is a significant predictor of the difference between Grade 4 and Grade 8.

The r2 of .89 means that knowing Grade 4 NAEP scores for a state, the level of poverty, school library holdings and public library circulation is 89% of what we need to predict a state's Grade 8 NAEP reading score. The access to print factor makes up about 5% of the 89%. The effect of poverty on fourth grade reading is enormous, but access to books can contribute to Grade 4 reading, regardless of poverty. The analysis also indicates that those who read better in Grade 4 also read better in Grade 8, but access to books can help here as well. This agrees with data showing that "late intervention" in the form of recreational reading is possible and effective (Krashen & McQuillan, 2007).

Table 4
Predictors of NAEP Grade 8 in 2007, 51 states

	b	beta	t	p
NAEP4	-0.848	-0.857	10.68	0
POV	0.0958	0.076	0.96	0.17
ACCESS	1.05	0.126	4.59	0

$R2 = .89$, adjusted $r\ 2 = .89$
Note. From "Do Libraries Contribute to Gains in Reading Between Grade 4 and 8?," by S. Krashen, S.Y. Lee, & J. McQuillan, 2008, Poster presented at the meeting of the American Library Association Meeting.

　　The role of access is probably underestimated in these analyses. Library holdings do not accurately reflect actual circulation, and circulation does not accurately reflect actual reading. Moreover, the public library figures are for circulation in general, not just for young readers. Of course, providing access is only the first step. Even with access, some children (but surprisingly few) will not read. The research literature consistently indicates that rewards for reading are not effective (Krashen, 2003), but that read-alouds and conferencing do help. For these approaches to work, the books need to be available.

<div align="center">

Poverty
</div>

　　Nearly ignored in the current (and eternal) discussion about raising achievement in literacy is the fact that children from low-income families have little access to books at home, in school, and in their communities (Di Loreto, C., & Tse, L. 1999; Neuman & Celano, 2001). Clearly, the first step in improving literacy is to improve library quality for those who need libraries the most: children of poverty.

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Postscript
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　　A report from the National Endowment for the Arts (Iynegar & Ball, 2007) has convinced nearly everyone that young people today are reading worse and reading less than in previous years. A closer looks shows they are not reading worse. Grade 4 and Grade 8 students' national reading scores have not decreased since 1984. Grade 12 students' scores dropped only four points since 1984, and are the same as they were in 1971.

　　In addition, young people are reading quite a bit, if you count reading in general and not just books. According to a 2005 Kaiser Family Foundation Report ─ when magazines, newspapers and the internet are counted as reading, teen-agers report reading on their own for about an hour a day. This

agrees with data from a recent PIRLS report of reading in 40 countries. For more data and more details, see Krashen (2008).

A Possible Conclusion

A possible conclusion from this wealth of data is that free voluntary reading or sustained silent reading should be considered as an integral part of any quality reading program. Perhaps as the "five pillars" of reading continue to crumble, teachers will again begin setting aside time in the school day to allow students to read books of their own choosing. Free voluntary reading is still a great idea!

Notes

1. This was not possible for previous years' NAEP scores because separate scores for English learners and fluent English speakers were not available. Even though English learners who have recently arrived in the US are not required to take the NAEP, criteria for including English learners vary from state to state, and it is doubtful that enough time is allowed for English learners to show their full proficiency on tests given in a second language. The means for all students and for fluent English speakers only were similar for NAEP 2007 (all students, mean = 220.4, for fluent English only, mean = 222.4). English learners are concentrated in a few states, and in these cases the scores with and without English learners are quite different. For California, the difference was 11 points, for Nevada, 9 points, for Arizona, Oregon, New Mexico and Alaska, 6 points.

References

Bell, T. (2001). Extensive reading: Speed and comprehension. *The Reading Matrix, 1*(1). Retrieved September 22, 2001, from http://www.readingmatrix.com/articles/bell/ index.html

Cassidy, J., & Cassidy, D. (2007). What's hot, what's not for 2007*, Reading Today*, *24,* 1 & 8-10.

Cassidy, J., & Cassidy, D. (2008). What's hot, what's not for 2008*, Reading Today*, 25(4), 1&10, 11.

Cho, K.S. and Krashen, S. (1994). Acquisition of vocabulary from the Sweet Valley Kids series : Adult ESL acquisition. *The Journal of Reading,* 37, 662-667.

Cho, K.S. & Krashen, S. (1995a). From Sweet Valley Kids to Harlequins in one year. *California English*, 1(1), 18-19.

Cho, K.S. & Krashen, S. (1995b). Becoming a dragon: Progress in English as a second language through narrow free voluntary reading. *California Reader,* 29, 9-10.

Constantino, R., Lee, S.Y., K.S., Cho, & S. Krashen. (1997). Free voluntary reading as a predictor of TOEFL scores. *Applied Language Learning,* 8, 111-118.

Di Loreto, C., & Tse, L. (1999). Seeing is believing: Disparity in books in two Los Angeles area public libraries. *School Library Quarterly, 17*(3), 31-36.

Gradman, H. & Hanania, E. (1991). Language learning background factors and ESL proficiency. *Modern Language Journal,* 75, 39–51.

Hsu, Y. Y., & Lee, S. Y. (2005). Does Extensive reading also benefit junior college students in vocabulary acquisition and reading ability? *The Proceedings of the 22nd International Conference in English Teaching and Learning, pp.116-127*. Taipei: Crane Publishing Company.

Hsu, Y.Y. & Lee, S.Y. (2007). A three-year longitudinal study of in-class sustained silent reading with Taiwanese vocational college students. In Selected Papers from the Sixteenth International Symposium on English Teaching. English Teachers' Association/ROC, Taipei: Crane Publishing Company.

Iynegar, S. & Ball, D. (2007). *To read or not to read* (Research Rep. No. 47). Washington, DC: National Endowment for the Arts.

Krashen, S. (1988). Do we learn to read by reading? The relationship between free reading and reading ability. In D. Tannen (Ed.), *Linguistics in Context: Connecting Observation and Understanding (*pp. 269-298). Norwood, NJ: Ablex.

Krashen, S. (2003). The (lack of) experimental evidence supporting the use of accelerated reader. *Journal of Children's Literature, 29*(2), 9-30.

Krashen, S. (2004). *The power of reading* (2nd ed.)*.* Portsmouth: Heinemann and Westport.

Krashen, S. (2007). Extensive reading in English as a foreign language by adolescents and young adults: A meta-analysis. *International Journal of Foreign Language Teaching,* 3(2), 23-29.

Krashen, S. (2008). The "decline" in reading in America: Another case of the "shock doctrine"? Substance, 33(5), 4-6.

Krashen, S. & McQuillan, J. (2007). Late intervention. *Educational Leadership, 65*(2), 68-73.

Krashen, S., Lee, S.Y., & McQuillan, J. (2008, June). Do libraries contribute to gains in reading between grade 4 and 8? Poster presented at the meeting of the American Library Association Meeting, Anaheim, CA.

Lance, K. (2004). The impact of school library media centers on academic achievement. In C. Kuhlthau (Ed.), *School Library Media Annual*. (pp. 188-197). Westport, CT: Libraries Unlimited.

Lee, S. Y. (2005a). The robustness of extensive reading: Evidence from two studies. International Journal of Foreign Language Teaching, 1(3), 13-19.

Lee, S.Y. (2005b). Facilitating and inhibiting factors on ELF writing: A model testing with SEM. *Language Learning,* 55(2), 335–74.

Lee, S.Y. (2006). A one-year study of SSR: University Level EFL students in Taiwan. *International Journal of Foreign Language Education*, 2 (1), 6-8.

Lin, S-Y, Shin, F., & Krashen, S. (2007). Sophia's choice: Summer reading. *Knowledge Quest*, 35(3). 52-55.

Lituanas, P. M., Jacobs, G. M., & Renandya, W. A. (2001). A study of extensive reading with remedial reading students. In Y. M. Cheah & S. M. Ng (Eds.) *Language instructional issues in Asian classrooms* (pp. 89-104). Newark, DE: International Development in Asia Committee, International Reading Association.

Liu, CK. (2007). A reading program that keeps winning. In Selected Papers from the Sixteenth International Symposium on English Teaching. English Teachers' Association/ROC, Taipei: Crane Publishing Company.

Mason, B. (2006). Free voluntary reading and autonomy in second language acquisition: Improving TOEFL scores from reading alone. *International Journal of Foreign Language Teaching,* 2(1), 2-5.

Mason, B. & Krashen, S. (1997). Extensive reading in English as a foreign language. System, (25), 91-102.

McQuillan, J. (1998). *The literacy crisis: False claims and real solutions*. Portsmouth, NH: Heinemann Publishing Company.

National Institute of Child Health and Human Development (NICHD). (2000). Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups. (NIH Publication No. 00-4754). Washington, DC: U.S. Government Printing Office.

Neuman, S., & Celano, D. (2001). Access to print in low-income and middle-income communities. *Reading Research Quarterly,* 36(1), 8-26.

Sheu, S. (2003). Extensive reading with EFL learners at beginning level. *TESL Reporter*, 36(2), 8-26.

Sims, J. (1996). A new perspective: Extensive reading for pleasure. The Proceedings of the Fifth International Symposium on English Teaching, pp. 137-144. Taipei: Crane Publishing Company.

Smith, K. (2006). A comparison of "pure" extensive reading with intensive reading and Extensive Reading with Supplementary Activities. International Journal of Foreign Language Teaching (IJFLT), 2(2), 12-15.

Smith, K. (2007). The effect of adding SSR to regular instruction. In Selected Papers from the Sixteenth International Symposium on English Teaching. English Teachers' Association/ROC, Taipei: Crane Publishing Company.

Stokes, J., Krashen, S., & Kartchner, J. (1998). Factors in the acquisition of the present subjunctive in Spanish: The role of reading and study. *ITL: Review of Applied Linguistics,* 121-122, 19-25.

Witton-Davies, G. (2006). What does it take to acquire English? *International Journal of Foreign Language Teaching,* 2(2), 2-8.

Yuan, Y. P., & Nash, T. (1992). Reading subskills and quantity reading. Selected papers from The Eighth Conference on English Teaching and Learning in the Republic of China, pp. 291-304. Taipei: Crane.

K-12 Education in a Changing World

<center>Chapter 2</center>

Teaching the Predictable Nature of Informational Text

Barbara Marinak

Abstract

The case for choosing and using more informational text at all grade levels has been made by a number of researchers (Duke, 2000; Duke & Pearson, 2002; Hall, Sabey & McClellan, 2005; Williams, Hall, & Lauer, 2004). However, Donovan (2001) found teachers reluctant to balance classroom reading collections because they were not sure how to support children's comprehension using informational text, and lacked methods to productively teach the specific structures of informational materials. This article explores several frameworks that support comprehension instruction by teaching the elements and structures of informational text. These methods can be used during guided reading or guided writing. The suggestions are evidence-based ways to teach the predictable nature of informational text.

Teaching the Predictable Nature of Informational Text

Fictional text contains a story structure that has been taught in classrooms for many decades (Williams, Hall, & Lauer, 2004). Teachers routinely organize their instruction of fiction around the basic elements of characters, setting, problem, events, and resolution. As a result of consistent instruction and regular exposure to stories, students begin to see predictability in fiction text. They become familiar with the elements of story grammar and can comfortably make connections within and across various texts (Hall, Sabey & McClellan, 2005; Williams, Hall, & Lauer, 2004).

While informational text also contains predictable elements and structures, research indicates that instruction in the predictability of nonfiction material has not occurred as frequently as it has with fiction text in elementary classrooms (Duke, 2000; Williams, Hall, & Lauer, 2004). These studies point to a shortage of high quality informational text in elementary book collections and a lack of familiarity on the part of

instructors with how nonfiction is organized as two reasons that the elements and structures of nonfiction are not regularly included in reading instruction.

Over the last ten years, many researchers have presented a very compelling case for exposing children of all ages to more informational text by including more nonfiction in book collections and in reading instruction (Duke 2000; Duke & Pearson, 2002; Hall, Sabey & McClellan, 2005; Williams, Hall, & Lauer, 2004). A number of these studies make the case for not only balancing book collections, but also providing explicit instruction in the predictable nature of informational text. Viewing this crucial genre as "predictable" means that readers: (a) will become familiar with the recurring elements that can be identified in informational text and, (b) will be able to recognize the text structures used to organize content.

Research clearly indicates that early and frequent reading instruction using informational text prepares readers for the comprehension demands that await them (Hall, Sabey & McClellan, 2005; William, Hall & Lauer, 2004). This article examines instruction strategies that can enhance the "predictability" of informational text. Specifically, the following sections define the five common elements found in most informational text, describe the five most frequently occurring text structures, and illustrate several methodological approaches to teaching these frameworks.

Teaching the Elements of Informational Text

Like fictional story grammar, five text elements can be identified that commonly occur across most informational text (Moore, Henk, & Marinak, 1988). The five elements of informational text are: author's purpose, major ideas, supporting details, readers' aids, and vocabulary. These five elements can provide an instructional framework to support readers as they become increasingly more proficient at comprehending various types of nonfiction. Below is a brief definition of each element.

- Author's Purpose: To provide information about the topic
- Major Idea(s): The key points the author wants the reader to understand
- Supporting Detail(s): The information that supports and clarifies the major ideas
- Reader's Aids: The variety of pictorial, graphic, typographic and structural representations used to convey information
- 5. Vocabulary: Technical words that are needed for full understanding of the content

Teaching the Structures of Informational Text

The term "text structure" refers to the organizational logic of a text (Neufeld, 2005). In other words, structures are the manner in which

information in the text is organized for presentation. Specifically, a structure is defined by the relationship that exists among the major ideas and supporting details.

Studies carried out over the past decade reveal that reading instruction includes important before-, during-, and after-reading strategies. Predicting, clarifying, monitoring comprehension, applying fix-up strategies, and summarization are frequently found in lessons (Neufeld, 2005; Pressley & Wharton-McDonald, 1997). There is compelling evidence that teaching students to recognize the underlying structure in text improves comprehension (Pearson & Dole, 1987; Pressley & Wharton-McDonald, 1997). However, text structure instruction remains predominantly limited to fiction (Williams, 2005).

Frequent instruction in narrative text structure can be attributed to elementary book collections being comprised mostly of fiction (Duke, 2000) and the relative simplicity of a single fictional structure (a story grammar) (Williams, 2005). Perhaps more important, Donovan (2001) found that teachers' preferences for fiction grew out of a lack of comfort and familiarity with informational text. In addition, classroom teachers weren't sure how to support children's comprehension using informational text. Specifically, teachers did not possess methods to productively teach specific text structures. It was also found that when choosing children's literature, teachers tended to assume that informational texts were too difficult and too boring for young readers.

Informational text has a variety of structures that can be challenging to teach. There are, however, a number of compelling reasons to teach the patterns of organization in text. Hall, Sabey, and McClellan (2005) and Williams (2005) found that text structure instruction was effective for promoting informational text comprehension. Text structure awareness has also been linked to developing accurate recall and retelling skills (Richgels, McGee, Lomax & Sheard, 1987). These studies found that readers who understand the organizational structures of text typically find greater success in identifying important information contained in the texts, as well as the relationships between ideas.

Up to 10 structures can be found in informational text. However, only five occur frequently in K-8 books and textbooks. The five most common text structures found in elementary and middle level informational text are: enumeration, time order, compare and contrast, cause and effect, and question and answer (Neufeld, 2005; Richgels, McGee, Lomax & Sheard, 1987). Table 1 describes each text structure using the relationship that exists within and between two important elements of informational text: major ideas and supporting details. For example, in a time order text structure, major ideas and supporting details must each be presented in a particular

sequence. In a compare/contrast text structure, the supporting details of two or more major ideas indicate how the concepts are similar or different.

Table 1
Five Frequently Occurring Text Structures

Enumeration	A major idea is supported by a list of details and examples.
Time Order	A major idea is supported by details. Both major ideas and supporting details must be in a particular sequence.
Compare and Contrast	The supporting details of two or more major ideas indicate how those concepts are similar or different.
Cause and Effect	The supporting details give the causes of a major idea or are the results produced by the major idea.
Question and Answer	A major idea is posed as a question and supporting details are found in the answer to the question.

Each of these text structures is associated with a set of signal words. Signal words can be used during reading to recognize the text structure being used to present information. And these same signal words must be used to effectively write within a text structure. Table 2 contains a sample of signal words for each of the five text structures.

Table 2

Enumeration	Time Order	Compare/ Contrast	Cause/Effect	Question/ Answer
for instance			because of	
for example	at	but	as a result of	question
such as	first	different from	in order to	answer
to illustrate	next	same as	may be due to	who?
most	then	similar to	effects of	what?
important	later	as opposed to	therefore	when?
in addition	before	instead of	consequently	where?
another	after	although	for this reason	why?
furthermore	when	however	if...then	how?
first	finally	compared with	thus	
second	preceding	as well as	causing	
	following	both	allow	
		while	forming	

In order to incorporate the elements and text structures of informational text into reading lessons, teachers need to use a variety of methods that allow them to differentiate such instruction. The remainder of this article offers

five methods that can be used to guide comprehension and writing in response to text.

Methods to Guide Comprehension and Writing

Signal words and a variety of graphic organizers can be used to effectively teach the elements and structures of informational text (Armbruster, Anderson, & Ostertag, 1987; Duke & Pearson, 2002; Vacca & Vacca, 1999). The suggested methods below are helpful during comprehension instruction. In addition, and perhaps more importantly, each can support writing in response to text, which is a critical skill required on high-stakes tests. Text maps, writing guides, summary patterns, and constructed response templates provide a variety of ways to guide comprehension and/or writing in response to text (Moss, 2005).

The methods below are illustrated using two passages from *Wild Babies* by Seymour Simon (1997) and one text structure: compare and contrast. It should be noted that Williams, Hall, Lauer, Stafford, and DeSisto (2005) found that transfer of knowledge does not occur across text structures. Therefore, though compare and contrast was the structure selected for these examples, research indicates that it is necessary to teach and practice each text structure. However, each of the methodological examples provided here can be easily adapted for use with other text structures.

Informational Text Map

In *Wild Babies*, readers learn specifically about the birth and early development of giraffes and emperor penguins. Table 3 is an informational text map based on the "wild babies" of the text. The five elements provide the framework for comprehension. In this case, the giraffe and penguin babies are used as the two major ideas. This informational text map can be used during guided reading discussions to monitor comprehension or as an organizer for summarization after reading.

Table 3
Informational Text Map for *Wild Babies*

Author's Purpose	To share information about the birth and development of wild babies.
Major Idea	Emperor Penguin
Supporting Detail	Baby animal is called a chick.
Major Idea	Giraffe
Supporting Detail	Baby animal is called calf.
Reader's Aids	photographs
Vocabulary	kindergarten**,** range, downy

Compare and Contrast Text Map

There is considerable research to support the use of text maps when teaching informational structures (Armbruster, Anderson, & Ostertag, 1987; Duke & Pearson, 2002; Vacca & Vacca, 1999). Text maps are visual representations of both the important information in the text as well as the informational text structure (Neufeld, 2005). Table 4 is a compare and contrast text map. This text map was designed to scaffold the compare and contrast process more deliberately than a Venn diagram (Marinak, Moore, & Henk, 1998). In addition to providing the major ideas and supporting details, this compare and contrast text map requires the identification of attributes that will be used to compare and contrast the major ideas, a key step missing from the construction of a Venn diagram.

Table 4 illustrates the compare and contrast text map with information about the giraffe and the emperor penguin. The map requires students to fill in the major ideas, attributes and supporting ideas. If the map is unfamiliar or students are less proficient comprehending the text structure, a pattern guide can be created from the map that contains several key words filled in for each element (e.g. one major idea, several supporting details, and several attributes).

Table 4
Compare and Contrast Text Map for *Wild Babies*

Major Idea		Major Idea	
Giraffe		Penguin	
Supporting Details	**Attributes**	**Supporting Details**	
Africa	Live	Antarctica	
One	Number of Babies	One	
Live	Type of Birth	Egg	
Kindergarten	Protection of Young	Kindergarten	

Writing Guide

A writing guide provides significant scaffolding for text structure instruction (Hall, Sabey, & McClellan, 2005). Questions and corresponding signal words are embedded in the guide. As readers answer the questions about the structural relationship, they create full sentences that can be used to construct a summary paragraph. Table 5 is a writing guide for two attributes from *Wild Babies*: "Where do the animals live?" and "How many babies does each animal have?" After completing a writing guide for each

attribute from Table 4, four compare and contrast sentences are written. Writing guides can be used independently by students or by the teacher when modeling a new text structure.

Table 5
Compare and Contrast Writing Guide for *Wild Babies*

Where does the animal live?

	Antarctica	Africa
Giraffe		X
Penguin	X	

Giraffes and penguins are:　　the same　　(different)

How?

Giraffes live in Africa, <u>but</u> penguins live in Antarctica.

How many babies?

	one	more than one
Giraffe	X	
Penguin	X	

Giraffes and penguins are:　　(the same)　　different

How?

<u>Both</u> giraffes and penguins have one baby at a time.

Compare and Contrast Signal Words: but, both

Summary Pattern
　　A summary pattern (also known as a story or text frame) (Cairney, 1990; Cudd & Roberts, 1989) provides an explicit framework for reader response. Specifically, a summary pattern identifies the text (or texts) being summarized and is written within the appropriate text structure with signal words embedded. Users complete the summary pattern by filling in the author's purpose, major ideas, supporting details, and vocabulary. The

amount of scaffolding provided in a summary pattern is helpful to readers newly introduced to a text structure and/or students who require writing support.

    Table 6 is a summary pattern for comparing and contrasting the wild babies of giraffes and emperor penguins.

Table 6
Compare and Contrast Summary Pattern for *Wild Babies*

Introduction

The following summary compares and contrasts _____ and
_____.

Wild Babies is a_____ (fiction/nonfiction)
(fiction/nonfiction) book about _____
_____.

Compare

_____ and _____
are similar in several ways. First, both _____
_____.

In addition, _____.

Contrast

_____ and _____
are **different** in several ways. First, _____
_____ while _____
_____. Secondly, _____
_____, but _____
_____.

Conclusion

In conclusion, ***Wild Babies*** taught me _____.

Signal Words
Comparison: similar, both
Contrast: different, while

Constructed Response Template

One measure of comprehension on high-stakes tests in many states is writing in response to text. On most statewide assessments that contain a constructed response requirement, readers are permitted to have a sheet of scrap paper during testing. However, observations conducted during coaching in a local school district revealed that these sheets of scarp paper are often unused to plan the writing of constructed responses. Unsurprisingly, a significant correlation has been documented between students who did not use the scrap paper and those who were less than proficient in their constructed responses (Marinak, 2006). Consequently, the data clearly indicated that readers needed an easy-to-remember template that could be drawn on their scrap paper during testing in order to help guide their construction of responses. The challenge was to design a template that could be used with any genre (narrative text, informational text, and/or poetry) since any and all genres could be used as text passages on the tests.

Table 7 contains a design for a compare and contrast constructed response template. It reflects Pennsylvania's expectations, but it is generic enough that it could be easily adapted to other state standards. Proficient constructed responses in Pennsylvania must be in the form of a paragraph that demonstrates comprehension of the passage(s) and contains the number of text support details required in the prompt. When using the template, students draft an introductory statement, fill in the circle with the required number of details, summarize the needed details from the text, and draft a conclusion.

Table 7
Constructed Response Template for *Wild Babies*

Introduction:

Giraffe Passage

# of details: <u>4</u>

Emperor Penguin Passage

# of details : <u>4</u>

1. **Lives in Africa**
2. **Has one baby**
3. **Live birth**
4. **Protects young in kindergarten**

1. **Lives in Antarctica**
2. **Has one baby**
3. **Hatched from an egg**
4. **Protects young in kindergarten**

Conclusion:

The constructed response template is used all year long when practicing reading and responding across text during reading instruction. Observational data collected in the past two years indicates that when state assessments are administered, scrap paper which was once left blank or filled with doodling, now contains a template to support this very unique writing process. Statewide assessment scores also indicate significant improvement in the constructed response expectation.

Conclusion
In conclusion, researchers have suggested several factors that are critical when promoting comprehension of informational text. These include explicit instruction in the structures and organization of informational text, practice with signal words and graphic organizers that are representational of the structures found within text, and exposure to a wide variety of informational text (Hall, Sabey, McClellan, 2005; Williams, Hall, & Lauer, 2004). As instruction progressively includes more reading and responding to nonfiction, the methods discussed here can be used to teach the predicable nature of informational text.

References

Armbruster, B., Anderson, T., & Ostertag, J. (1987). Does text structure/summarization instruction facilitate learning from expository text? *Reading Research Quarterly, 22*, 331-346.

Cairney, T. (1990). *Teaching reading comprehension.* Milton Keynes, UK: Open University Press

Cudd, E.T., & Roberts, L. (1989). Using writing to enhance content area learning in the primary grades. *The Reading Teacher, 42*, 392-404.

Donovan, C. (2001). Children's development and control of written story and informational genres: Insights from one elementary school. *Research in the Teaching of English, 35*, 394-447.

Duke, N. (2000). 3.6 minutes per day: The scarcity of informational text in first grade. *Reading Research Quarterly, 35*, 202-224.

Duke, N. & Pearson, D. (2002). Effective practices for developing reading comprehension. In A. Farstrup & J. Samuels (Eds.), *What research has to say about reading instruction* (3rd ed., pp. 205-242). Newark, DE: International reading Association.

Hall, K., Sabey, B., & McClellan, M. (2005). Expository text comprehension: Helping primary-grade teacher use expository text to full advantage. *Reading Psychology, 26,* 211-234.

Marinak, B. A. (2006). *The relationship between PSSA scores and benchmark constructed responses*. Unpublished manuscript.

Marinak, B. A., Moore, J & Henk, W. (1998). *Reading instructional handbook*. Harrisburg, PA: Pennsylvania Department of Education.

Moore, J., Henk, W., & MarinaK, B. A. (1988). Reading instructional handbook. Harrisburg, PA: Pennsylvania Department of Education.

Moss, B. (2005). Making a case and a place for effective content area literacy instruction in the elementary grades. *The Reading Teacher 59(1)*, 46-55.

Neufeld, P. (2005). Comprehension instruction in content area classes. *The Reading Teacher, 59(4)*, 302-312.

Pearson, P., & Dole, J. (1987). Explicit comprehension instruction: A review of research and a new conceptualization of instruction. *The Elementary School Journal, 88*, 151-165.

Pressley, M., & Wharton-McDonald, R. (1997). Skilled comprehension instruction and its development through instruction. *School Psychology Review, 26*, 448-466.

Richgels, D., McGee, L., Lomax, R., & Sheard, C. (1987). Awareness of four text structures: Effects on recall of expository text. *Reading Research Quarterly, 22*, 177-196.

Simon, S. (1997). *Wild babies*. New York: HarperTrophy

Vacca, R., & Vacca, J. (1999). *Content area reading: Literacy and learning across the curriculum* (6th ed.). New York: Longman.

Williams, J. (2005). Instruction in reading comprehension for primary-grade students: A focus on text structure. *Journal of Special Education, 39(1*), 6-18.

Williams, J., Hall, K., Lauer, K., Stafford, B., & DeSisto, L. (2005). Expository text comprehension in the primary classroom. *Journal of Educational Psychology, (97)4*, 538-550).

Williams, J., Hall, K., & Lauer, K. (2004). Teaching expository text structure to young at risk learners: Building the basics of comprehension instruction. *Exceptionality, 12(3)*, 129-144.

Chapter 3

The Power of Family Science Learning Events: All Stakeholders Benefit

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Abstract

This article focuses on the exposure of pre-service teachers to Family Science Learning Events (FSLEs), a pilot project designed to prepare prospective teachers to work with families as part of their university coursework. Results showed that participation in FSLEs can be a powerful facilitator of learning for all involved. Through the use of practical, culturally-relevant, hands on experiences that help students and their parents acquire knowledge and skills in science, the pre-service teachers strengthened their own knowledge, skills, and strategies. Future educators were given the opportunity to observe science learning in progress and to integrate scientific experiments with artistic activities. They also learned not to underestimate the knowledge and abilities of the parents and the students. These are all critical elements in preparing today's teachers for tomorrow's students.

The importance of parental involvement in enhancing the quality of their children's educational experiences and improving the likelihood that children will be successful in school is well documented (Chrispeels & Rivero, 2001; Cordry & Wilson, 2004; Delgado-Gaitan, 2001; Dierking & Falk, 1994; Jones &Valdez, 1997; Quezada, Diaz & Sanchez, 2003; Valdes, 1996). Parental involvement can result in higher reading scores, greater language growth and development, and increased motivation to achieve (Harvard Family Research Project, 2007). Parental involvement includes a wide range of activities from promoting the importance of education to participating in the decision-making and operations of schools. For maximum results, there should be some alignment of parents' attitudes and practices with the school's expectations of parents and support for family involvement.

Although policy makers and educators agree that parental involvement is critical, schools often struggle to create effective partnerships with parents, particularly poor, minority parents. Parents, regardless of race or ethnicity, are concerned about their children's education and are willing to become involved if schools provide the support and information they need (Chavkin & Williams, 1988; Epstein, 1993). As the number of Hispanic students entering our schools increases, the ability to forge meaningful parental relationships may mean overcoming challenges such as differences in language, cultural understandings of the roles of parents and teachers, and anxiety about parents' efficacy to help their children with schoolwork. Therefore, it is extremely important that teachers develop the skills, strategies, and attitudes needed to collaborate effectively with parents.

If we are to have a corps of teachers who are highly effective in involving parents, it is imperative that pre-service teachers (PSTs) receive training in their teacher education programs that prepare them to encourage and develop partnerships with parents. Epstein (1993) stresses the importance of school and teacher practices in the equation:

> When parents believe the schools are doing little to involve them, they report doing little at home. When parents perceive that the school is doing many things to involve them, they are more involved in their children's education at home and at school (p. 67).

Yet, many teacher preparation programs lack any coursework that prepares teachers to collaborate effectively with parents and families (de Acosta, 1996).

Family Science

Another reason to underscore the importance of preparing teachers to work with parents centers on the significant influence that parental attitudes and knowledge have on their own children's attitudes toward learning, particularly when it comes to learning about science (McDonald, 1997; McDonald & Canales, 2005). Programs like *Family Science* provide opportunities for teachers, parents, and children to engage in learning science together and to experience how science is a part of their daily lives. The coupling of science with lived daily experiences is what makes science culturally relevant. When children see their parents showing an interest in science and having fun conducting simple investigations, they too show an interest. This modeling of positive attitudes toward science can, in turn, shape their children's beliefs and attitudes toward science.

The need to engage more parents in their children's learning and the success that pre-service teachers experience through early exposure in their teacher preparation program is the focus of this article. It describes a

National Science Foundation funded pilot project at an Hispanic Serving Institution designed to prepare prospective teachers to work with families as part of their university coursework. Through the use of practical hands on experiences that help students and their parents acquire knowledge and skills in science, we sought to answer the following questions:

How does the participation of PSTs in Family Science Learning Events (FSLEs) affect their:

1) Feelings of self-efficacy in science teaching and the ability to conduct FSLE in the future?

2) Perceptions of teaching science to diverse student populations?

3) Ability to engage parents/Hispanic parents in the science activities with their students?

Research Design

This study has run concurrently for three (3) full semesters and two (2) summer sessions resulting in a sample size of 258 future elementary, middle and high school science teachers. PSTs worked in pairs to create, or adapt, a life science activity that was engaging and involved children and their parents in hands-on explorations of science content.

Activities consisted of simple science experiments and demonstrations using items such as paper clips, paper cups, mirrors, pennies, plastic drink bottles, inexpensive grocery items and other common household items. Some of the FSLEs contained a theme such as "Super-Sized Science" that related to science and nutrition while others were a collection of various life science activities.

All activities required materials that were inexpensive and easily found in households to maximize the emphasis on cultural relevance. Strong connections to one or more state science standards – in this case, the Texas Essential Knowledge and Skills (TEKS) were also a requirement. Stations were set up with copies of take-home pamphlets describing how to construct and repeat the activity with brief explanations of the science content involved. In many cases, the tri-fold display that drew attention and interest to the activity and the printed directions were written in both English and Spanish. The activities were peer-reviewed by PSTs in the college classroom prior to public implementation to allow for appropriate and timely feedback.

Following revision, the activities were implemented in three different after-school settings for each fall and spring semester and at one venue for each summer session. Venues were purposively selected and included elementary and middle schools in ethnically diverse school districts, low- and middle- socio-economic districts, a charter school, and a location within a regional science fair. Summer session pre-service teachers conducted their activities at a local Boys and Girls Club.

Qualitative data collected included the PSTs' formal lesson plans written for their activities and all brochures and photographs of the project presentation boards. Additional qualitative data included pre-service teachers' semi-structured written reflections regarding the creation and implementation of their curricula, their overall experiences at the FSLE, their perceptions of student and parent participation, perceived self-confidence in organizing an FSLE at their future schools, and other impressions.

Quantitative data consisted of Likert scaled pre- and post-attitudinal surveys regarding perceptions of student and parent engagement in science, confidence in ability to conduct an FSLE at their future schools, and affect questions regarding confidence in ability to use culturally relevant teaching strategies in science teaching. Other data collected at the event included post-event parent surveys in both English and Spanish; videotaped and audio-taped interviews with parents, students, and pre-service teachers during the FSLE; and data regarding ethnicity and age of the participants. A probability value (p) of less than 0.05 was accepted as significant in all statistical analyses.

Data Analysis

Data were analyzed using a mixed methods approach. Mixed methods research may be defined as "the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study" (Johnson & Onwuegbuzie, 2004). Increased use of mixed methods in research has the potential to raise some of the problems associated with singular methods. According to Johnson, Onwuegbuzie, and Turner (2007), the fundamental principle of mixed research states that researchers should collect multiple data using different strategies, approaches and methods in such a way that the resulting mixture or combination is likely to result in complementary strengths and non-overlapping weaknesses.

In this study, a quantitative component (Likert-scale surveys) was used to triangulate evidence found in the qualitative interviews of PSTs, students, and parents, and in audio-taped and videotaped observations. Trustworthiness was established in this research through creating credibility, transferability, dependability, and conformability (Lincoln & Guba, 1985; Tashakkori & Teddile, 1998). Credibility is the most important component of trustworthiness and was established in this study through the triangulation of data generation and collection, having a purposive sample, member checking, and the incorporation of a quantitative data component.

Results

Exit interviews and surveys revealed that participating elementary and

middle school students all had very positive comments regarding the FSLEs. Participating students indicated that they were excited to learn more about science, spend time with their family, and receive information that was provided to duplicate the experiments and demonstrations at home, thereby continuing the science conversations. Several of the FSLE venue host teachers and administrators contacted the university faculty member to personally comment about the excellent ideas that the future teachers had presented at the FSLEs. The principal at one FSLE host school was quoted as saying "this is the best science we've had." Another principal stated that in her nine years as a school administrator/principal, the FSLE was the "first time I've ever had parents actually *doing* something with the students in our school."

Increased Confidence in Teaching Science

While teacher content knowledge is a major indicator in measuring the success of student learning (Darling-Hammond & Bransford, 2005), 87% (n=253) PSTs surveyed on their first class day stated that they did not like science and did not feel confident teaching science. Most (68%, n=253) of their comments indicated that this lack of confidence to teach science was primarily attributed to a general lack of exposure to the subject. Written reflections revealed many stories of negative memories of science instruction with the greatest reported method of knowledge transmission being constrained to textbooks and worksheets and an occasional laboratory demonstration. Few (12%, n=253) students reported having a rich or enjoyable background in science. An announced "draw a scientist doing something" activity on the first class day always revealed almost all of the students having a stereotypical view of the white, male 'nerd' scientist that is pervasive in the media. Science, in their opinion, was only meant for scientists, not for them.

However, FSLEs provided opportunities for the university students to directly observe learning-related phenomena. For many of the university students, this was their first authentic teaching experience. Results from *t*-tests (pre/post surveys) indicated that virtually all of the university students and FSLE participants were positively impacted by their participation. PSTs' level of confidence in teaching science significantly increased ($p = 0.002$, n=253, $\alpha = 0.05$). FSLEs provided future teachers with experiences of learning theory in action and opportunities to observe teaching techniques such as collaborative learning, lesson planning and implementation, and various management strategies. Consequently, PSTs expressed increased enthusiasm toward teaching science.

> I have always been intimidated by science and thankfully, those feelings went away during this event. I was surprised to realize how

> calm I was while teaching our information. I had not realized how social I can be with students! (Elementary PST)

After initially expressing a negative attitude toward science, students experienced the power of involving students in hands-on, minds-on learning opportunities, and their attitudes changed. FSLE PST's written reflections, when asked about their attitude regarding teaching science, expressed increased confidence in science teaching, excitement about the prospect of teaching science, and the desire to host a FSLE at their future campus.

> I think that when you love to teach, it does not matter whether you work with children or adults… I was intrigued by the number of students and parents alike who did not understand simple science concepts and I wish to create a society that has increased scientific understandings beginning in my classroom... This experience has definitely enhanced my passion to teach science. (High school PST)

Increased Confidence in Culturally Relevant Teaching
Culturally relevant curriculum discussions presented to the science PSTs included examples from works such as Delpit *Other People's Children* (2006), Darling-Hammond *The Right to Learn* (1997), Kozol *Savage Inequalities* (1992), Ladson-Billings *The Dreamkeepers* (1997), or Valenzuela *Subtractive Schooling* (1999). In addition, examples of culturally relevant science were used in class. One such example related to prickly pear cactus (nopal), which grows throughout Texas and from Mexico to Canada and can be purchased in most Texas grocery stores. The ability for the prickly pear cactus (nopal) to lower blood sugar has been well documented by many studies. In traditional Mexican medicine, nopal is used for treating type-2 Diabetes (Gibson, 2008).

PSTs mentioned not *really* understanding the culture of many of the Hispanic students and English Language Learners (ELLs) until they entered schools with low socio-economic status (SES) and/or a local charter school which provided an alternative setting for those students who did not succeed in a traditional school. In these settings, PSTs had Hispanic students, parents and even grandparents attend the FSLE. Some of the Hispanic high school students attending the charter school brought their own children, and many PSTs commented on the fact that they had "never seen a high school student bring their own child" to a school-sponsored event. Many PSTs commented that they never felt more welcomed and appreciated as they did at the lower SES schools and charter school. They initially had misgivings about "these kind of students" and after, commented that their perceptions were negated and they felt somewhat ashamed for having believed these stereotypes.

> Honestly, I am sad to admit that I thought that people who came from other countries are not that intelligent due to their education systems. Working with these individuals has helped me understand that they are bright and extremely smart. The only barrier is language and it is no more their fault that they do not know English than it is mine that I don't know Spanish. So I am glad that I have grown in this way… I feel as though I have grown a lot this semester and I believe a lot has to do with getting out there and working with students… I am so proud that I was able to be part of something so meaningful and in helping families learn together. (Elementary PST)

One venue had adult ELLs attending an evening class. The adult ELLs came to the FSLE, and both the adult ELL students and pre-service science teachers engaged in teaching and learning science. ELLs asked the bilingual PSTs to refrain from using Spanish during their presentations as the adult ELLs wanted to learn English. PSTs also engaged with students who spoke English, and were accompanied by parents and grandparents who spoke Spanish. For many PSTs, the idea of teaching diverse learners had been limited to theoretical reading assignments and had never been experienced in an authentic context. Further, many had never considered teaching science to ELLs, and they found the experience beneficial. One PST wrote in her reflection:

> The experience made me realize just how important it is to be bilingual. (Elementary PST)

> I was really proud to see such a big turnout from the Hispanic population. Both my parents are from Mexico and I remember them making me go to school events like 'Family Science Night' while all my friends stayed home and played hide-and-seek. When I saw so many Hispanic families, it made me happy to know that there are teachers out there who make a difference in a child's education. These children not only learn to believe in themselves, but their parents begin to believe in them, too. (Middle school PST)

In spite of the fact that over 40% of PST participants were Hispanic and many were first generation college students, they revealed having little exposure to culturally relevant teaching strategies in science. This is consistent with the notion of subtractive assimilation in schools as a process that removes Hispanic youth from "important social and cultural resources, leaving them progressively vulnerable to academic failure" (Valenzuela, 1999, p. 3). Teachers often fail to forge meaningful connections with

students of differing races and cultures. These students are often alienated from their teachers. Real learning is difficult to sustain in an atmosphere that is filled with mistrust. However, by including culturally relevant activities, tri-fold posters with English and Spanish titles, and in many cases, take-home handouts in English and Spanish, and by relating to Hispanic students in unfamiliar school settings, PSTs' post-surveys revealed increased confidence in utilizing culturally relevant strategies to teach science to diverse student populations in elementary and middle schools (p= 0.0002). Observed conversations that occurred between PSTs and Hispanic families were initially hesitant and stilted. However, as time progressed, videotapes and photographs showed that body language and tone of voice were revealing more trusting, open and friendly conversations. Activities were fun and engaging. Refreshments provided the opportunity to engage in friendly conversation while eating and drinking. Social and language barriers became less noticeable as all participants formed a community of learners (Bransford, Brown & Cocking, 2000).

Increased Confidence in Engaging Parents

The need for teacher training in parental engagement has been documented in several studies (Epstein, 2001; Hiatt-Michael, 2001; Minnick & Associates, 2005). Power & Perry (2002) found that PSTs who were involved in working with family and community at local school districts during their teacher preparation period demonstrated strong beliefs in family involvement and an understanding of the difference it makes in the learning process. Existing courses, or components of courses, that address this need typically target special education and early childhood teachers. Strategies that address parental involvement are typically superficial and rarely provide PSTs with a theoretical framework or formal opportunities to interact with parents except for the occasional observational role during student-teaching. Compounding this limitation in teacher preparation programs is the state-restricted number of credit hours in a teacher certification granting program that must be allocated to provide professional preparation for teachers in educational foundations, pedagogy, curriculum development and assessment. As a result, teachers generally do not see parent engagement as part of their professional obligation and often do not have any experience in communicating with parents until asked to do so during a parent-conference as an in-service teacher.

Following the FSLE, PSTs felt significantly more confident in engaging elementary ($p = 0.0005$, n=242) and middle school ($p = 0.0003$, n=11) parents in their children's science education. PSTs noted in their reflections that by becoming personally acquainted with the child's parents, they felt they better understood the child. PSTs' written reflections mentioned the newly perceived feeling of the importance of getting to know a child's

parents and siblings. The PSTs were surprised at the level of enthusiasm that the parents had. Many related anecdotal information regarding the level of inquisitiveness exhibited by the student and parent participants:

> Family Science makes science real to parents. It connects science to their children which connects it to the parents. It connects their children's classroom to the real world – their world. (Elementary PST)

Parental Involvement

Research indicates that increasing parental involvement has a direct positive impact on student achievement, especially among Hispanic students (Jones & Valdez, 1997). Parental involvement in the education process is not often common in Hispanic families because traditionally raised Hispanic parents believe that the educative process and all that is involved in formal education is the role of educators and that the role of the parent is to provide for the well-being of the entire family (Valdes, 1996). However, educators generally believe that their role is to provide knowledge and skills for students to become productive citizens, and that parents need to provide assistance at home in reviewing material and seeking ways to ensure that their children are successful in school (Brain & Reid, 2003). This disconnect between the expectations of home and the expectations of school often lead educators to conclude that Hispanic parents are simply not concerned about the education of their children. This misconception is further complicated because of the barriers that many Hispanic parents face, including not having English as their first language and therefore requiring more support in order to be engaged with schools in their children's learning (Chavkin & Gonzales, 1995; Friedlaender, 1999). A survey of Texas school administrators identified the need to increase parental involvement as one of the barriers to student achievement in their schools (Texas Elementary Principals and Supervisors Association, 2006).

Oral and written interviews collected during and following the FSLE indicated that parents enjoyed spending time with their children in a school setting, and conversely, the students enjoyed seeing their parents in the role of a learner. Parents commented on the fact that they had never been involved with FSLEs and felt that it was a good use of time. The only complaint that many had on the (written) exit survey was that, in spite of the 90 – 120 minute duration, the FSLE didn't last long enough!

When asked about the nature of the cultural relevancy of the activities, many parents expressed appreciation in seeing exhibit posters that were in both English and Spanish. They appreciated teachers who were bi-lingual and felt "welcomed" when they entered the room saw their native language represented. Some parents said they were initially apprehensive about

coming to the event, but they had been persuaded by their children and in some cases siblings, to attend the event. When asked why they had been apprehensive, those parents that responded (n = 62) said that they were not comfortable doing science (87%) and/or preferred not to attend school-sponsored events in general (32%). When asked if they would return for another FSLE, 100% of the parents sampled responded positively.

Conclusions and Implications

The results of this study suggest that participation in FSLEs that include PSTs can be a powerful facilitator of learning for all involved. Future educators who participated in these programs were given the rich opportunity to observe science learning in progress, and perhaps their only opportunity to work with parents as a pre-service teacher. Many expressed surprise at the level of prior science knowledge that students and parents exhibited, and they were encouraged to see the excitement for learning. PSTs reported that they learned to see science everywhere, to integrate scientific experiments with artistic activities, to take risks, and not to underestimate the students' abilities.

> In most of our classes we really don't get the chance to truly see how teaching really takes place. I think that I speak for everyone in the class when I say that the experience was an eye-opening event and allowed us to get needed experience in planning and teaching and how to put together events that will excite students and parents. (High School PST)

Future Studies

The incorporation of FSLEs into the course curriculum for Foundations of Life Science is now an integral part of the curriculum for the science instructor who participated in this study. Future plans include procuring funding to incorporate this model at two other large Hispanic Serving Institutions in the southwest in both math and science courses. In addition, PSTs that have graduated and are now in their own classrooms will be participating in studies to investigate how this model is being implemented in their respective campuses. Questions for investigation also include ways in which culturally relevant teaching strategies are being used in these classrooms.

References

Bransford, J. D., Brown, A. L., and Cocking, R. R. (2000). *How People Learn: Brain,Mind, Experience and School (Expanded Edition)*. National Academy Press, Washington, D.C.

Brain, K., & Reid, I. (2003). Constructing parental involvement in an educational action zone: Whose need is it meeting? *Educational Studies, 29*, 291-305.

Chavkin, N. F., & Gonzalez, D. L. (1995). Forging partnerships between Mexican American parents and the schools. West Virginia: *ERIC Clearinghouse on Rural Education and Small Schools*.ED388489.

Chavkin, N., & Williams, D. (1988). Critical issues in teacher training for parent Involvement. *Educational Horizons, 66,* 87-89.

Chrispeels, J.H., & Rivero, E. (2001). Engaging Latino families for student success: How parent education can reshape parents' sense of place in the education of their children. *Peabody Journal of Education*, *76*(2) 119-169.

Cordry, S., & Wilson, J.D. (2004). Parents as first teachers. *Education*, *125*, 56-62.

De Acosta, M. (1996). A foundational approach to preparing teachers for family and community involvement in children's education. *Journal of Teacher Education, 47, 9-15.*

Darling-Hammond, L. (1997). *The right to learn: a blueprint for creating schools that work.* San Francisco, CA: Jossey-Bass.

Darling-Hammond, L. & Bransford, J. D. (2005). *Preparing Teachers for a Changing World: What teachers should learn and be able to do.* San Francisco, CA: Jossey-Bass.

Delgado-Gaitan, C. (2001). Involving Latino families in schools: Raising student achievement through home-school partnerships. Thousand Oaks, CA: Corwin Press.

Delpit, L., & Kohl, H. (2006). *Other people's children: Cultural conflict in the classroom*. New York: New Press.

Dierking, L. D., & Falk, J. H. (1994). Family behavior and learning in informal science settings: A review of the research. *Science Education*, *78*, 57-72.

Epstein, J. L. (2001). *School, family and community partnerships: Preparing educators and improving schools.* Boulder, CO: Westview.

Epstein, J. L. (1993). Make parents your partners. *Instructor, 102*, 52-53.

Friedlaender, D. (1999, April). *The need for scaffolding parent support in an urban school.* Paper presented at the American Educational Research Association, Montreal, Canada.

Gibson, A. C. (2008). *Red scales in the sunset*. Retrieved January 18, 2008 from University of California-Los Angeles Web site:

http://www.botgard.ucla.edu/html/botanytextbooks/economicbotany/Coc
    hineal/index.html

Caspe, M., Lopez, M. E., & Wolos, C. (2006). Family involvement in
    elementary school children's education. *Harvard Family Research
    Project*.Available from: http://www.hfrp.org/publications-
    resources/browse-our-publications/family-involvement-in-elementary-
    school-children-s-education

Hiatt-Michael, D. (Ed.). (2001). *Promising practices for family involvement
    in school*. Greenwich, CT: Information Age Publishing.

Johnson, R. B. & Onwuegbuzie, A. J. (2004). Mixed methods research: A
    research paradigm whose time has come. *Educational Researcher,
    33*(7), 14-26.

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a
    definition of mixed methods research. *Journal of Mixed Methods
    Research 1*(2): 112-133.

Jones, T. G. and Valdez, W. (1997). *Effects of Latino parent involvement on
    academic achievement.* Paper presented at annual meeting of American
    Educational Research Association, Chicago, IL.

Kozol, J. (1992). *Savage inequalities: Children in America's schools*. New
    York, NY: Crown.

Ladson-Billings, G. (1994). *The dreamkeepers: Successful teachers for
    African-American children.* San Francisco: Jossey-Bass.

Lincoln, Y., & Guba, E. (1985). *Naturalistic Inquiry*. Beverly Hills, CA:
    Sage.

McDonald, J., & Canales, J. (2005). *Bridging the Gap: Developing a School/
    Family/ Community Partnership Model to Enhance the Early
    Mathematics and Science Literacy of Children Living in the Colonias*.
    Paper presented at annual meeting of American Educational Research
    Association, Montreal, Quebec, Canada.

McDonald, R. (1997). Using participation in a public school "family science
    night" programs as a component in the preparation of preservice
    elementary teachers. *Science Education, 81*(5), 577-595.

Minnick, I., & Associates (2005). *Draft TxCETP evaluation report 2000-
    2004*. Retrieved Feb. 1, 2008, from
    http://www.sci.tamucc.edu/txcetp/admin/documents/DRAFT_TxCETP_
    Evaluation_Report_1.pdf

Power, B., & Perry, C. (2002). True confessions of student teaching
    supervisors. *Phi Delta Kappan, 83*(5), 406.

Quezada, R. L., Diaz, D. M., & Sanchez, M. (2003). Involving Latino
    parents. *Leadership, 33*, 32-38.

Tashakkori, A., & Teddile, C., (1998). *Mixed methodology: combining
    qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.

Texas Elementary Principals and Supervisors Association (2006). *TEPSA 2006 member legislative survey*. Retrieved December 10, 2007, from http://www.tepsa.org/LeadershipGuide/ADVOCACY/LegislativeSurvey .pdf

Valdes, G. (1996). *Con respecto: Bridging the distances between culturally diverse families and schools*. New York: Teachers College Press.

Valenzuela, A. (1999). *Subtractive schooling: U.S. Mexican youth and the politics of caring*. NY: State University of NY Press.

Chapter 4

Brain Compatible Teaching and the Second Language Acquisition Classroom

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Abstract
As the population of English language learners continues to increase, schools must implement educational practices that will help students develop the necessary linguistic and academic skills for success in school. Brain compatible teaching and the second language acquisition processes complement each other. Brain compatible teaching enhances students' ability to develop a second language successfully. Teachers at the Blanche Moore Early Childhood Development Center, a dual language school, provide the classroom environment incorporating brain compatible strategies into their daily implementation of the school curriculum to help students develop bilingualism and biliteracy.

Brain Compatible Teaching and the Second Language Acquisition Classroom

The English language learner (ELL) population in Texas and across the United States continues to increase and presents educational challenges in an ever-changing world.

> Not only is the number of newcomers increasing; so is their diversity. Half a century ago, immigrants to the United States were most likely to arrive from Germany, Canada, Mexico, the United Kingdom, or Italy, in that order. Today, the top five sources are Mexico, India, China, the Philippines, and Cuba. (Crawford & Krashen, 2007, p. 9)

The increase in linguistic diversity, coupled with the demand for accountability by the No Child Left Behind Act, has led school districts to look for new ways to meet the linguistic and educational needs of the

children of these newcomer groups. Many schools with a high percentage of students who qualify as ELLs have created dual language programs to better serve their students. These schools credit the implementation of dual language programs with helping them achieve Annual Yearly Progress on state assessment measures (Kriteman, 2006). According to Cloud, Genesee, & Hamayan (2000, p. 5), despite some differences in program design and delivery, most dual language programs share the following objectives:

- Grade-appropriate levels of primary level development
- Grade-appropriate levels of academic achievement
- Functional proficiency in the second/foreign language
- An understanding of, and appreciation for the culture of target language group

Calderon & Minaya-Rowe (2003, pp. 6-7) additionally state that dual language programs are:

- NOT subtractive: Dual language programs promote native-language literacy skills and balanced bilingualism.
- NOT remedial programs: Dual language programs are designed for standards-based education while promoting proficiency in two languages.
- NOT compensatory programs: Dual language programs educate first-class students who are bilingual and able to achieve at the highest levels.
- NOT superimposed on traditional school or district structures or on an infrastructure that was set up for an existing bilingual program: The structures need to be re-orchestrated, redesigned, and re-integrated in the classroom, in order to meet time constraints while doing equal justice to the two languages.
- NOT superimposed on existing mindsets of an "enrichment" versus a "remedial" model: Dual language bilingual programs promote enrichment, a position that needs to be clarified and addressed before and during program development and implementation.

Brain Compatible Teaching and Learning
Because dual language education calls for an enrichment model of education (Genesee & Lambert, 1983), brain compatible teaching principles can be used as a framework for helping ELLs attain desired educational goals.

> Brain compatible teaching and learning is a comprehensive approach to learning based on how the brain learns best. Since the human brain is unique, there is no "one best" way to do it. What you'll want to know are the principles of how the brain works. When your work is true to the principles, a brain compatible approach is being used. (Jensen, 1998, p. 37)

Brain compatible teaching principles and second language acquisition and learning are two processes that can greatly complement each other. In dual-language classrooms where language acquisition and language learning are critical, brain compatible teaching principles greatly enhance the ability of students to be involved in an enriched learning environment. The enriched language environment of dual language classrooms further enhances the opportunities for second language learners to develop their cognitive and linguistic skills to a high level of proficiency (Cloud, Genesee, & Hamayan, 2000).

Brain compatible principles that can be implemented in the classroom include:

- Creating a positive, welcoming learning environment with the absence of any form of threat.
- Presenting meaningful academic content geared toward the students' level of language development.
- Providing students with the ability to make choices through differentiated instruction.
- Allowing adequate time for students to participate in meaningful activities.
- Building an enriched learning environment infused with many opportunities for music and movement activities.
- Facilitating collaboration implemented through many opportunities for cooperative, structured learning through the use of multiple intelligences activities.
- Maintaining constant monitoring, assessment, and feedback of linguistic and academic development.

Connecting Second Language Acquisition with Brain Compatible Principles

Dhority & Jensen (1998) conclude that risk taking is a critical ingredient to the process of second language learning. Classrooms or social conditions that don't feel safe are not conducive to taking risks. The term "affective filter" in second language acquisition theory involves the internal language processing system that subconsciously screens incoming language based on what psychologists call "affect," which corresponds to the ELL's motives, needs, attitudes, and emotional state. This filter appears to be the first main

hurdle that incoming language must encounter and overcome before it is processed any further (Dulay, Burt & Krashen, 1987). Brain compatible teaching similarly suggests that "a relaxed alertness creates an optimal emotional climate for learning." (Caine, Caine, McClintic, & Klimek, 2005, p. 4) The affective filter concept and the component of brain compatible teaching that calls for a positive classroom climate complement each other. Lowering the affective filter enhances second language acquisition. Dual language classrooms, which promote respect and appreciation of a child's first language and culture, create an optimal setting for academic and linguistic success in school.

> Research suggests that emotions are intertwined with cognition; and that emotions, in fact drive attention, memory, and meaning. Emotions, if orchestrated sensitively, can influence a lifelong love of learning, or make us want to leave a class and never come back. (Dhority & Jensen, 1998, p. 12)

Regarding protection from adverse consequences, Jensen (1998) further states, "There is no evidence that threats are an effective way to meet long term academic goals. Once threats are gone, we can go to work on enrichment processes" (p. 30). Safety from threat is a major component of brain compatible teaching principles

In a dual language program that implements brain compatible teaching principles, especially with attention to the management of affect, opportunities may be provided for the enhancement of language development and growth. Gopnick, Meltzoff, & Kuhl (1999) found that social relationships that emphasize belonging, being recognized, being listened to, and being noticed contribute to creating a sense of relaxed alertness. Language beliefs, state of mind, and access to higher-order learning are all influenced by the way students relate to one other and to the teacher. Schools cannot afford to ignore the impact of relationships and community on learning both in and out of school. Teachers in dual language classrooms that are concerned with the affective domain of learning and the affective filter of second language acquisition should strive to create a positive learning environment for all children and especially ELLs.

A second element of the cognitive process behind second language acquisition involves the organizer, part of Chomsky's language acquisition device in the brain. The organizer is responsible for the learner's gradual organization of new language (Dulay, Burt & Krashen, 1987). The organizer takes in information that has come through the affective filter and ties new learning to previous knowledge and experience. The cognitive processes of a ELL's mind work both subconsciously and consciously to organize language into a new system. Brain compatible teaching stresses that "organized and

well-orchestrated in-depth learning experiences create optimal opportunities for learning" (Caine, Caine, McClintic, & Klimek, 2005, p. 5). Well-developed dual language programs provide in-depth learning experiences that give students "equal access to academic programs and activities and equal opportunity for academic achievement and bilingualism" (Calderon & Minaya-Rowe, 2003, p. 12). In dual language classrooms, teachers "demonstrate and model, use manipulatives and realia consistently, use visuals and graphic aids, involve the students in 'hands-on' learning, use film, video, or multimedia presentations, and use role-play to ensure student-centered instruction" (Cloud, Genesee, & Hamayan, 2000, pp. 125-126). The use of these strategies helps a student develop his or her semantic memory, episodic memory, and emotional memory, which are all part of brain compatible classrooms (Sousa, 2006). The use of these brain compatible strategies contributes to ELLs' abilities to develop language in a systematic manner and helps them avoid common errors as they go through the different stages of language development:

> The search for meaning occurs through patterning. All human beings are driven by a need to identify, name, and organize the configuration of elements or patterns that make up their known world. Patterning refers to the meaning organization and categorization of information. All decision making is based on the patterns that a person perceives and the choices that are made about where to focus. The brain is designed to perceive and generate patterns and resists having meaningless patterns imposed on it. Education is about increasing the patterns students can use, recognize, and communicate. (Caine, Caine, McClintic, & Klimek, 2005, p. 149)

Through activities and strategies that help ELLs transfer the language patterns of their first language into the second language, teachers can ensure that ELLs are not cognitively delayed in learning the curriculum while mastering the second language. The National Literacy Panel for Language Minority Children and Youth recently stated:

> In summary, there is no indication that bilingual instruction impedes academic achievement in either the native language or English, whether for language-minority students, students receiving heritage language instruction, or those enrolled in French immersion programs. Where differences were observed, on average they favored the students in a bilingual program. The meta-analytic results clearly suggest a positive effect for bilingual instruction that is moderate in size. (Francis, Lesaux & August, 2006, p. 397)

In further support for the development of the organizer is found in the brain/mind learning principle, which holds that learning is developmental. Caine, Caine, McClintic & Klimek (2005) state:

> Although all human beings have in common a somewhat predictable process of development, rarely do human beings develop in precisely the same way or at exactly the same rate. All learning builds on previous learning, and we now know that this process is accompanied by changes in the physiology as it interacts with experience. Performance, not age or grade level, provides the best evidence for future learning. (p. 163)

Developing language through special attention to the language developmental level of ELLs can be effectively implemented in a dual language program. Optimally, students engage in activities that help them to receive comprehensible input while being challenged to make further progress.

The monitor, also a part of Chomsky's language acquisition device, is that part of the second language learner's internal system that consciously processes information (Dulay, Burt & Krashen, 1982). Dual language classrooms that are brain compatible provide many opportunities for second language students to develop their listening, speaking, reading, and writing skills in ways that allow them to monitor their language development. Dual language classrooms that are brain compatible provide opportunities for "active processing of learning experiences creating optimal ways to consolidate learning" (Caine, Caine, McClintic & Klimek, 2005, p. 6). This active student involvement with language acquisition in dual language classrooms allows the students to accelerate their language development. The classroom environment as well as the overall school climate is one of enrichment, rather than remediation.

> The literature reveals that creating an equitable dual language school environment is a complex and very demanding process. However, when schools or districts implement two-way bilingual programs, they can accomplish the following: They can ensure equity in education as English language learners have an equal chance to achieve their full potential; they promote equal access to programs and activities, and they practice equal opportunity for academic achievement. (Calderon & Mina-Rowe, 2003, p.12)

Effective dual language teachers plan instruction that will not only actively engage students through hands-on instruction, but will also allow

students to practice using language so that their monitors can be activated. Interactive instruction leads students to construct knowledge for themselves and to more fully understand lesson concepts because they experience them firsthand. Working in cooperative groups and having peer support and interaction allows non-native speakers to communicate with native speakers of the language (Cloud, Genesee, Hamayan, 2000). Furthermore, when students' learning styles and interests are activated, they are more apt to engage in interactions whereby they are able to self-correct and monitor their own linguistic development.

Brain Compatible Principles and Schlechty's Framework

Also known as *Working on the Work,* the premise of Dr. Phillip Schlechty's work is to provide educators with a framework for designing quality lessons that are effective, meaningful, and provide for the needs of all student populations (Schlechty, 2002). Embedded within this framework are elements of the brain-based principles. For example, collaboration is a brain compatible principle that is comparable with the framework developed by Schlechty. Cooperative learning strategies are among the most important components of second language learning. They provide opportunities for students to practice using language in safe contexts free from adverse consequences. Cooperative learning is essential to the development and use of communicative skills and social interaction skills. Combined, they help produce higher academic gains (Sharan & Sharan, 1994; 1997; Calderon & Minaya-Rowe, 2003).

Another brain compatible principle that is compatible with Schletchy's framework is the practice of giving the students choices in their learning. Kaufeldt (1999) notes that when we give students choices and opportunities to control the content and process of their learning, their motivation increases, and when they are highly motivated, optimal learning can occur. She also states that "current research suggests that the brain is capable of making its own rewards. By producing and releasing natural opiates and endorphins, the brain can create a natural high. Teachers can provide ample feedback and acknowledgment, and celebrate learning" (p. 188).

Table 1 provides a side-by-side comparison of the components of Schlechty's framework and the principles of brain compatible teaching.

Table 1
Side-by-Side Comparison of Schlechty's Framework and Brain Compatible Principles

Schlechty's Framework Design Qualities	Brain Compatible Principles
Protection from Adverse Consequences	Safe from Threat
Content & Substance Organization of Knowledge Clear & Compelling Products	Meaningful Content
Choice	Choice
	Adequate Time
Novelty & Variety Product Focus Authenticity	Enriched Environment
Affiliation Levels of Engagement (authentic, strategic compliance, retreatism, rebellionism)	Collaboration
Affirmation	Immediate Feedback
Student Achievement	Mastery

The principles of both Schlechty's framework and brain compatible learning are grounded in research and have been proven to assist all student populations. Freeman & Freeman (2005) state that "Thematic teaching enhances the effective use of preview/ view/ review in the dual language classroom. The process of preview, view, and review allows teachers to preview content in the students' first language before they study the content in the second language, thus making the learning comprehensible and meaningful." Furthermore, Cloud, Genesee, & Hamayan note that

> The best environment for developing oral proficiency in a second language is one in which significant portions of the new language are learned incidentally and in the context of doing something that is inherently meaningful. The best way to create such an environment is to center instruction around interesting and engaging activities, integrating the use of the target language into that activity. When the learner's attention is focused on the activity, language is internalized naturally." (p. 56)

Blanche Moore Early Childhood Development Center
Throughout the United States, many dual language programs have been introduced to meet the needs of ELLs. One program that has specifically

implemented brain compatible strategies to increase second language achievement is at the Blanche Moore Early Childhood Center (ECDC), located on the campus of Texas A&M University-Corpus Christi. The school is a Spanish/English dual language school serving children between the levels of 3 year old pre-kindergarten students to fifth grade. The school has been in existence for 10 years. Although the school is on the university campus, the students are from the Corpus Christi Independent School District (CCISD). The school is a partnership between the public school district and the university. The school has been recognized for its positive test scores on Texas Assessment of Knowledge and Skills (TAKS), the state accountability exam, for several years. It has earned state accreditation ratings of Recognized and Exemplary for several years.

The ECDC has worked to implement brain compatible principles and prides itself in providing all students with a rich, rigorous instructional program that utilizes brain-friendly approaches to learning. It is one of thirteen schools within CCISD that is considered a "pioneer" school in the implementation of the Schlechty framework.

As a dual-language school, the ECDC enrolls 50% monolingual Spanish speakers each school year, thus serving a large population of ELLs. At the ECDC, educators design their lessons to meet the needs of each learner and include the qualities listed above. The school uses a Balanced Literacy approach to literacy development in two languages. Incorporation of the arts and social studies in literacy creates a culturally rich environment. Schlechty's framework and brain compatible principles, are also integrated through science and math via technology such as the Early Discovery Lab, interactive smart boards, Elmos, wireless laptops, and a fully equipped PC Lab. In 2008, the school unveiled the first of three outdoor classrooms to enhance instruction in science with an Experimental Garden. Since thematic interdisciplinary instruction is part of the curriculum design, the garden can be used to enhance all core subject areas. When ELLs are given these "hands-on" experiences, their use of language can be developed to a high level of proficiency. Using these approaches, the brain is continuously engaged in activities that help students to connect learning to real life, thus increasing the opportunities for language development through oral and written venues. Standardized tests show ELLs average scale scores are increasing as teachers experience success in applying brain compatible principles to their lessons. Educators at the ECDC ask themselves—Do I:

- Design lessons with the customer in mind?
- Ensure "active" not "passive" instruction?
- Provide hands-on, minds-on instruction (hands-on does not necessarily mean the child is building critical thinking skills)?

- Allow students to filter information (explain, interpret, apply, provide perspective, empathize, and build self-knowledge)?
- Create engaging lessons that keep students from flight or fight?
- Believe in my students abilities?

Classroom Application of Brain Compatible Principles and Second Language Acquisition

In this section, a second/third grade Spanish language teacher and a kindergarten bilingual teacher share how they design, plan, and implement lessons that feature the qualities and elements of both Schlechty's Framework and brain compatible principles.

The ECDC uses a team teaching approach in second and third grades to implement the dual language program with brain compatible principles. One teacher instructs using the Spanish language the entire day and another teacher teaches in English. Students switch classrooms at the prescribed time to ensure that the students are receiving instruction in both English and Spanish as delineated in a 50/50 program model. The teacher responsible for second language acquisition in Spanish has implemented brain compatible teaching principles through the use of various teaching strategies. In her seven years at the ECDC, she has been responsible for helping children to develop not only their English language but also another language, to a high level of proficiency. This has been accomplished through the school's use of global thematic units, which are used to integrate state standards and the school district's scope and sequence requirements. The Spanish instruction is delivered in a balanced literacy setting. Through the use of this model, students are provided with a safe learning environment in which to develop language. In return, students become confident and active learners.

The day begins with whole-group activities that incorporate opportunities for oral language development through calendar activities. These activities include days of the week, months of the year, seasons, weather and temperature. Students learn to create tally tables, which then are also graphed. The number of days that have been spent in school are also counted, and the students are actively involved in solving addition and subtraction problems using the data. Students begin by choral reading the answers. Eventually, they become active participants by conducting the calendar activities themselves, and the teacher's role shifts from a director to simply a facilitator their learning.

Another component of whole-group activities incorporates Spanish language arts activities through the use of songs and rhymes. Through these activities students are exposed to phonics and decoding skills. They are also introduced to vocabulary, and are able to apply context clues to help them understand the song. With vocabulary, students will act out or role-play the word, draw or illustrate it, and then use the word in context. In word-study

activities, students will apply what they have learned by completing a story board. They will draw a picture for each sentence in the story board. The use of cognates has proven very beneficial. Students see the similarities in the spelling and make connections to what they already know in their first language. These experiences provide patterns for language and concept transfer which makes the use of these strategies brain compatible.

At any given time, there are multiple levels of language development being taught. Therefore, to target specific linguistic needs, the teacher incorporates a guided reading component to help students in the needed areas. The students and the teacher preview the book, choose vocabulary that needs to be addressed, and read to find areas of concern or difficulty in the reading. Having students draw what they think the vocabulary word means is an effective way to see how they are thinking. Since they may not have the oral language to express in words what they want to say, drawing helps them to scaffold their ideas. Once students have learned new vocabulary, and demonstrate comprehension of their books, read with fluency and prosody, they are given an assignment to apply what they have learned. This may include completing a comprehension activity where they have to identify the story elements: setting, characters, problem, solution and favorite part. They may have to extend this by providing another solution or ending to the book. They may have to create their own book, for example, if the students read a pattern book, they would create their own, coming up with their own setting, characters, problems and solutions. Providing students with choices is another brain compatible principle that helps students to become independent learners and develop their confidence as ELLs.

In writing activities, the teacher and students together create a web. The teacher models and "thinks aloud" so students understand what the expectation is going to be. In the beginning students begin with simple sentence starters that target one idea. As the year progresses, students are given two, and finally three ideas. The teacher color codes each idea so they know where it is going to be used.

To help students with content areas such as science, math and social studies, various aids are provided, such as visuals, trade books, demonstrations and/or investigations. This will help students to hear key vocabulary being used in context. After completing several activities, students will apply what they have learned by producing a product. Students are given a rubric and time line of when it should be completed. Students are given choice in regards to how they will construct this product based on previous activities done throughout the year. The project can range from a poster to a flip book, mobile, or using technology (i.e. creating a Power Point presentation). The brain compatible strategies provide novelty, hands-on experiences, and project based learning that are essential to the linguistic development of ELLs. Through consistent student engagement with the

curriculum to be mastered, students are able to make significant progress in their linguistic and academic development.

In the kindergarten classroom, a brain compatible strategy that has also proven successful in helping students develop language is thematic instruction. Providing the students with basically the same knowledge base throughout different subject areas continuously during the day will deepen their understanding of the knowledge gained and encourage the development of higher order thinking skills. Thomas & Collier (1997) found that classes in schools that are highly interactive, and which emphasize student problem-solving and discovery-learning through thematic experiences across the curriculum are likely to provide the kind of social setting for natural language acquisition to take place simultaneously with academic and cognitive development.

Interweaving the language arts and fine arts into other content areas helps to build and strengthen vocabulary skills. New vocabulary brings with it new concepts and understanding of subject matter. Since books in the content areas are not leveled, publishers tend to write them at a higher reading level for the targeted age group, thus making them unfriendly to those at the middle and lower levels. Thus, ELLs are at a higher disadvantage than their school age peers because ELLs' oral language proficiency and English language development is generally one to two years below their monolingual peers. Reinforcing the safety net provided to ELLs with rich language experiences, music, art, and drama helps to deepen the learning experiences by making them more meaningful, attainable, and brain compatible.

Thematic units provide a wonderful learning cycle because they reinforce the students' learning base with new learning that is strong and cohesive while at the same time lessening the anxiety level, which in turn promotes interactive learning. While the student is deeply involved in learning, his or her first and second languages are being further developed. Howard, Sugarman, Christian, Lindholm-Leary, & Rogers (2007) found that "more successful schools and programs have a curriculum that is meaningful, academically challenging and incorporates high order thinking skills; and is thematically integrated." (p. 8) Thematic instruction has a particular utility in sheltered instruction because students encounter familiar language across several subjects (Lessow-Hurly, 2005, p. 93). Jensen (1998) further elaborates,

> There's also a great deal of value in the interdisciplinary and cross disciplinary models. They create much more relevance and context, and more importantly, help students understand the connections in learning. In the classroom, cross disciplinary models provide students the ability to see ideas and concepts in relation to others as

> well as how individual facts become meaningful in a larger field of
> information. This integration of curriculum helps students see how
> economics relates to geography, how mathematics links to art and
> music, and how ecology links to science and politics. Through
> discussion, arts, or visual thinking, students can make important,
> meaningful patterns. (p. 96)

The ability to make connections and have an awareness of the context by
which academic concepts and language are linked is of utmost importance to
ELLs. In a dual language classroom, instruction based on themes greatly
benefits ELLs because they are able to hear the instruction in repetitive
patterns of language and make connections with vocabulary from the two
languages. When thematic, global units of instruction are used in a dual
language setting, peer teaching and cross-age tutoring can also be
beneficially incorporated as brain compatible strategies (Cloud, Genesee,
Hamayan).

In dual language classrooms, a basic principle of multileveled language
development instruction is to create groups which participate in thematic
instruction with task divergence. Language majority and minority students
work on the same topic or theme, yet the class work and homework is
tailored to meet their individual linguistic developmental needs. Teachers
create several types of assignments, varying the length, depth, complexity,
and the amount of independence expected of the students. Once the activities
are planned, teachers allow students to choose the activity that they feel most
confident in completing (Cloud, Genesee, Hamayan). The ability of students
to choose assignments by which they will demonstrate mastery of the
content through project based learning is another component of brain
compatible teaching that is being implemented at the ECDC.

Conclusion

Brain compatible teaching and learning is of great benefit to ELLs
because of the varied principles that stimulate language growth and
academic achievement. Many ELLs have high cognitive ability, however,
they are not yet able to express themselves orally or may not have developed
the literacy skills needed at a particular grade level. Second language
acquisition and literacy development take time to develop in any language.
Jim Cummins (1981) frequently reminds teachers and administrators that
oral development is going to take two to three years, but the development of
academic language to be successful in schools takes five to seven years in
optimal conditions. Yet, many educators insist on hurrying the acquisition of
English in one or two years. Brain compatible teaching and learning
principles and second language acquisition will work "hand in hand" to
increase the process of second language acquisition but as educators we

must be willing to provide the quality instruction needed to accomplish the goal.

References

Caine, R., Caine, G., McClintic, C., & Klimek, K. (2005). *12 Brain/mind learning principles in action.* Thousand Oaks, CA: Corwin Press.

Calderon, M., & Minaya-Rowe, L. (2003). *Designing and implementing two-way bilingual programs: A step by step guide for administrators, teachers, and parents.* Thousand Oaks, CA: Corwin Press.

Cloud, N., Genesee, F., & Hamayan, E. (2000). *Dual language instruction: A handbook for enriched education.* Boston, MA: Heinle & Heinle Publishers.

Crawford, J., & Krashen, S. (2007). *English learners in American classrooms: 101 questions-101 answers*. New York, NY: Scholastic.

Cummins, J. (1981). The role of primary language development in promoting educational success for language minority students. In California State Department of Education (ed.), *Schooling and language minority students. A theoretical framework.* Los Angeles, CA: California State Department of Education.

Dhority, L., & Jensen, E. (1998). *Joyful fluency*: *Brain compatible second language acquisition.* San Diego, CA: The Brain Store.

Dulay, H., Burt, M., & Krashen, S. (1987). *Language two*. New York: Oxford University Press.

Francis, D., Lesaux, N., & August, D. (2006). Language of instruction. In D. August, & T. Shanahanan (Eds.), *Developing literacy in second-language learners: Report of the national literacy panel on language minority children and youth* (pp. 365-414). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Freeman, Y., Freeman, D., & Mercuri, S. (2005). *Dual language essential for teachers and administrators*. Portsmouth, NH: Heinemann.

Genesee, F., & Lambert, W. E. (1983). Trilingual Education for Majority Language Children. *Child Development*, *54* 105-114.

Gopnick, A., Meltzoff, A. N., & Kuhl P. K. (1999) *The Scientist in the Crib: Minds, Brains, and How Children Learn.* Farfield, NJ: William Morrow & Col., Inc.

Howard, E.R., Sugarman, J., Christian, D., Lindholm-Leary, K.J., & Rogers, D. (2007). *Guiding principles for dual language education.* Washington, DC: Center for Applied Linguistics.

Jensen, E. (1998). *Introduction to Brain Compatible Learning*. San Diego, CA: The Brain Store.

Kaufeldt, M. (1999). *Begin with the brain: Orchestrating the learner-centered classroom.* Tucson, AZ: Zephyr Press.

Kriteman, R. (2006). When two are better than one. *Language Magazine 5*(5), 35-37.

Lessow-Hurley, J. (2005). *The foundations of dual language instruction.* Boston, MA: Pearson.

Schlechty. P. C. (2002). Working on the Work: An Action Plan for Teachers, Principals, and Superintendents. San Francisco, CA: Jossey-Bass

Sharan, Y., & Sharan, S. (1994). Group investigation in the cooperative classroom. In S. Sharan (Ed.), *Handbook of cooperative learning methods* (pp. 97-114) Westport, CT: Greenwood.

Sharan, S., & Sharan, Y. (1997). Cooperative learning in small groups: Recent methods and effects on achievement, attitudes, and ethnic relations. *Review of Educational Research*, 50 (2), 241-271.

Sousa, D. (2006). *How the brain learns* (3rd ed.). Thousand Oaks, CA: Corwin Press.

Thomas, W. & Collier, V. (1997). *School effectiveness for language minority students* (NCBE Resource Collection Series, Monograph No. 9) Washington, DC: George Washington University, National Clearinghouse for Bilingual Education.

Chapter 5

Nonfiction: The Pathway to Motivation and Comprehension

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Abstract

A 10-week action research project was conducted with 19 kindergarten students in a South Texas charter school. The students were assigned to daily 30-minute pullout sessions for help with reading. The sessions integrated the use of nonfiction and seven different graphic organizers. Results indicated that graphic organizers could be adapted and modified for young children. Student performance on the listening component of the Texas Primary Reading Inventory showed gains. Student engagement, motivation and vocabulary increased.

Nonfiction: The Pathway to Motivation and Comprehension

Anyone who teaches primary grades will attest to young children's fascination with the real world. Children are intrigued by nature and animals. They have a strong desire to learn more about dogs, cats, sharks, ladybugs, rain, snow, the ocean, the stars, and more. It is only logical, then, that their reading materials should reflect their curiosity. The information they want to know about dogs, sharks, the stars, etc., can be found in the pages of nonfiction books. Today, there is a growing collection of good nonfiction for elementary readers. It is time to show young readers how to access and understand the texts that will open up the world to them.

This article reports on an action research project that was prompted by the authors' interest in using nonfiction texts and graphic organizers with kindergarten and first grade children. The major author, a reading intervention teacher, has changed the focus of her teaching from fiction to nonfiction texts with science and social studies themes. She believed that if she introduced a wide variety of nonfiction texts to her kindergarten and first grade students, they would become so accustomed to reading them that they would have no "fourth grade slump" (Chall, Jacob & Baldwin, 1990). She wanted to encourage students to explore their interests through reading books instead of relying only on television's informational channels. Her interest in nonfiction led to this action-based research with her students.

The concerns addressed in this study integrate two instructional issues: the use of nonfiction with young children and the use of graphic organizers with content material. While both areas have been addressed in the research literature, the emphasis on nonfiction reading appears to be a more recent and growing field. Interest in graphic organizers is generally traced back to David Ausubel's work (1960); however, the variety and use of graphic organizers has expanded widely over the past 50 years.

Problem

As a reading interventionist, the major author of this study wanted to increase the use of nonfiction in her classes in a meaningful way. She also wanted to investigate the practice of using graphic organizers to help students structure and remember information. The purpose of the study was to explore the use of different types of graphic organizers with kindergarten students to see if they would provide appropriate instructional experiences with young students. The action research questions were:

1. Can graphic organizers be used with kindergarten students?
2. How can graphic organizers be adapted so they are appropriate for kindergarten students?
3. Will the use of graphic organizers enhance students' understanding of nonfiction texts read aloud to them?

Related Literature

In past years, fiction texts have dominated in elementary classrooms. Many educators have believed that students prefer fiction and stories; as a result, many classroom libraries contain more fiction books than nonfiction books (Garrett, Schaum, Zunker & Crowder, 2008; Duke, 2000; Ogle, 2003; Livingston, Kurkjian, Young & Pringle, 2004). A study by Benson (2002) found that children in the early grades are immersed in fiction during 80% to 90% of the day. Yopp & Yopp (2000) found that only 14% of the texts teachers read aloud in a day were informational.

Recently, however, nonfiction texts have increasingly taken center stage with researchers and educators. Nell Duke's study of 20 first grade classrooms opened the eyes of many educators when she demonstrated that first-grade students spent an average of only 3.6 minutes each day engaging with informational texts (2000). She also found that a mean of 2.6% of texts on classroom walls and 9.8% of materials in classroom libraries were informational texts. The same study found that children in low SES schools spent even less time engaged with information texts: 1.4 minutes a day. They had even fewer informational texts in their classroom libraries. A study conducted by one of the authors (Garrett, et al., 2008) inventoried first-, second-, third-, and fourth-grade classroom libraries in three elementary

schools in the South Texas area. Fiction texts outnumbered nonfiction texts in all classrooms but one. The ratio of fiction to nonfiction texts ranged from 1:1 to 11:1. The number of nonfiction books available per student ranged from 1.1 to 12.2. Only one of 12 classrooms had slightly more nonfiction texts than fiction.

Researchers and teachers are learning that elementary students enjoy, and often prefer, nonfiction. Palincsar & Duke (2004) report that some children prefer reading, writing, and listening to informational texts and that they benefit from interacting with nonfiction texts at an early age. Palmer & Stewart (2003) found that students liked informational texts because of the knowledge they could gain by viewing photographs and illustrations. Other studies (Harkrader & Moore, 1997; Mohr, 2003; Owens, 2003; Livingston, Kurkjian, Young & Pringle, 2004; Stien & Beed, 2004) have also documented children's interest in nonfiction.

A strong case can be made for the importance of using nonfiction with young children. If students do not experience nonfiction and expository text in the early years, they will not develop the schema necessary to comprehend content-related materials as they move through subsequent grades. Chall, Jacob & Baldwin (1990) have attributed the "fourth grade slump" in overall literacy achievement in large part to problems with informational literacy. Venesky (1982) emphasizes the importance of earlier exposure to nonfiction in the primary grades, stating that by sixth grade, more than 75 percent of students' reading demands in school are with non-fictional materials. National and state standards require students to comprehend a variety of texts, including nonfiction. Many state assessments include nonfiction as a major component of their reading tests.

Graphic organizers are a natural fit with nonfiction texts. They provide a visual representation of detailed information such as that found in nonfiction, especially in content-related texts. A premiere name in research on graphic organizers is that of David Ausubel. Ausubel's work focuses on "advance" organizers, that is, information presented in a visual diagram before content was introduced. Ausubel (1970) states that the advance organizer helps provide a cognitive structure for learners, a structure that would make it easier for them to construct meaning as new material was presented. Some writers apply the term "graphic organizer" only to Ausubel's tree diagram of material presented before a lesson (Ausubel, 1970; Moore & Readence, 1984), while other research examines the use of organizers both before and after lessons. This research reflects a broader definition of the term, "graphic organizer," including examples such as semantic maps, cognitive maps, Venn diagrams and framed outlines (Ae-Kwa, et al. 2004; Banikowski & Mehring, 1991; Clawson & Barnes, 1972). A review of major content reading textbooks tends toward use of the broader

definition (Duke & Bennett-Armistead, 2003; Richardson, Morgan & Fleener, 2006; Robb, 2003; Vacca & Vacca, 2008).

Many research studies support the effectiveness of using graphic organizers in the classroom. Ae-Kwa et al. (2004) examines 21 intervention and comparison studies of the use of graphic organizers with learning disabled students. The studies involved use of semantic organizers, framed outlines, and cognitive maps with and without mnemonics. The findings of their meta-analysis support the use of graphic organizers to promote students' reading comprehension across grade levels. Banikowski and Mehring (1991) examine a wide range of practices that enhance students' memories, and they also find that graphic organizers help readers construct meaning from reading and listening. Braselton & Decker (1994) find that graphic organizers help students organize information and visualize the process of solving math word problems. The use of graphic organizers has also been recommended by the National Reading Panel (2000).

Methodology

The setting for the study was a charter school of 300 students located in a small southwest Texas community of about 15,000 residents. The charter school serves students from kindergarten through sixth grade. More than 70% of the student population receives free and reduced lunches. Many students are children of the local prison population. Approximately 20% of the students have been diagnosed as special needs by surrounding schools, leading their parents to enroll them in the charter school because of the positive environment. Many of these children are considered at-risk students and are expected to face academic challenges. The charter school has been designated "Recognized" by the Texas Education Agency in four out of the past five years, and the Texas Business Coalition has ranked the school in the top five percent of all schools in Texas.

The primary investigator is the reading interventionist for kindergarten and first-grade students at the school. Students were assigned to the pullout program by a committee of their classroom teachers, the reading coach, and the reading interventionist based on students' performance on the Texas Primary Reading Inventory (TPRI) at the beginning of the year. The TPRI is given at the beginning, middle, and end of the school year. Students who performed at the bottom of a descending rank order of students were assigned to receive extra help in the form of a pullout program with the reading interventionist.

The primary researcher met with five groups per day, five days a week. The meetings varied only if an event at the school interrupted the regular schedule. The study was conducted over a 10-week period. During the course of the first semester, one kindergarten student moved to another school and is not included in the statistics for this study. One new

kindergarten student moved into the school and into the pullout program but is also not included in the statistics for this study. Nineteen kindergarten students remained in the pullout program for the entire semester. These students served as the research population for the study. There were four to five students per group.

Student performance at midyear on the listening comprehension subtest of the TPRI provided the measurement of students' improvement. Listening comprehension is the most important category because it is a predictor of how students might perform in comprehension during subsequent years in their academic careers. One group of students was initially designated "low functioning" based on their low scores on the TPRI and teacher observations. These students had little or no preschool experience and needed extra time and attention to become familiar with the school environment and appropriate school behavior.

The TPRI at the beginning of the year indicated that number of kindergarten students in the "still developing" category was 33% higher than the previous year. This resulted in more students meeting criteria for intervention by classroom and interventionist teachers. The students were served for fifteen minutes by the interventionist in small groups inside the classroom each day and in a thirty-minute pullout session in the interventionist's room each day. The interventionist used the fifteen-minute regular classroom venue to introduce a text that would be read again during the pullout session. Texts were often ABC books that covered information about animals, insects, and other science topics. Some short texts pertaining to social studies topics such as families, famous people, jobs, and communities were also used. The ABC format proved valuable because each letter was an isolated topic and one or two topics per day could be explored with time allowed for using a graphic organizer to check for understanding.

The school is a "Reading First" campus with a charter that stipulates the use of specific materials in teaching reading. Strategies selected for the project were identified from college reading textbooks, the Florida Center for Reading Research (FCRR) (2006), and the Scott Foresman Reading series (2000). Students' developmental levels, life experiences and level of school vocabulary were considered in the selection and application of the graphic organizers. All the strategies used were modified in some manner from their original form to ensure their appropriateness with kindergarten students. In some cases, only a portion of a graphic organizer strategy was used.

The project involved the use of seven different graphic organizers. The graphic organizer strategies were selected based on their appropriateness for the texts used in the study. The graphic organizers selected for the study were "Incomplete Paragraph Frame," "Prediction Pairs," "Anticipation Guide," "Classic Classifying, Expanding Sentences," "Semantic Feature

Analysis," and the "Frayer Model/Four Square Vocabulary Map." The nonfiction titles, graphic organizers and group meeting periods for each book are shown in Table 1.

Table 1
Nonfiction Books and Graphic Organizers Used with Instructional Groups

Title	Graphic organizer	Groups	Number of instructional meetings
The Bravest Dog Ever: The True Story of Balto	Incomplete Paragraph Frame	Low-functioning group	1*
	Prediction Pairs	All groups	2
Amazing Dolphins!	Anticipation Guide	All groups	2
Yucky Reptiles Alphabet Book	Classic Classifying	All groups	2
	Expanding Sentences		
Amazing Sharks!	Semantic Feature Analysis	All groups	3
Bugs Are Insects	Frayer Model	All groups	4

Note: *The Incomplete Paragraph Frame was used with the low-functioning group to orient students to graphic organizers. After that initial instruction, they received the same graphic organizer instruction as the other groups.

Results

Nonfiction texts were read aloud to the students. Initially, students had difficulty remembering information from the text, which required the rereading of portions of texts or whole texts. Students learned that listening to oral reading wasn't just for fun — they would be held responsible for the information that they heard being read to them. The graphic organizers proved to be valuable tools in helping students implicitly learn the one-to-one correspondence of each word they said to each word that was written on the organizer. They slowed their speech to allow for the interventionist's slow writing of their words. They recognized that when the interventionist

moved her hand over to the space between words, it was their cue to say the next word they wanted written down.

Incomplete Paragraph Frame

The book read to the students was *The Bravest Dog Ever: The True Story of Balto* (Standiford, 1989). The object of the Incomplete Paragraph Frame (See Figure 1) is to have a one-sentence summary of the problem (the children were sick), how the characters attempted to solve the problem (they used dog sleds to get the medicine to the sick children), and what happens in the end (Balto and the medicine "save the world") (Frank, Grossi & Stanfield, 2006). The students were excited about the story and what it meant to have medicine from the doctor. The Incomplete Paragraph Frame was selected for the low-functioning group—the group that had limited or no preschool experience and had scored lowest on the Texas Primary Reading Inventory. They possessed little book knowledge and very limited vocabularies. The interventionist decided to keep the interaction extremely simple with these students, so the Incomplete Paragraph Frame was determined to be the best choice (Frank Grossi & Stanfield, 2006). The activities provided them with the experience they needed in order to interact with text. As they tried to work out the information for filling in the blanks, it became clear that they would not have been able to handle a more complicated graphic organizer.

Figure 1
Incomplete Paragraph Frame

Incomplete Paragraph Frame

Problem/Solution Text Structure

General Frame: The author is showing the development of a problem and the resulting solution(s).

[Type a quote from the document or the summary of an interesting point. You can position the text box anywhere in the document. Use the Text Box Tools tab to change the formatting of the pull quote text box.]

Key Words:
therefore
because
since
as a result
this led to
thus

Summary Pattern:

_____

_____

_____

_____

Prediction Pairs

Prediction Pairs is a simple, two-column graphic organizer (See Figure 2). The first column states, "What Will Happen Next?" and the second column states, "Reasons from the Reading" (Frank, Grossi & Stanfield, 2006). The Prediction Pairs organizer was used to help students learn how to

use their reading to make predictions about what they expected to find later in the text; students were asked to justify their predictions based on the text they had just read. *The Bravest Dog Ever: The True Story of Balto* (Standiford, 1989) was used again. Predictions were made after each page was completed in the book. Students discussed their predictions and justifications throughout the book. At first, students were shy about answering the questions. They were told: "I will be asking you the question, 'What will happen next?' You need to think about it… you need to use your mind to be creative and give me any answer, even if it is a pretend answer, a ridiculously funny answer, a great big guess. You need to use your mind and what you know about how books and stories work to tell you information." Students were assured that everyone would be guessing and that there was no right answer. In spite of these assurances, students were slow to respond initially. Many of these students were shy and quiet in their regular classrooms as well, so their behavior was not unexpected.

Figure 2
Prediction Pairs organizer

Prediction Pairs

What Will Happen Next?	Reasons from Reading
What Will Happen Next?	Reasons from Reading
What Will Happen Next?	Reasons from Reading
What Will Happen Next?	Reasons from Reading

The compelling text of *The Bravest Dog Ever: The True Story of Balto* (Standiford, 1989) eventually did engage students' interest. Balto was a real dog who helped save people during the 1925 diphtheria epidemic in Nome, Alaska despite sledding through a snowstorm. Students were interested and hopeful. They wanted the people to get well if Balto, his fellow sled dogs, and Gunnar, his master, could arrive in time with the medicine. When Balto and his crew did save the day, they were extremely happy. The students worked their way through the book by predicting what would happen, giving reasons for those predictions, and verifying what actually happened.

Anticipation Guide

The next graphic organizer to be used from the Frank, Grossi, and Standfield book (2006) was the Anticipation Guide, which is also called the "Anticipation Sort" by the FCRR. The Anticipation Guide was used to encourage students to make predictions for an entire book and then check for accuracy as the book was read to them. They learned that making mistakes in predictions is acceptable, but it is important to revise their thinking as they encounter new information that contradicts their predictions. The book used was *Amazing Dolphins!* (Thomson, 2006). The students participated in a picture walk in which they generated sentences stating their predictions about what each page would say about the dolphins (See Figure 3). As they saw that the interventionist wrote one word for each word that they spoke, they decreased their rate of speech and became particular about the words they used. Their apparent understanding of the one-to-one correspondence between spoken words and written words was not expected this early in the school year.

Figure 3
Anticipation Guide

Anticipation Guide

Directions: Put a mark under "likely" if you feel that the statement is true. Put a mark under "unlikely" if you feel that it has no truth. Be ready to explain your choices.

Before Reading		Statements about Text	After Reading	
Likely	Unlikely	1.	True	False
——	——	2.	——	——
——	——	3.	——	——
——	——	4.	——	——
——	——	5.	——	——
——	——	6.	——	——
——	——	7	——	——
——	——	8.	——	——
——	——	9.	——	——

After reading, correct your Anticipation Guide

Classic Classifying

The FCRR's activity called Classic Classifying is the same as the Semantic Map found in the Frank, Grossi & Stanfield book (2006). The Classic Classifying Activity was selected in order to help students learn to attend to details, and to group and categorize them meaningfully (see Figure 4). The Classic Classifying organizer was used with the *Yucky Reptiles Alphabet Book* (Pallotta, 1989). To simplify the activity, the students read about only one reptile per day. The name of the reptile was written in the centermost rectangle with the descending rectangles having the subtopics of:

1. What does it look like?
2. What does it eat?
3. Where does it live?
4. How does it move?

Details for each of these subtopics were entered into smaller rectangles with connecting lines. The interventionist used colored markers to make it easier for students to process visually. For example, the subtopic for the visual description of the Frilled Lizard was written in green, and the detailed list of descriptors was also written in green. Subsequent subtopics and corresponding details were color coordinated as well. This process helped students formulate the mental categorization for each subtopic. The next day, the class reviewed the information before moving on to the next lizard, the Gila monster. After the review, the interventionist handed students a picture of the lizard that had been downloaded from the Internet. One student was particularly happy because he had described this lizard to his mother, but she had not believed him. Now, he was armed with proof that he was right!

Figure 4
Classic Classifying

Name _____

V.031.SS   Semantic Map

K-1 Student Center Activities: Vocabulary   2005 The Florida Center for Reading Research (Revised July, 2007)

Expanding Sentences

Following the discussion with the Classic Classifying organizer, the students moved on to a writing activity called Expanding Sentences. In this activity three large blanks are at the top of a chart. Below that are four large blanks, and the next line has five large blanks. The object is to have students construct a simple sentence on the first three blanks. The first time, the

interventionist modeled a sentence and wrote a three-word sentence in the blanks: "The dog ran." Students were told that they had to think of a word that described or told something about the dog. This proved to be a challenge because they wanted to give the interventionist a whole sentence or even a paragraph about their own personal dogs. Finally, the class settled on a word that was a color word to describe the dog. The interventionist verbally repeated the sentence to them so they could be sure that they had all agreed on the word. The interventionist then said each word slowly as she wrote it on the chart. She pointed to each word as the whole group read the sentence together. The students seemed pleased because they had constructed the sentence and they could "read" the sentence.

Figure 5
Expanding Sentences

The		dog		ran.

The	brown		dog	ran.

The	brown		dog	ran
		fast.		

The		zebra		eats.

The	big		zebra	eats.

Semantic Feature Analysis
    Another graphic organizer day was spent with Semantic Feature Analysis (Frank, Grossi & Stanfield, 2006). The Semantic Feature Analysis organizer was used with students to compare the characteristics of different animals. Each child was given a physical picture of one of the animals on the chart. They used their pictures to determine which animals had scales, feathers, and skin. The book was *Amazing Sharks!* (Thomson, 2005), which is also from the same series as *Amazing Dolphins!* (Thomson, 2006). Students began the activity by using a capital Y or N to designate "yes" or "no" to questions about body parts relating to a list of animals. *Dog, cat, bird,* and *fish* were the animals. *Arms, legs, wings, fins, eyes, mouth, nose,*

and *ears* were the body parts (Figure 6). The work began with animals that they already knew.

Figure 6
Semantic Feature Analysis

Animal	Scales	Legs	Hair	Ears	Eyes	Tail	Gills
Shark							
Squid							
Redfish							
Whale							
Seal							
Shrimp							
Octopus							
Oyster							
Crab							
Turtle							
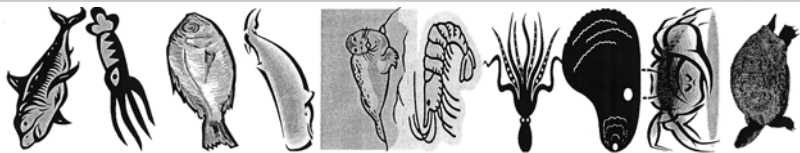
Animals

The class then read the book about the sharks and compared them to other animals. Dolphins and sharks were already on the chart. Each student chose a new animal to be written on the chart. There was serious discussion of accuracy about information during the charting event. The group had to go back and check on written text and pictures. Some information could not be found in either format. The most vigorous discussion was about ears. Could underwater animals have ears? Did they? How could they have ears with water coming in? This was far removed from the two beginning activities of Prediction Pairs and the Incomplete Paragraph Frame in conjunction with Balto! There were no shy students in this discussion. Instead, they spoke like experts, and asked for the interventionist to reread passages, demonstrating an understanding of the importance and use of texts. They also knew how to question and defend their position without resorting to anger.
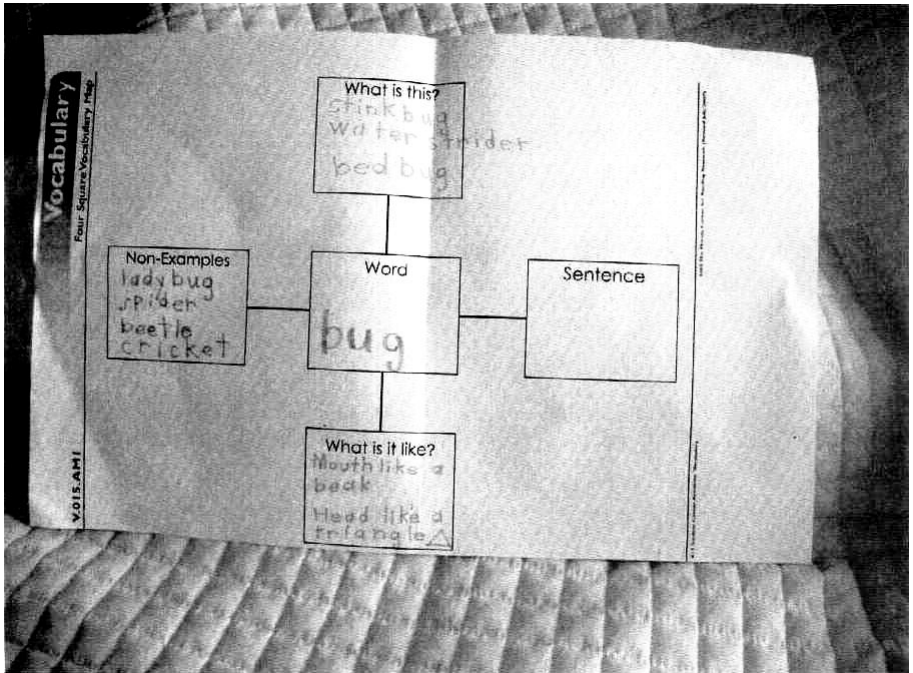
Frayer Model/Four Square Vocabulary Map
The Frayer Model, adapted by FCRR (2005), has also been called the Four Square Vocabulary Map (Frank, Grossi & Stanfield, 2006). The Four Square Model was used to help students adopt new words and concepts from their reading into their vocabulary.   The topic word is written in the centermost rectangle. In the square below the central topic word descriptions of the word are placed. A list of examples is written in the square above the central topic word, and non-examples are to the left of it. In the box on the right, students must construct a sentence using the topic word.

In this activity, the interventionist read one part of *Bugs Are Insects* on one day and the second part the next day (Rockwell, 2001). On the first day, chart paper was used for an outline of the three criteria for categorizing an insect (an exoskeleton, six legs, and three body parts) and an arachnid (an exoskeleton, eight legs, and two body parts). The interventionist used different colored inks for each criterion for the insect. When writing criteria for the arachnid, she used the same corresponding colors for exoskeleton, body parts, and number of legs so that students could compare and contrast the information. The next day, the students filled out the Four Square Vocabulary Map, referring to information they had completed in the outline the day before (Figure 7). The interventionist had to reread the information that explained the criteria. She read one part that explained the triangular head. Then she read the portion that explained that a bug had a mouth like a beak. One student said, "A bird has a beak!" which prompted a big discussion about beaks. One student said, "They have a mouth like this," using his hands to show a beak and moving them up and down. The next day, after the students finished the book, they completed non-examples. A discussion ensued over whether or not a ladybug was a "bug." The students directed the interventionist to go back to the text to verify that a ladybug

does not have a triangular head or a mouth like a beak. The students accepted the book as the authority for information to verify accuracy.

Figure 7
Frayer/ Four Square Model

Vocabulary
Four Square Vocabulary Map

What is this?
Stink bug
Water strider
bed bug

Non-Examples
lady bug
spider
beetle
cricket

Word
bug

Sentence

What is it like?
Mouth like a beak
Head like a triangle △

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Discussion

Student results on the middle of the year TPRI showed that, as a group, these students out-performed the previous year's students. In 2006-2007, 22 students (50%) were identified as "still developing" in listening comprehension at the beginning of the school year; by mid-year, 19 students (43%) were "still developing." In comparison, in 2007-2008, 38 students (78%) were categorized as "still developing" in listening comprehension at the beginning of the year; only 18 students (37%) were "still developing" at mid-year. However, this result cannot necessarily be contributed to the use of graphic organizers alone. Specific quantitative research to assess the accuracy of this initial research needs to be completed for further understanding of the impact of the use of graphic organizers on students' achievement in literacy.

This study demonstrated that graphic organizers can be adapted for use with kindergarten students, by omitting portions, simplifying or expanding the format, or by integrating questioning techniques during discussions prior

to writing information onto the organizer. Using graphic organizers for teaching vocabulary helps students to organize what is written on the organizer. It helps students organize and focus their thinking processes. The graphic organizers used in this study also helped students learn the one-to-one correspondence between what they said and what was written on the paper. Additionally, students learned the power of the spoken word and the written word when defending knowledge of factual information.

Conclusion

The results of this experience demonstrate that organizers intended for use with older students can be modified and adapted to fit the needs of younger students. Repeated uses of the organizers helped the interventionist ask better clarifying questions to keep students focused. Students came to anticipate their use and relied on them to scaffold their discussion; the organizers reinforced students' learning of facts and vocabulary. They proved to be an important learning aid for the kindergarten students.
The use of graphic organizers and nonfiction has also contributed to a difference in the instructional environment of the pullout classes at the charter school. Last year, boys were often off-task and frequently appeared to be daydreaming. This year, they were interested in finding out what book the class would read for the day, and were much more engaged in talking about the readings. They contributed to the discussions with personal stories and questions. They asked the interventionist to look up more facts on the computer in order to satisfy their requests for extended information. Both boys and girls were observed to be adding new words to their conversational vocabularies. Based on this experience, the use of graphic organizers will continue to be a major part of instruction in the school's elementary classes.

References

Ae-Kwa, K., Vaughn, S., Wanzek, J., & Wei, S. (2004). Graphic organizers and their effects on the reading comprehension of students with LD. *Journal of Learning Disabilities, 37*(2), 105-118.

Ausubel, D. P. (1960). The use of advance organizers in the learning and retention of meaningful verbal material. *Journal of Educational Psychology, 51,* 267-272.

Ausubel, D. P. (1970). The use of ideational organizers in science teaching. Occasional paper 3. Columbus, OH: ERIC Information Analysis Center for Science. (ERIC Document Reproduction Service No. ED050930)

Banikowski, A. & Mehring, T. (1991). Strategies to enhance memory based on brain research. *Focus on Exceptional Children, 32,* 1-16.0

Benson, C. (2002). Shifting paradigms and pedagogy with nonfiction: A call to arms for survival in the 21st century. *The NERA Journal, 38*(2), 1-6.

Braselton, S. & Decker, B.C. (1994). Using graphic organizers to improve the reading of mathematics. *The Reading Teacher, 48*(3), 276-281

Chall, J., Jacob, V. & Baldwin, L. (1990) *The reading crisis: Why poor children fall behind.* Cambridge, MA: Harvard University Press.

Clawson, E.U. & Barnes, B.R. (1972). The effects of organizers on the learning of structured anthropology materials in the elementary grades. *Education*, *93*, 150-157.

Duke, N. K. (2000) 3.6 minutes per day: The scarcity of informational text in first grade. *Reading Research Quarterly, 35,* 202-224.

Duke, N.K. & Bennett-Armistead, V.S. (2003). *Reading and writing information text in the primary grades. Research-based practices.* New York: Scholastic, Inc

Dynamic Indicators of Basic Early Literacy Skills (DIBELS) [computer software] (2007). Eugene, OR: University of Oregon Center on Teaching and Learning.

Florida Center for Reading Research a Florida State University Center (2006). Tallahassee, Florida. Available at www.fccr.org.

Frank, C. B., Grossi, J. M. & Stanfield, D. J. (2006). *Applications of reading strategies within the classroom. Explanations, models, and teacher templates for content areas in grades 3-12*. Boston: Pearson Education, Inc

Garrett, S. D., Martinez-Schaum, A., Zunker, N. & Stephens-Crowder, D. (2008) "Nonfiction Means Real": The Accessibility of Nonfiction Texts in the Elementary Classroom. In J. Cassidy and A. Martinez (Eds.). CEDER Yearbook. Texas A&M University-Corpus Christi:

Center for Educational Development, Evaluation, and Research (CEDER).

Harkrader, M.A. & Moore, R. (1997). Literature preferences of fourth graders. *Reading Research and Instruction, 36,* 325-339.

Livingston, N., Kurkjian, C., Young, T. & Pringle, L. (2004). Nonfiction as literature: An untapped goldmine. *The Reading Teacher, 57*(6), 582-591.

Mohr, K. A. J. (2003). "I want that book!": First-graders' preferences for expository text. In D.D.Allen, A.G. Leavell, J.B. Mathis & K.A.J.Mohr (Eds.). *Celebrating the freedom of literacy* (pp. 71-85). Commerce, TX: College Reading Association.

Moore, D.W. & Readence, J.E. (1984). A quantitative and qualitative review of graph organizer research. *Journal of Educational Research, 78,* 11-17.

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Reports of the subgroups.* Washington, DC: National Institute of Child Health and Human Development. (NIH Publication No. 00-4754).

Ogle, D. (2003). Reading and learning about our wonderful world. Information-rich resources and strategies to engage readers. *The NERA Journal, 39*(3), 7-10.

Owens, C.V. (2003). Nonsense, sense and science: Misconceptions and illustrated trade books. *Journal of Children's Literature, 29*(1), 55-62.

Palincsar, A.S. & Duke, N. (2004). The role of text and text-reader interactions in young children's reading development and achievement. *The Elementary School Journal, 105*(2), 183-197.

Palmer, R. G. & Stewart, R.A. (2003). Nonfiction trade book use in primary grades. *The Reading Teacher, 57*(1), 38-48.

Pallotta, J. (1989). *The yucky reptile alphabet book.* Watertown, MS: Charlesbridge Publishing, Inc.

Richardson, J. S., Morgan, R. F., & Fleener, C. (2006). *Reading to learn in the content areas.* Belmont, CA: Thomson Higher Education.

Robb, L. (2003). *Teaching reading in social studies, science, and math. Practical ways to weave comprehension strategies into your content area teaching.* New York: Scholastic.

Rockwell, A. (2001). *Bugs are insects.* New York: HarperCollins, and Let's-Read-and-Find-Out-Science.

Scott Foresman Reading. (2000). Glenview, Illinois: Addison-Wesley Educational Publishing, Inc.

Standiford, N. (1989). *The bravest dog ever: The true story of Balto.* New York: Random House.

Stien, D. & Beed, P.L. (2004). Bridging the gap between fiction and nonfiction in the literature circle setting. *The Reading Teacher, (57*(6), 510-518.

Texas Education Agency (2003). *Test of Academic Knowledge and Skills (TAKS).* Texas Education Agency: Austin, TX. Available from http://www.tea.state.tx.us/ student.assessment/

Texas Education Agency & University of Texas System (2006). *Texas Primary Reading Inventory (TPRI).* University of Texas: Houston, TX. Available from   http://www.tpri.org

Thomson, S. (2005). *Amazing sharks! Amazing whales!* New York: Scholastic, Inc.

Thomson, S. (2006). *Amazing dolphins!* New York: Scholastic, Inc.

Vacca, R.T. & Vacca, J. L. (2008). *Content area reading. Literacy and learning across the curriculum.* Boston: Pearson Education.

Venesky, R.L. (1982). The origins of the present day chasm between adult literacy needs and school literacy instruction. *Visible Language*, 16, 113-136.

Yopp, R.H. & Yopp, H.K. (2000). Sharing informational text with young children. *The Reading Teacher, 53*(5), 410-423.

Chapter 6

Superintendent-Board Relations: Competencies for Success

Michael J. Moody

Abstract

A positive working relationship between the school board and its superintendent of schools is vital to the successful employment of the superintendent and also to the successful operation of the school district. A more thorough awareness of the professional competencies of public school superintendents that are perceived to be the most desirable for successful employment should enhance dialogue between superintendents and boards of education as well as decrease the level of ambiguity inherent to the position. The purpose of this investigation is to identity the professional competencies of public school superintendents that are perceived to be the most desirable for successful employment by both Nebraska school board presidents and by school superintendents themselves. A secondary purpose is to determine which, if any, of nine specific competencies result in non-renewal of the superintendent's contract when performed unsatisfactorily.

Superintendent-Board Relations: Competencies for Success

The 1983 National Commission on Excellence in Education report entitled *A Nation at Risk* opened a virtual "floodgate" of seemingly endless educational reform initiatives. Within this reform context, Bjork (1993), observed that the decade of the 1980s produced increasing pressure for educational reform, and superintendents found themselves faced with the need to act decisively to improve schools. The net result has been a marked increase in public and political involvement in the educational process and a corresponding increase in the complexity of the public school superintendency, as well as an increasing level of instability in the relationship between school superintendents and boards of education (Carter & Cunningham, 1997; Morgan & Petersen, 2002; Norton, Web, Dlugosh, & Sybouts, 1996).

Thomas Glass (2001a), in a series of articles about school improvement and the relationship between superintendent and school board leadership, states: "After years of highly publicized reform efforts, school reformers are

beginning to take notice that superintendents and school boards are important participants in improving school performance" (p. 1). Conversely, the inability of boards of education and school superintendents to develop or maintain positive and productive working relationships has been shown to adversely impact the overall performance of a school district (Petersen & Short, 2001).

As the social and political pressures for school improvement continue to mount, school leadership becomes increasingly more difficult and complex. In this respect, Blumberg and Blumberg (1985) suggest that the most critical association in running a school system is the interplay between the superintendent and the school board (cited in Petersen & Short, 2002). A major determining factor in the quality of this interplay between school boards and school superintendents is the role of specific professional competencies in the development and maintenance of a cooperative and productive working relationship between the superintendent of schools and his or her board of education (Carter & Cunningham, 1997; Glass, Bjork, & Brunner, 2000; Haugland, 1986, Norton et al., 1996; Petersen & Short, 2001, 2002; Peterson & Klotz, 1999).

Research regarding board-superintendent relations has noted several specific skills to be "essential in the development and maintenance of a cooperative relationship between the superintendent and board of education" (Petersen & Short, 2002, p. 412). Within this context, Ovando & Troxell (1997) proffer that "competencies required for the effective leadership of superintendents may include a combination of needed knowledge, skills, and attitudes to assume a defined role at a satisfactory level of performance" (p. 414). Haugland (1986) also indicates that the "role expectation of the superintendent of schools requires a breadth and depth of knowledge, supplemented by many personal, technical and human relations skills, deep personal convictions, and a sense of mission to be performed through the institution of public education" (p. 23). Additionally, both Haugland (1986) and Peterson (1999) report finding only a minimal amount of research and related literature regarding the professional competencies needed for continued employment of the superintendent of schools.

The identification of a set of specific competencies that are integral to the success of the superintendent is complicated by the fact that related terms such as professional skills, personal characteristics, performance dimensions, professional responsibilities, and leadership roles are often used interchangeably with the term "competency" in professional literature. Finally, while Wall's 1991 review of the literature finds incongruence with regard to terminology; he does note that while "the terms may not be the same, the theme is identical. Superintendent success is based upon from 8 to 10 broad categories of tasks" (p. 41).

Statement of the Problem

The purpose of this investigation is to identity which, if any, of the following nine specific professional competencies of public school superintendents are perceived most desirable for successful employment by Nebraska school board presidents and also by Nebraska school superintendents themselves. The specific professional competencies of public school superintendents under question are as follows: (1) Public Relations, (2) School Finance, (3) Personnel Management, (4) Curriculum Development, (5) Policy Formulation, (6) School Construction, (7) Accomplishment of Goals Set by Board, (8) Superintendent-Board Relations, and (9) Collective Bargaining. A secondary purpose is to determine which, if any, of the nine specific competency areas have impacted non-renewal of the superintendents' contracts when performed unsatisfactorily.

The investigation sought answers to the following research questions:

1. To what extent do public school board presidents and superintendents agree upon the professional competencies most desirable for success?
2. To what extent do school board presidents and superintendents from small, medium, and large public school districts agree upon the professional competencies most desirable for success?
3. To what extent do these professional competencies, when performed unsatisfactorily, result in dismissal (contract non-renewal) of the superintendent?

Review of Literature

The role of the public school superintendent has experienced an ongoing pattern of evolution and change since its earliest years (Callahan, 1962; Carter & Cunningham, 1997; Haugland, 1986; Knezevich, 1984; Kowalski, 2005; Norton et al., 1996). While many scholars have attributed this phenomenon to evolutionary forces, others have characterized much of the turmoil as a response to growing conflict and confusion inherent to increasing social, political, and economic forces. This pattern of evolutionary change tied to social forces seems to have entered into an expansive period of dissatisfaction with public education beginning in the mid 1980s (Carter & Cunningham, 1997; Hoyle, English, & Steffy, 1998; Peterson, 1999).

The release of *A Nation at Risk* (National Commission on Excellence in Education, 1983) created a public outcry for accelerated educational reform (Kowalski, 2003) that ultimately led to "a growing disenchantment of bureaucratic forms of school management [that] have eroded the district leader's ability to govern educational institutions effectively" (Petersen &

Short, 2002, p. 412). Within the ethos of change initiated by *A Nation at Risk (NAR)*, school reform initiatives have been generally characterized as occurring in three separate and distinct iterations or "waves." Guthrie & Springer (2004), characterize the initial reform iteration as "harvesting immediately available low-hanging education reform fruit such as longer school days and years, more required courses, fewer electives, more math and science and less shop math, and higher graduation requirements and college admission standards" (p. 27).

The second wave of educational reform primarily encompassed the final decade of the 20th century, and it is generally characterized as the standards-based reform movement. Within this context,

> standards-based education reform has been associated with a specific set of initiatives that include curriculum content and student performance standards, tests that measure how well students are learning that curriculum, and restructured finance and governance systems that make it more likely that the goal underlying these standards—teaching all students to high standards—is accomplished, or significant progress toward that goal is made. (Odden, Archibald, & Fermanich, 2003, p. 82)

With the passage of Public Law 107-110, the *No Child Left Behind Act of 2001* (*NCLB*), the nation entered into its third, and current, educational reform iteration—a reform movement "symbolized by measurement of outcomes and the construction of today's accountability systems" (Guthrie & Springer, 2004, p. 31). According to Cunningham (2003), *NCLB* is "the most influential federal legislation to affect schools and classrooms in American history" (p. 152).

Within this milieu of educational reform, the primary legacy of *NAR* has been a generalized erosion of confidence in public schooling, coupled with increasing calls for major educational reform and increased demands on the position of the superintendency (Byrd, Crews, & Johnson, 2006), which has ultimately led to what Kochan & Reed (2005) termed, "the advent of the accountability age" (p. 71). In this regard, federal government mandates such as *NCLB* will serve to "place even more demands on superintendents" (Schleuning, 2003, p. 29), and school boards (Byrd et al., 2006).

Within an accelerating climate of school reform and increased accountability, school board-superintendent relations are a matter of paramount interest. Generally speaking, the division of labor between boards of education and superintendents is theoretically clear: the board of education sets policy and the superintendent of schools administers said policy. However, the practical implications are another matter; growing political and social pressures for school reform have led to increasing levels

of role conflict and role ambiguity (Carter & Cunningham, 1997; DiPaloa & Stronge, 2003; Glass, 2001b; Konnert & Augenstein, 1990; Norton et al., 1996). Reversing this trend toward increasing role ambiguity and role conflict will require improvements in the relations between the superintendent of schools and his or her board of education. Ultimately, building a strong relationship with the board of education requires that the superintendent know the expectations of the board (Haugland, 1986; Heimann, 2006; Peterson, 1999; Wall, 1991).

Methodology and Procedures

The Selected Population
The population selected for this study was comprised of all K-12 public school superintendents in Nebraska. Additionally, all Nebraska school board presidents were surveyed. A total of 126 responses were received from a survey population of 253 Nebraska school board presidents. This represents a survey return rate of 49.81%. Of the 241 Nebraska school superintendent questionnaires that were mailed, 214 were returned, for a return rate of 88.80%.

Data Collection and Analysis
The research instruments used in the dissertation were modified versions of survey instruments originally developed by Haugland (1986). The original instruments were modified to reflect the delimitation of surveying only Nebraska school board presidents and Nebraska school superintendents. A five-point Likert scale was utilized to rate each of the following nine competencies: (1) Public Relations; (2) School Finance; (3) Personnel Management; (4) Curriculum Development; (5) Policy Formulation; (6) School Construction; (7) Accomplish Goals Set by Board; (8) Superintendent-Board Relations; and (9) Collective Bargaining; in an attempt to identify which, if any, competency was deemed to be the most desirable for the successful employment of the public school superintendent, as well as to determine the relative relationship of each competency to dismissal or non-renewal of the superintendent's contract. Responses to the survey items were analyzed using descriptive and inferential statistics as described below. The Statistical Package for the Social Sciences (SPSS), version 15, was used for purposes of data analysis. All inferential analyses were based upon a .05 level of statistical significance.
Research Question 1: Descriptive statistics, including means and standard deviations for the school board presidents and for the school superintendents, were computed and reported in rank order of mean item responses for each of the nine professional competencies. An independent

samples *t* test was utilized to determine if significant differences existed between the perceptions of school board presidents and school superintendents for each specific competency.

Research Question 2: Descriptive statistics, including means and standard deviations for the school board presidents and the school superintendents, were computed and reported in rank order of mean item responses. A one-way analysis of variance (ANOVA) was utilized to compare each composite mean between small, medium, and large districts for each specific competency. For each ANOVA, school district size (small, medium, and large) served as the independent variable and the mean response for each competency served as the dependent variable. All significant ANOVAs were followed by Tukey's Honestly Significant Difference (HSD) post-hoc test to determine which groups differ from each other.

Research Question 3: Descriptive statistics, including means and standard deviations for the school board presidents as well as the school superintendents, were computed and reported in rank order of mean item responses. An independent samples *t* test was utilized to determine if significant differences exist between the perceptions of school board presidents and school superintendents for each specific competency.

Additionally, both superintendents and board presidents were asked to indicate if they had been involved in a specific incidence that ultimately led to dismissal, contract non-renewal, or a request for the resignation of the superintendent, or if the superintendent had left the school district under duress. If they responded affirmatively, they were then asked to identify which specific competencies were perceived to have been performed at an unsatisfactory level that ultimately led to such an adverse consequence.

Findings

Demographic Data

The 338 survey respondents represented public school districts in Nebraska. One hundred twenty-six of the survey respondents were school board presidents, while the remaining 214 surveys were received from public school superintendents. Both respondent groups were asked to indicate their respective number of years of experience as either a school board member or as a superintendent of schools. Additionally, each respondent was asked to provide the school district's total school enrollment for the current year. The completed surveys were divided into three equal groups based on the reported student enrollment of the K-12 districts. The groups were categorized as small, medium, or large. The respondents represented public school districts with enrollments as small as 71 students and as large as 21,000 students. The demographic data, including the average years of reported experience, are summarized in the following table:

Table 1
Demographic Information

Characteristics	Frequency	Percent	Mean Years Experience
Board President Demographics			
Group 1 (Small) 71-269 Students	42	33.33	11.69
Group 2 (Medium) 270-521 Students	42	33.34	10.29
Group 3 (Large) 522-21,000 Students	42	33.33	10.74
Total	126	100.00	10.91
Superintendent Demographics			
Group 1 (Small) 71-269 Students	71	33.17	10.45
Group 2 (Medium) 270-521 Students	72	33.66	9.42
Group 3 (Large) 522-21,000 Students	71	33.17	15.54
Total	214	100.00	10.63

Perceived Importance of Professional Competencies

Research Question 1: Individual respondents rated their perception of the importance of each of nine professional competencies using a five-point Likert-type scale (*1 = Not Important at All; and 5 = Very Important*). While both groups perceived all nine of the competencies to be relatively important, school board presidents perceived competency in school finance to be the most important ($M = 4.78$), while superintendents perceived this competency to be the second most important ($M = 4.76$). School board presidents also indicated that superintendent-school board relations was their second highest rated competency ($M = 4.71$), while school superintendents perceived this competency to be the most important ($M = 4.86$). Additionally, both respondent groups rated public relations as the third most important competency. Descriptive statistics from both respondent groups, including the respective means and standard deviations and rankings, are presented in the following table:

Table 2
Ranked Mean of Professional Competencies by Both Respondent Groups

Competency	School Board Presidents (n=126)			School Superintendents (n=214)		
	M	*SD*	Ranked *M*	*M*	*SD*	Ranked *M*
School Finance	4.78	.504	1	4.76	.489	2
Superintendent-Board Relations	4.71	.519	2	4.86	.348	1
Public Relations	4.51	.666	3	4.58	.573	3
Personnel Management	4.48	.603	4	4.48	.618	5
Accomplish Goals Set by the Board	4.36	.638	5	4.52	.595	4
Policy Formation	4.10	.862	6	4.11	.707	6
Curriculum Development	3.97	.885	7	3.73	.833	8
Collective Bargaining	3.79	.960	8	3.87	.054	7
School Construction	3.30	1.075	9	3.54	.891	9

Utilizing an independent samples *t* test to identify the differences between board presidents' and school superintendents' perceived importance of each competency, school board presidents ($M = 3.97$) perceived curriculum development to be significantly more important than did the superintendents ($M = 3.73$), $t (338) = 2.451$, $p = .015$. The superintendents ($M = 3.54$) perceived school construction to be significantly more important than school board presidents ($M = 3.30$), $t (338) = -2.180$, $p =.030$. Additionally, school board presidents perceived accomplishing goals set by the board of education ($M = 4.36$) to be significantly more important than did the superintendents ($M = 4.52$), $t (338) = 2.421$, $p = .016$. While, school board presidents ($M = 4.71$) considered superintendent-board relations to be significantly less important than superintendent ($M = 4.86$), $t (338) = 3.089$, $p = .002$. Finally, significant differences in perceptions between school board presidents and school superintendents were observed regarding the following competencies: curriculum development, school construction, accomplishing goals set by the board of education, and superintendent-board relations.

Table 3
Comparison of Perceived Importance of Professional Competencies

Competency	Means		t	p
	Board Presidents ($n = 126$)	School Superin-tendents ($n = 214$)		
Public Relations	4.51	4.58	1.113	.266
School Finance	4.78	4.76	-0.290	.772
Personnel Management	4.48	4.48	0.074	.941
Curriculum Development	3.97	3.73	-2.451	.015*
Policy Formation	4.10	4.11	0.142	.887
School Construction	3.30	3.54	2.180	.030*
Accomplish Goals Set by the Board	4.36	4.52	2.421	.016*
Superintendent-Board Relations	4.71	4.86	3.089	.002*
Collective Bargaining	3.79	3.87	0.918	.359

*Indicates significant difference at the .05 level.

Differences in the Perceived Importance of Professional Competencies
     Research Question 2: When comparing each of the nine professional competencies by the size of the school district, a significant difference was observed regarding school finance, $F (2,337) = 5.520$, $p = .004$. The results of the post-hoc test (Tukey's HSD) indicated that school board presidents and school superintendents from small schools ($M = 4.81$) and medium sized schools ($M = 4.85$) perceived school finance to be significantly more important than did the school board presidents and school superintendents from large school districts ($M = 4.65$). There were no additional observed significant differences regarding the remaining competencies. Finally, when the perceived relative importance of the nine specific competencies were compared based upon the size of the school district the ANOVA did not indicate any significant differences between the perceived levels of importance of the nine competencies by school board presidents. The results reported in Table 4 represent the results of the ANOVA of the combined responses of school board presidents and superintendents.

Table 4
Differences Regarding the Perceived Importance of Professional
Competencies Based on District Enrollment

Competency	M			F	p
	Small (n=113)	Medium (n=114)	Large (n=113)		
Public Relations	4.55	4.49	4.63	1.451	.236
School Finance	4.81 (L)	4.85 (L)	4.65 (S,M)	5.520	.004*
Personnel Management	4.52	4.45	4.47	0.447	.640
Curriculum Development	3.89	3.75	3.81	0.751	.473
Policy Formation	4.08	4.09	4.14	0.217	.805
School Construction	3.36	3.39	3.60	2.107	.123
Accomplish Goals Set by the Board	4.43	4.41	4.54	1.398	.249
Superintendent-Board Relations	4.81	4.80	4.81	0.040	.916
Collective Bargaining	3.92	3.75	3.85	1.080	.341

*Indicates significant difference at the .05 level. Letters in parentheses
indicate those groups indicating a significant difference.

Unsatisfactory Performance

Research Question 3: In regard to unsatisfactory performance in specific
competency areas, school board presidents ($M = 3.37$) rated satisfactory
performance in the area of curriculum development significantly higher than
did school superintendents ($M = 3.09$), $t (338) = -2.511$, $p = .012$.
Superintendents ($M = 4.11$), on the other hand, perceived satisfactory
performance in public relations to be significantly higher than did school
board presidents ($M = 3.79$), $t (338) = 3.299$, $p = .001$. Additionally, with
regard to continued employment of the superintendent, accomplishing goals
set by the board was perceived to be significantly less important by board
presidents ($M = 4.05$) than it was by superintendents ($M = 4.52$), $t (338) =
5.966$, $p = .000$. School superintendents also perceived satisfactory
performance in the areas of school construction ($M = 3.12$) and
superintendent-board relations ($M = 4.80$) to be significantly more critical to
the continued employment than did school board presidents ($M = 2.69$) and
($M = 4.37$), respectively, demonstrating $t (338) = 3.82$, p 1 $= .000$ for school
construction, and $t (338) = 6.538$, $p = .000$ for the superintendent-school
board relations. Table 5 represents the means and standard deviations for the
school board presidents, as well as the school superintendents, by mean item
responses for each of the nine professional competencies.

Table 5
Perceived Importance of Professional Competencies Related to the Continued Employment of the Superintendent of Schools

Competency	Means		*t*	*p*
	Board Presidents (*n* = 126)	School Superintendents (*n* = 214)		
Public Relations	3.79	4.11	3.299	.001*
School Finance	4.63	4.73	1.482	.139
Personnel Management	4.21	4.25	0.457	.648
Curriculum Development	3.37	3.09	-2.511	.012*
Policy Formation	3.43	3.48	0.545	.586
School Construction	2.69	3.12	3.821	.000*
Accomplish Goals Set by the Board	4.05	4.52	5.966	.000*
Superintendent-Board Relations	4.37	4.80	6.538	.000*
Collective Bargaining	3.29	3.36	0.643	.521

*Indicates significant difference at the .05 level.

Additionally, an analysis of variance (ANOVA) conducted within the two groups, as well between the groups, revealed no significant differences regarding the competencies school finance, personnel management, policy formation, and collective bargaining. While, an ANOVA comparing the ratings of school board presidents identified a significant difference regarding the competency of school finance, $F (2,123) = 5.344, p = .006$. Results of the post-hoc test (Tukey's HSD) also indicated that school board presidents in small schools ($M = 4.71$) and medium sized schools ($M = 4.81$) reported significantly higher levels of perceived importance of the competency school finance than did board presidents of larger school districts ($M = 4.38$). Based upon school district size, there were no other significant differences found regarding the ratings of those competencies, which if performed unsatisfactorily would result in the superintendent losing his or her job.

Table 6
Board President's Perceptions Regarding Unsatisfactory Performance

Competency	M			F	p
	Small (n=42)	Medium (n=42)	Large (n=42)		
Public Relations	3.76	3.86	3.74	0.167	.847
School Finance	4.71 (L)	4.81	4.38 (S,M)	5.344	.006*
Personnel Management	4.33	4.02	4.29	2.820	.063
Curriculum Development	3.45	3.31	3.36	0.209	.812
Policy Formation	3.62	3.31	3.36	1.322	.270
School Construction	2.83	2.55	2.69	0.707	.495
Accomplish Goals Set by the Board	4.07	4.14	3.93	0.846	.432
Superintendent-Board Relations	4.45	4.38	4.29	0.540	.584
Collective Bargaining	3.36	3.24	3.26	0.129	.879

*Indicates significant difference at the .05 level. Letters in parentheses indicate those groups indicating a significant difference.

School board presidents and superintendents were also asked to indicate if they had been involved in a specific incident that led to contract non-renewal, to a request for the resignation of the superintendent, or to the superintendent leaving the district under duress. If they indicated that they had, they were then asked to identify which specific competencies were perceived to have been performed to such an unsatisfactory level that the unsatisfactory performance ultimately led to the departure of the superintendent. If the reason for the departure of the superintendent was not one of the nine specific competencies addressed in this research, respondents were asked to provide the reason or reasons for the superintendent separation.

Of the 126 school board presidents responding, 38 or 30.16% indicated that they had been involved in a situation in which the superintendent had his or her contract non-renewed, had been asked to resign, or had left the district under duress. Of the 214 superintendents that responded, 23 or 10.75% indicated that they had been in a situation in which they had left the school district superintendency under less than amiable circumstances. Table 7 represents the reported competencies that were performed at an unsatisfactory level and reported to have led to the departure of the superintendent.

Table 7
Reasons for Separation

Competency	School Board Presidents (*n*=38)*		School Superintendents (*n*=23)*	
	Frequency	Percent	Frequency	Percent
Public Relations	21	55.26	4	17.39
School Finance	19	50.00	1	00.05
Personnel Management	27	71.05	3	13.04
Curriculum Development	2	00.05	0	00.00
Policy Formation	0	00.00	0	00.00
School Construction	2	00.05	0	00.00
Accomplish Goals Set by the Board	12	31.58	2	00.09
Superintendent-Board Relations	29	76.32	19	82.61
Collective Bargaining	0	00.00	0	00.00

*Represents the number of *n* responding in the affirmative.

Both the school board presidents and school superintendents listed superintendent-board relations most frequently as a cause for the superintendent leaving the district. School board presidents also frequently sited unsatisfactory performance regarding public relations, school finance, and personnel management as causes for the superintendent not returning to the school district. Only one response from the board president respondent group indicated a reason other than unsatisfactory performance on one or more of the nine competencies for the vacating of the superintendent's office. The reason listed was dishonesty. No respondents from the superintendent group listed a reason other than unsatisfactory performance on one or more of the nine competencies as a cause for separation from the school district.

Conclusions

The following conclusions are based upon the results of the analyses of the data and the reported findings of this study:

1. Nebraska school board presidents and school superintendents consider all nine professional competencies to be at least moderately important to the success of the superintendent.
2. Nebraska school board presidents and school superintendents perceive the professional competencies of school finance,

superintendent-board relations, and public relations to be the most important for the success of the superintendent of schools.

3. School district size does not have a major impact upon the perceived importance of the nine professional competencies.

4. The competency of superintendent-school board relations was perceived to be the most critical to the continued employment of the superintendent of schools.

5. In terms of continued employment of the superintendents of schools, there were significant differences between the two respondent groups regarding the perceived importance of the following professional competencies: public relations, curriculum development, school construction, accomplishing goals set by the board, and superintendent-board relations.

6. The lack of consensus between school board presidents and school superintendents regarding the competencies public relations, curriculum development, accomplishing goals set by the board, and superintendent-board relations could lead to future difficulties between boards of education and school superintendents.

References

Bjork, L. G. (1993). Effective schools-effective superintendents: The emerging instructional leadership role. *Journal of School Leadership, 3*(3), 246-259.

Blumberg, A., & Blumberg, P. (1985). *The school superintendent living with conflict.* New York: Teachers College Press.

Byrd, J. K., Crews, C., & Johnson, J. (2006). *Factors impacting superintendent turnover: Lessons from the field*. Online submission of paper presented at the annual meeting of the University Council of Educational Administration (UCEA). (ERIC Document Reproduction Service No. ED 493287)

Callahan, R. E. (1962). *Education and the cult of efficiency*. Chicago: The University of Chicago Press.

Carter, G. R., & Cunningham, W. G. (1997). *The American superintendent: Leading in an age of pressure*. San Francisco: Jossey-Bass, Inc.

Cunningham, L. L. (2003). Governing learning at the community level: Rethinking and projecting. In W. L. Boyd & D. Miretzky, (Eds.), *American educational governance on trial: Change and challenges* (pp.155-176). Chicago, IL: The University of Chicago Press.

DiPaloa, M. F., & Stronge, J. H. (2003). *Superintendent evaluation handbook*. Lanham, MD: Scarecrow Press.

Glass, T. E. (2001a). *Superintendent leaders look at the superintendency, school boards and reform*. Denver, CO: Education Commission of the States. Retrieved June 2, 2006, from www.ecs.org/clearinghouse/27/18/2718.htm.

Glass, T. E. (2001b). *The superintendent crisis: A review by search consultants*. Denver, CO: Education Commission of the States. Retrieved June 2, 2006, from www.ecs.org/clearinghouse/28/25/2825.htm.

Glass, T. E., Bjork, L. G., & Brunner, C. C. (2000). *The study of the American school superintendency*. Arlington, VA: American Association of School Administrators.

Guthrie J. W., & Springer, M. G. (2004). A nation at risk revisited: Did "wrong" reasoning result in "Right" results? At what cost? *Peabody Journal of Education*, *79*(1), 7-35.

Haugland, M. M. (1986). A comparative analysis of the professional competencies needed by superintendents of public schools perceived to be most desirable for successful employment by school board members and superintendents in South Dakota. (Doctoral Dissertation, University of South Dakota-Vermillion). *Dissertation Abstracts International, 47*(5), 1548. (UMI No. 8616587).

Heimann, B. (2006). *Performance evaluation of Nebraska's k-12 public school superintendents*. Unpublished doctoral dissertation, University of South Dakota-Vermillion.

Hoyle, J. R., English, F. W., & Steffy, B. E. (1998). *Skills for successful 21st century school leaders: Standards for peak performers.* Arlington, VA: American Association of School Administrators.

Knezevich, S. J. (1984). *Administration of public education: A sourcebook for the leadership and management of educational institutions* (4th ed.). New York: Harper & Row.

Kochan, F. K., & Reed, C. J. (2005). Collaborative leadership, community building, and democracy in public education. In F. W. English (Ed.), *The sage handbook of educational leadership: Advances in theory, research, and practice* (pp. 68-84). Thousand Oaks, CA: SAGE Publications.

Konnert, W. M., & Augenstein, J. J. (1990). *The superintendency in the nineties: What superintendents and board members need to know.* Lancaster, PA: Technomic Publishing Company, Inc.

Kowalski, T. J. (2003). *Contemporary school administration: An introduction* (2nd ed.). Boston: Allyn & Bacon.

Kowalski, T. J. (2005). Evolution of the school superintendent as communicator. *Communication Education, 54*(2), 101-117.

Morgan, C. L., & Petersen, G. J. (2002). The role of the district superintendent in leading academically successful school districts. In B. S. Cooper & L. D. Fusarelli, (Eds.), *The promises and perils facing today's school superintendent* (pp.175-196). Lanham, MD: Scarecrow Press, Inc.

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform* (DHHS Publication No. ADM 065-000-00177-2). Washington, DC: U.S. Government Printing Office.

Norton, M. S., Webb, L. D., Dlugosh, L. L., & Sybouts, W. (1996). *The school superintendency: New responsibilities new leadership*. Boston: Allyn and Bacon.

Odden, A., Archibald, S., & Fermanich, M. (2003). Rethiniing the finance system for improved student achievement. In W. L. Boyd & D. Miretzky (Eds.), *American educational governance on trial: Change and challenges* (pp. 82-113). Chicago, IL: The University of Chicago Press.

Ovando, M. N., & Troxell, D. (1997). Superintendents' multicultural competencies. *Journal of School Leadership, 7*(4), 409-431.

Petersen, G. J., & Short, P. M. (2001). The school board president's perception of the district superintendent: Applying the lenses of

social influence and social style. *Educational Administration Quarterly, 37*(4), 533-570.

Petersen, G. J., & Short, P. M. (2002). An examination of school board presidents' perceptions of their superintendent's interpersonal communication competence and board decision making. *Journal of School Leadership, 12*(4), 411-436.

Peterson, M. R. (1999). Superintendent competencies for continued employment as perceived by Louisiana public school superintendents and school board presidents. (Doctoral Dissertation, University of Southern Mississippi). *Dissertation Abstracts International, 60*(9), 3227. (UMI No. 9947700).

Peterson, M., & Klotz, J. (1999). *Superintendent competencies for continued employment as perceived by Louisiana public school superintendents and school board presidents.* Annual Meeting of the Mid-South Educational Research Association. Point Clear, Alabama. Retrieved September 8, 2005 from http://search.ebscohost.com.proxy.usd.edu/login.aspx?direct=true&db=eric&AN=ED441283&site=ehost-live.

Schleuning, M. K. (2003). Iowa school board presidents' perceptions regarding superintendent candidate characteristics. (Doctoral Dissertation, University of South Dakota). *Dissertation Abstracts International, 64*(3), 753. (UMI No. 3085445).

Wall, R. R. (1991). The successful superintendent: The importance of selected performance dimensions as perceived by superintendents and board of education presidents in class II and class III Nebraska school district*s*. (Doctoral Dissertation, University of Nebraska-Lincoln). *Dissertation Abstracts International, 52*(8), 2784. (UMI No. 9203357).

Higher Education in a Changing World

Chapter 7

Pre-Service Teachers Perceptions of the Value of Math/Science Notebooks

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Abstract

There is a current trend in K-12 academics to integrate scientific inquiry, math and the language arts using math/science notebooks. Research indicates that K-6 student achievement in science and literacy and college readiness increased as a result of combining science inquiry and literacy with the construction of a science notebook. The purpose of this research is to explore perceptions of pre-service elementary teachers on the value, definition, student experience, and benefit of math/science notebooks. Research subjects were enrolled in a teacher education course focused on early childhood math and science. The survey revealed that the majority of pre-service teachers responded positively to the perceived value and benefit of using a math/science notebook, although most had little or no experience utilizing a math/science notebook and/or organizer as an instructional method. Incorporating math/science notebook construction as part of pre-service teachers' education methodology may result in more effective teachers and enhanced student achievement.

Pre-Service Teachers Perceptions of the Value of Math/Science Notebooks

Public concern about the achievement of American students in science and mathematics has intensified in recent years. Several major reports on education, including those by the Carnegie Foundation, the Education Commission of the United States, and the College Board each emphasize that science and math content both need improvement. Additionally, the National Research Council (1996) and the National science Foundation (2006) have also called for improvements in student achievement in math and science. One recommendation to improve student achievement is to include writing as a curriculum objective (Ornstein & Hunkins, 2004).

There is a need for teachers to utilize a variety of teaching genres when delivering math and science instruction. One such method, which can be implemented with resources that most pre-service teachers and professors already have at their disposal, is the use of math/science notebooks. There is

a growing body of research that demonstrates how notebooks can enhance student achievement in grades K-12 (Amaral, Garrison, & Klentschy, 2002; Jorgenson & Vanosdall, 2002; Klentschy & Molina-DeLaTorre, 2004). However, while data to support the integration of science notebooks is plentiful, there is very little methodological data on notebook construction in any subject included in the teacher certification curriculum.

A math/science notebook portfolio is utilized as an assessment instrument and required as part of the students' course evaluation. Both research and K-12 teachers' experiences support the construction of math/science notebooks. However, many pre-service teachers are unfamiliar with notebooks and wonder why they need to complete one. This apparent lack of knowledge on the part of pre-service teachers about the use of notebooks prompted the researchers to begin an initial exploration of pre-service teachers' perceptions on math/science notebooks.

This study is designed to investigate pre-service elementary teachers' experiences and perceptions of using math/science notebooks as an authentic portfolio of artifacts documenting student work and performance. The data generated from this study will be utilized to help design more effective pre-service teacher instruction.

This study aims to answer the following questions:

1. How do pre-service teachers define a math/science notebook?
2. What value does the math/science notebook have to pre-service teachers?
3. How much experience do pre-service teachers have with math/science notebooks?
4. What perceived benefit do math/science notebooks have for pre-service teachers?

Math/science Inquiry and Language Development Share Cognitive Processes

Researchers consider writing as a means to promote learning (Scardamalia & Bereiter, 1986) and thinking (Tompkins, 2004; Klentschy & Molina-De La Torre, 2004). However, it is during the writing revision process that learners extend their scientific ideas and document claims and transform these ideas to deepen their understanding of scientific concepts (Yore, Craig, & Maguire, 1998). Learners utilize writing strategies to record, summarize, and communicate the results of scientific inquiry (NRC, 1996). During the scientific writing process each student creates language (common vocabulary, syntactical, and numerical relationships between words) to express scientific concepts (relational meaning), which helps improve the student's written language acquisition (Jablon, 2006).

Math and scientific inquiry both share the same meaning construction processes as found in literacy and language development. They both require the activation of prior knowledge, questioning or inquiry, setting a purpose, analyzing information, drawing conclusions, and communicating results and new ideas (Klentschy, 2005; Klentschy & Molina-DeLaTorre, 2004; Yore, Craig, Maguire, 1998). science and math also require the same rational/logical thought processes that are used in language (Charlesworth & Lind, 2007). Thus, writing and scientific/mathematic inquiry are reciprocal communication processes wherein the learner integrates environmental information and transforms that information into personal interpretations that are connected to prior knowledge and experiences (Akerson & Young, 2005; Driver & Bell, 1986; Jablon, 2006; Yore, Craig & Maguire, 1998).

What is a Math/science Literacy Notebook?
The construction of a math/science notebook is a way for students to organize their exploration of scientific inquiry through engaging in concrete metacognitive experiences. The notebook is comprised of student writing activities such as laboratory write-ups, calculations, illustrations, concepts maps, and Venn diagrams (LeSage & Patton, 2007; Patton 2008). All of the documents that students create are systematically connected within the context of the math/science notebook. The math/science notebook consists of many writing examples, so it lends itself to use as a literacy enhancer as well. A student of any age who participates in scientific writing activities is "consolidating, elaborating, and assessing science explorations" that help the learner scaffold new content (LeSage & Patton, 2007; Patton, 2008; Yore, Craig & Maguire, 1998).

Value of the Math/science Literacy Notebook
Research indicates that K-6 student achievement in both science and Literacy increased as a result of combining scientific inquiry and literacy in the construction of a science notebook (Amaral, Garrison, & Klentschy 2002; Jorgenson & Vanosdall, 2002; Klentschy & Molina-DeLaTorre, 2004). Documenting in writing what has been learned becomes a knowledge-transforming process. Writing is a very important form of communication in science and math to translate concepts, procedures, results, and conclusions (Robertson, 2005) and to help students think and express their ideas about science content in a form that can be re-examined (Klentschy & Molina-DeLaTorre, 2004; Patton, 2008; Their, 2002; VanDeWeghe, 1987). Research shows that student achievement in science and other subjects improves when science notebooks are implemented in the instructional design (Douglas, Klentschy, Worth, & Binder 2006). Notebooks implemented as part of the science pedagogy have shown to correlate with an increase of more than 30% in student achievement on the

Stanford Achievement Test within 4 years, as well as greater student college readiness (Amaral, Garrison, & Klentschy, 2002; Jorgenson & Vanosdall, 2002; Klentschy & Molina-De La Torre, 2004). The combination of writing strategies and math/science notebooks can help increase student achievement. Integrating math/science notebooks can provide learners with a format to use language as a meta-cognitive inquiry process tool. Using notebooks as an organizational method actively engages students, leading them to be more proficient critical and reflective thinkers. Students are able to participate in their own learning by making connections to previously learned concepts and exploring ideas through expository and narrative writing tasks.

Methodology

Forty-seven pre-service teachers in two early childhood math/science undergraduate courses at the University of Houston-Victoria were the selected as the participants for this study. The majority of students were over 30 years of age (60 %). There were forty–six female students and one male student. A survey was administered to the students. Completion of the survey was not a course requirement and was voluntary. The identities of the students were kept anonymous. Of the 47 class members, 29 responded to the survey, about a 66% return rate. No prior instruction by the researchers was delivered to the pre-service teachers regarding math/science notebooks prior to conducting the research. Data were collected during the first week of the semester in the form of a survey. The survey was comprised of the following questions:

1. What is your definition of a math/science notebook?
2. What value does a math/science notebook have?
3. What experience do you have with notebooks?
4. What benefit does a math/science notebook have?

The following are possible limitations to the research:

1. The research was conducted on two campuses of one university. Of the 47 participants, 30 were enrolled at a suburban campus and 17 were enrolled on a rural campus.
2. Student responses are self-reported and reflect students' memories of experiences, which may have led to the creation of a Hawthorne effect.
3. Results of this study may not be generalized to other disciplines.

Results

The purpose of this investigation was to explore the perceptions of pre-service elementary teachers regarding their definitions, values, experiences, and perceived benefits of using math/science notebooks in the classroom. Descriptive data were compiled from the student survey questions. The data were analyzed with the assistance of the Statistical Package for Social science (SPSS 15.0) for Windows. The results are presented here question by question. All percentages have been rounded unless noted.

Question 1: "What is your definition of a Math/science notebook?"

The researchers sorted the definitions reported by the students into three categories: complex, some definition, or no definition. 55% of pre-service teachers had some definition and 17% provided complex definitions. The most complex definitions, which were likely to have required more time to develop by the student, accounted for the smallest percentage of responses. These students may have had more experience with notebook organizers and will be investigated in future studies. Over one fourth (28 %) of the pre-service teachers either did not have or did not provide a definition. Two examples of definitions provided by pre-service teachers are as follows:

> "A math and science notebook can be viewed as a portfolio of the works that the student has accomplished and can [be] referred back to as a resource for math and science" (Student # 18).

> "I feel that math and science notebooks are a place where students collect important information for them to reference in the future. It is an ongoing assignment that builds on more information as time goes by. It is meant to improve their understanding of math or science. I actually went into a classroom that each child had their own science notebook. They got to decorate the cover however they wanted and inside had lots of good information. I had asked a few students if they liked the notebooks and all of the students responded with great information about the notebook. They said that it would help them with their TAKS testing. The teacher had a set lay out of the notebook that the students had to follow and it seemed really helpful" (Student #22).

Table 1 shows the frequency and percentages of the pre-service teacher definition of math/science notebooks as categorized by the researchers. Figure 1 presents a bar graph that illustrates the percentages of the three types of definitions.

Table 1
Student Definition of Math/science Notebooks Frequency

Definitions	Frequency	Percent	Cumulative Percent
Complex	5	17.2	17.2
Some	16	55.2	72.4
None	8	27.6	100
Total	29	100	

Figure 1
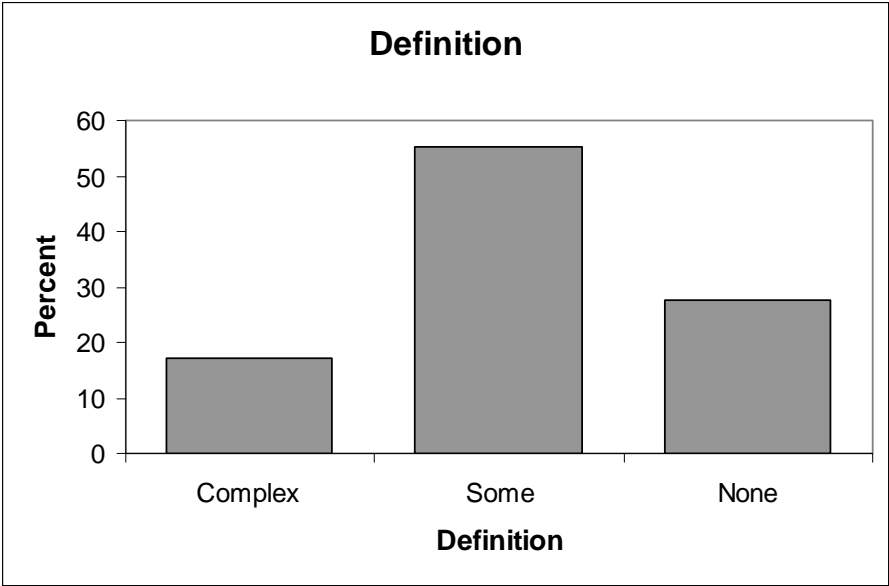**Student Definition of Math/science Notebooks Percentage**

Figure 1 clearly shows that the majority of students were able to present a personal definition of what a math/science notebook is, although 28 % did not provide one. Students who did not have a definition did not reveal why they had none. This question may encourage future research.

Question 2: "What value does a math/science notebook have?"
Nearly 76 % of the pre-service teachers believed that notebooks were very valuable to the learning experiences of students. Approximately 21 % viewed the notebook as having only some value. Only one participant responded that the notebook had no value. By evaluating the complexity of each student response, the researchers categorized the responses as being very valuable, somewhat valuable, or having no value. The majority of students (97 %) felt that the math/science notebook was of value to them and provided an explanation. Two student response examples are as follows:

"I think a math and science notebook would help me stay more organized not only with my work but with my thoughts. I also think this would be beneficial to students because they can look back at information and study it whenever they have time to. This would also help me to student more and to really keep things together. It would help because I would actually know were to put things and keep important information in correct spots." (Student #7).

"It will have many ideas for me to use in my classroom and have activities available for the students to enhance their learning as well as keep up with the new trends in math and science." (Student #8).

Table 2 shows the frequency and percentages of the pre-service teacher math/science notebook value responses. Figure 2 portrays the student math/science notebook value response frequency.

Table 2
Student Math/Science Notebook Frequency Value

Value	Frequency	Percent	Cumulative Percent
Very	22	75.9	75.9
Somewhat	6	20.7	96.6
None	1	3.4	100
Total	29	100	

Figure 2
Student Math/Science Notebook Value Percentage
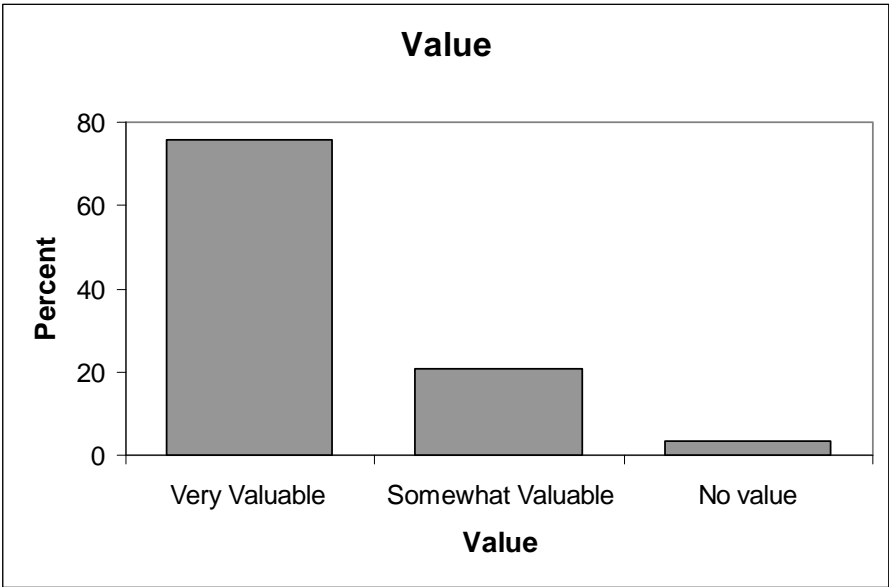
Question 3: "What experience do you have with notebooks?"
   Over 50% of respondents stated that they had no experience with using notebooks. Nearly an additional 35% reported that their only exposure to math/science notebooks was in college level Teacher-Education courses. Table 3 illustrates the frequency and percentages of student experience with math/science notebooks. Figure 3 presents the percentages of student experience with notebooks in the form of a bar graph.

Table 3
Student Math/science Notebook Frequency Experience

Experience	Frequency	Percent	Cumulative Percent
High	4	13.8	13.8
Some	10	34.5	48.3
None	15	51.7	100
Total	29	100	

Figure 3
Student Math/science Notebook Percentage Experience
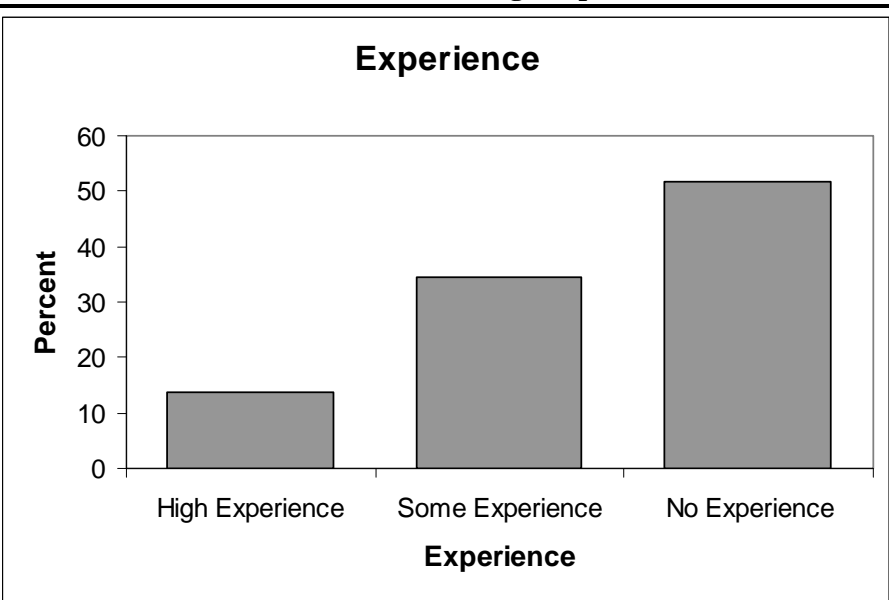
Question 4: "What benefit does a math/science notebook have?"
    Only two students felt that there was no perceivable benefit to using a notebook. One student wrote: "I plan to teach physical education and would not be using any notebooks such as this in the classroom" (Student #10). The majority of students, however, responded that the use of notebooks could be

beneficial in their classes. Over 86% of the participants (25) felt that the notebooks would greatly benefit them, while about 7% of the pre-service teachers (2) believed that it would just have some benefit. Examples of student responses indicating that math/science notebooks would be beneficial are as follows:

> "Yes, I do think a math/science notebook would benefit me as a teacher and my future students. I would need to model and teach them how to sort and organize the information needed to be in the notebook and also how to retrieve information using the notebook." (Student #13).

> "I do think that a math/science notebook would benefit me as a teacher for several reasons. If the student were bringing a math/science notebook with them from the previous grade, it would benefit me in that I could assess what the student has learned and use what I know about him to teach him new material. For a student in my class, the notebook would be important to me because I could watch the child progress in his knowledge and/or watch for areas that the child needs further instruction in. I could also share the notebook with the student's parents so that they could see what is going on in the classroom. Finally, the notebook would be beneficial to the student because the work inside it would be things he did his best on and takes pride in. Hopefully, the activities and work he does to put into the notebook are meaningful and interesting to him. Ultimately, the notebooks students create are tools that help them really learn math and science concepts and not just get them through the next test in each subject." (Student #5).

Table 4 illustrates the frequencies and the percentages of pre-service teacher responses to the benefit of math/science Notebooks. Figure 4 presents the percentages of student beliefs in the beneficence of using notebooks.

Table 4
Student Math/science Notebook Frequency Benefit

Benefit	Frequency	Percent	Cumulative Percent
High	25	86.2	86.2
Some	2	6.9	93.1
None	2	6.9	100
Total	29	100	

Figure 4
Student Math/science Notebook Percentage Benefit
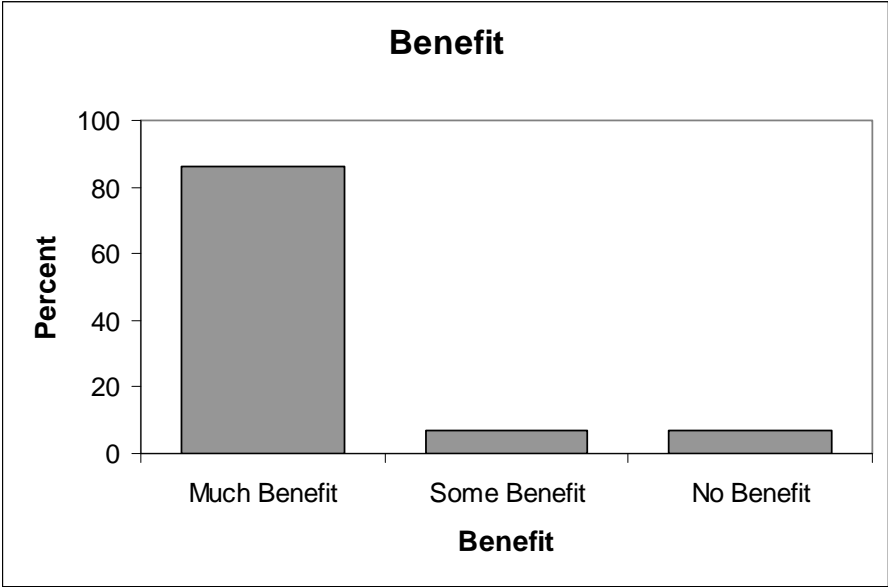
Conclusion

    This research was conducted to explore the perceptions of pre-service teachers of using math/science notebooks. Overall, the results of all four of the research questions indicate that pre-service teachers hold very positive attitudes toward the idea of including math/science notebooks in their instruction. Since the number of participants was not very large, it would be difficult to generalize the results to broader populations. However, the responses generated by this study do provide insight on pre-service teachers' knowledge and attitudes toward the use of math/science notebooks.

    The majority of pre-service teachers had developed their own personal definitions of math/science notebooks. It is interesting to note that while approximately 86% of the pre-service teachers answering the survey reported they had little or no experience with notebooks, more than 75% felt that the use of notebooks is very valuable to learning.

    Further research may be required to find out why some students believe that notebooks are of value but are not utilizing notebooks for their own benefit. It would also be interesting to survey these same pre-service teachers again after they have been in the classroom for several years and determine if their beliefs about math/science notebooks have remained the same or changed. Additionally, a cross tabulation of pre-service teacher perceptions of math/science notebooks with prior knowledge of notebook

organizers and selected demographic data could help to determine which pre-service teachers need training and/or improvement of organization skills.

Incorporating math/science notebook construction as part of the pre-service teacher education methodology is beneficial because it could promote the performance of teachers and enhance elementary student achievement. However, this study has shown that additional research is needed on instructional methodology in pre-service teacher math/science instruction. There is a need to design effective teaching practices that new teachers as well as veteran teachers can use to implement strategies utilizing math/science notebooks in the classroom.

References

Akerson, V. L., & Young, T. A. (2005). science the "write" way. *science and Children, 43*(31) 38-41.

Amaral, O., Garrison, L., & Klentschy, M. (2002). Helping English learners increase achievement through inquiry-based science instruction. *Bilingual Research Journal, 26*(2), 213-239.

Charlesworth, R., & Lind, K. K. (2007). *Math & science concepts for young children, 5th edition.* Thomson Delmar learning: New York

Douglas, R., Klentschy, M. P., Worth, K., & Binder, W. (Eds.). (2006). *Linking science & literacy in the K-8 classroom.* Arlington, VA: NSTA press.

Driver, R., & Bell, B. (1986). Students' thinking and the learning of science: A constructivist view. *School science Review*, 76(240), 443-456.

Jablon P. (2006). Writing through inquiry. *science Scope*, 29(7), 18-20.

Jorgenson, O., & Vanosdall, R. (2002). The death of science? What are we risking in our rush toward standardization testing and three R's? *Phi Delta Kappan, 83*(8), 601-605.

Klentschy, M. (2005). science notebooks essentials. *science and Children*, 34(3), 24-17.

Klentschy, M., & E. Molina-De La Torre. (2004). Student's science notebooks and the inquiry process. In E. W. Saul (ed.), *Crossing borders in literacy and science instruction: Perspectives on theory and practice*. Newark, DE: International Reading Association.

Le Sage, T. A., & Patton B. (2007, November). *More bigger: science inquiry, metacognition, and measurement.* Paper presented science Teachers Association of Texas (STAT), Austin, TX.

National Research Council (NRC) (1996). *National science education standards.* Washington, DC: National Academy Press. Retrieved August 18, 2008 from http://books.nap.edu/readingroom/books/nses/7.html#spb

National science Foundation (NSF) (2006). *science and engineering indicators*. Retrieved August 28, 2008 from http://www.nsf.gov/statistics/indicators/

Ornstein, A. C., & Hunkins, F. (2004). *Curriculum: Foundations, principles, and issues* (4th ed.). Boston: Allyn and Bacon.

Patton, B. (2008, April). *Tight budget no problem*. Paper presented at the Association for Mathematics Teachers Education Conference (NCTM), Salt Lake City, UT.

Robertson, B. (2005). science 101 background boosters for elementary teachers: Q What writing represents what scientists actually do? *science and Children*, 34(5) 50-51.

Scardamalia, M., & Bereiter, C. (1986). Research on written composition. In M. C. Wittrock (Ed.), *Handbook on research on teaching* (3rd ed., pp. 779-799). New York: Macmillan.

Their, M. (2002). *The new science literacy: Using language skills to help students learn science.* Portsmouth, N.H: Heinemann.

Tompkins, G. E. (2004). *Literacy for the 21ˢᵗ century*. New Jersey: Pearson.

Van De Weghe, R. (1987). Making and remaking meaning: Development literacy responses through purposeful, informal writing. *English Quarterly, 20*(1), 38-51.

Yore, L., Craig, M., & Maguire, T. (1998). Index of science reading awareness: An interactive-constructive model, test verification, and grades 4-8 results. *Journal of Research in science Teaching 35*(1) 24-27.

Chapter 8

Counselor Education Programs for a Changing World

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Abstract
Counselor education has responded to meet the needs of a world in flux, and counselor education can continue to meet the changing needs of the world community. The key resources documenting the evolution of counselor education include publications of the American Counseling Association (ACA) and the Council for Accreditation of Counseling and Related Educational Programs (CACREP). The authors also present theoretical perspectives congruent with implementing a counselor education curriculum in a diverse world before providing suggested practices for effective counselor educators in a changing world.

Counselor Education Programs for a Changing World
"The only real voyage consists not in seeking new landscapes, but in having new eyes; in seeing the universe through the eyes of another, one hundred others—in seeing the hundred universes that each of them sees." – Marcel Proust

Demographics reported by the census bureau from 1990 to 2000 indicate that the population in the United States has progressively increased in racial and ethnic diversity during the last half of the twentieth century. By the year 2000, the majority of the populations of California, Hawaii, and New Mexico were reported to be comprised of racial minorities (Hobbs & Stoop, 2002). As society becomes more diverse, counselors and counselor educators face challenges in understanding and effectively working with issues of diversity (Arthur & Achenbach, 2002; Dinsmore & England, 1996; Torres-Rivera, Phan, Maddux, Wilber, & Garrett, 2001). Counselor educators from underrepresented populations have been at the forefront of calling attention to the need for multi-culturally-competent counselors in the field (Arredondo, 1999; D'Andrea & Daniels, 2001; Robinson & Morris, 2000; Sue, Arrendondo, & McDavis, 1992).

In October of 2007, the president of the American Counseling Association (ACA), Brian Canfield, began his monthly address with the following words:

> The Great Seal of the United States of America bears the Latin motto "E Pluribus Unum." The motto's literal translation, "Out of many, one," originally referred to the union between the 13 original states and the federal government. However, the motto holds multiple meanings. It also underscores our country's identity as a nation of immigrants, with each group's unique traditions and culture enriching the unified whole. It also refers to the culturally pluralistic and multiethnic nature of modern American society. It's a great motto that reminds us there is strength in our numbers and diversity. For me, this motto also holds meaning for the future of the counseling profession. (Canfield, 2007)

Canfield compares this concept of diversity with the 19 Divisions of the American Counseling Association, reminding counselors of what can be accomplished when people work together. The very breadth of the organizations contained under the umbrella of the American Counseling Association illustrates the responsibility of counselor educators to teach and train a wide and diverse range of counselors.

This article aims to describe how counselor educators have met the challenge of training counselors in a changing world. It will also discuss selected theories congruent to the integration of multicultural, advocacy, and social justice issues in counselor education programs. Lastly, this article will suggest nine ways in which counselor educators can construct counselor education programs that are sensitive to multicultural issues and that prepare future counselors for success in a changing era.

Counselor Education Response to a Pluralistic Society

In a postmodern world, where a pluralistic society has grappled with the pursuit of basic human rights, strong voices in the field of counselor education have asserted the need to continue working toward equality in educational opportunities and access to counseling services. Counselor educators also recognize the importance of developing a multicultural perspective in order to educate counselors to work within a pluralistic society.

In 1991, the Professional Standards Committee of the Association for Multicultural Counseling and Development (AMCD) presented 31 Proposed Cross-Cultural Competencies, Objectives, and a Call for Action, which were published simultaneously in both the *Journal for Multicultural Counseling and Development* and the *Journal of Counseling and Development* (Sue, Arrendondo, & McDavis, 1992). Since that time, many scholars have contributed greatly to the literature related to these multicultural competencies (Hill, 2003; Roysircar, Sandhu, & Bibbins, 2003; Stadler,

Suhyun, Cobia, Middleton, & Carney, 2006). As a result, issues of diversity have been increasingly incorporated into organizational codes of ethics, accreditation standards, and counselor education curricula.

Further reflecting the changing values in the counseling world, a perusal of ACA conference schedules since 2000 reflects a number of programs focusing on multicultural concerns. In fact, ACA program submission guidelines now require information on how issues of diversity and culture will be addressed in proposed presentations. Additionally, a revised ACA Code of Ethics (ACA, 2005) was adopted in 2005 after a three-year developmental process. In 2006, David Kaplan conducted an interview with Courtland Lee and Tammy Bringaze, two members of the ACA Ethical Code Revision Task Force. Lee reported that the main assignment for the Ethical Code Revision Task Force was to examine the ACA Code of Ethics in terms of multiculturalism and changing demographics and to revise the code to make it culturally sensitive. The task force infused every section of the ethical code with the values of recognizing and working sensitively with the effects of age, color, culture, disability, ethnic group, gender, race, language preference, religion, spirituality, sexual orientation, and socioeconomic status. In the same interview with Kaplan, Bringaze pointed out that the 2005 code acknowledged, for the first time, the importance of being culturally sensitive to the complex simultaneous interaction of the cultures of the supervisor, the supervisee, and the client in supervision. Regarding counselor education specifically, the ACA Code of Ethics (2005) states that issues of multiculturalism and diversity should be included in all courses and workshops to enhance multicultural competency.

The ACA and the Council for Accreditation of Counseling and Related Educational Programs (CACREP) have both mandated that counselor educators be committed to recruiting and retaining a diverse faculty and student body. One of the eight core knowledge areas outlined and described in Section II of the CACREP standards explicitly requires social and cultural diversity to be included in the curriculum of counselor education programs. According to CACREP, curricular experiences are to include

> …studies that provide an understanding of the cultural context of relationships, issues, and trends in a multicultural and diverse society related to such factors as culture, ethnicity, nationality, age, gender, sexual orientation, mental and physical characteristics, education, family values, religious and spiritual values, socio-economic status, and unique characteristics of individuals, couples, families, ethnic groups, and communities… (CACREP, 2001, p. 11)

These experiences, recommended by CACREP, are in addition to the skills and competencies students were already required to gain toward working successfully with diverse populations.

Both the ACA Code of Ethics and CACREP standards clearly address issues of advocacy and social justice. The ACA Code of Ethics urges counselors to work at all levels of society to "examine potential barriers and obstacles that inhibit access and/or the growth and development of clients" (ACA, 2005, p. 5). CACREP standards indicate that counselor education program curricula include a focus on "…counselors' roles in social justice, advocacy, and conflict resolution, cultural self-awareness, the nature of biases, prejudices, processes of intentional and unintentional oppression, and discrimination…" (CACREP, 2001, p. 12). A review of the third draft of the 2009 CACREP standards (2007) reveals continued attention to multicultural and diversity awareness with an emphasis on how the counseling process is impacted. In addition, a section on diversity and advocacy has been added to each of the master's degree specialty areas, which include career counseling, college counseling, and student development, school counseling, addiction counseling, marriage, couple and family counseling, and clinical mental health counseling.

Both the 2001 and the third draft of the 2009 CACREP standards contain a content area in which doctoral students are required to obtain pedagogical knowledge related to cultural and social concerns, social change theory, and advocacy action planning. Another content area mandated by the CACREP standards addresses "…the role of racial, ethnic, and cultural heritage, nationality, socioeconomic status, family structure, age, gender, sexual orientation, religious and spiritual beliefs, occupation, physical and mental status, local, regional, national, international perspective, and equity issues in counselor education programs" (CACREP, 2001, p. 58). In addition to the two multicultural content areas included in the knowledge section of the CACREP standards, the third draft for 2009 also specifies the inclusion of multicultural learning outcomes related to counseling, supervision, leadership, and advocacy.

Issues of diversity are an integral aspect of supervision training (Hays & Chang, 2003). Counselor education master's and doctoral programs can not obtain or retain CACREP accreditation unless requirements for the implementation of multicultural knowledge and skill-based standards have been met. Recent publications have focused on the impact of these changes in the CACREP standards on the practice of counseling (Hill, 2003; Vereen, Hill, & McNeal, 2008). Stadler, Suhyun, Cobia, Middleton, & Carney (2006) describe in detail how they redesigned their counselor education program to emphasize diversity as a core value.

Parallel to the recent focus on multicultural concerns is the inclusion of advocacy and social justice issues in education and training. Forty-three

advocacy competencies developed by Lewis, Arnold, House, & Toporek (2003) included client/student empowerment, client/student advocacy, community collaboration, systems advocacy, public information, and social/political advocacy. These competencies were endorsed by the ACA Governing Council in 2003. The Association for Counselor Education and Supervision (ACES) Executive Council followed suit in 2007.

A plethora of advocacy and social justice articles related to both teaching and practice have appeared in numerous counseling journals and literature in recent years. Some authors have concentrated on the general significance of advocacy in terms of the entire counseling profession (Myers & Sweeney, 2004; Myers, Sweeney, & White, 2002), while others have called attention to the importance of advocacy by counselors in unique settings such as schools (Akos & Galassi, 2004; Bemak & Chung, 2005; Galassi & Akos, 2004; Trusty & Brown, 2005) or family counseling (Murray, Lampinen, & Kelley-Soderholm, 2006; Perry & Rolland, 1999). Additionally, the focus on training counselors in the area of social justice has resulted in the publication of various models, key principles, relevant practices, and implications for educators and supervisors (Bemak & Chung, 2007; Constantine, Hage, Kindaichi, & Bryant, 2007; Goodman, Liang, Helms, Lotta, Sparks, & Weintrab, 2004; Kiselica & Robinson, 2001; Lee, 2007; Osborne et al., 1998).

The ethical codes, multicultural counseling and advocacy competencies, and accreditation standards provided by the ACA and CACREP—and reinforced by scholars—have given counselor educators guidelines for including social and cultural issues, advocacy, and social justice in the counseling curriculum. In the next section, this article will discuss various theoretical approaches to implementing these values in counselor education classrooms.

Educating Counselors in a Pluralistic Society: Selected Theoretical Perspectives

Many researchers and theorists hold the position that optimal learning is experiential rather than didactic in nature (Kim & Lyons, 2003; Kolb, 1981; 1984). Rogers & Freiberg (1994) recommend maintaining a balance of cognitive and emotional learning, and they emphasize that learning must be personally meaningful to the student and be initiated by the student to be highly effective. They stated that optimal learning environments occur in a positive, safe climate with minimal threats and within relationships that are characterized by acceptance and respect. Rogers, in particular, believes that successful teachers are authentic, and that they are able to share thoughts and feelings with students without dominating the learning environment. His seminal work on the counselor-client relationship (Rogers, 1961) is closely

tied to the theoretical and philosophical roots of the counseling profession, the basis of which is building and maintaining healthy relationships.

In a similar vein, Kolb (1984) is also interested in experiential learning. He describes an experiential learning cycle of experience, reflection, conceptualizing, and action, which leads to new experience. According to Kolb, experiential learning involves learning activities followed by periods of student reflection. Students who are involved in experiential learning activities become engaged cognitively, emotionally, and physically. One of Kolb's key concepts is that if the learning experience is to be remembered, it must be enjoyable, motivating, and rewarding. Therefore, in education, the construction of meaningful learning activities is more important than the possession of knowledge. The ideas and choices of the students are respected in the optimal experiential learning environment. The role of the teacher is to offer support and protection so that students are free to take advantage of opportunities for risk taking and discovery, and to encourage and facilitate student reflection.

Paulo Freire, a proponent of critical pedagogy, has had a massive influence on teaching multicultural concepts and social justice in the classroom. Freire (2006; 2007) asserts that three teaching behaviors facilitate student empowerment: attending to student needs and perceptions, building self-assurance by presenting problems for discussion, and utilizing the results of learning to develop and implement an action plan. His perspective on education has been summarized as follows:

> Education either functions as an instrument which is used to facilitate integration of the younger generation into the logic of the present system and bring about conformity or it becomes the practice of freedom, the means by which men and women deal critically and creatively with reality and discover how to participate in the transformation of their world. (Schaull, 2006, p. 34)

Ira Shor, whose work was shaped by Freire, emphasizes empowering students by assisting them in learning the skills necessary to advocate for themselves (Shor 1987; 1992). He advocates for the engagement of students in democratic forms of discussion, deemphasizing hierarchy. Shor describes the teacher as a co-learner, stating: "The teacher is no longer merely the one-who-teaches, but one who is himself taught in dialogue with the students, who in turn while being taught also teach[es]" (Shor, 1987, p. 67).

Perhaps the most significant aspect of the theories developed by Rogers, Kolb, Freire, and Shor is that they do not advocate the teaching of social justice. Instead, they establish an educational climate characterized by socially just behaviors in the learning environment.

Many feminist theories also have much to say about the construction of the classroom climate (Stanton, 1996). Brookfield & Preskill (2005), like Shor, highlight discussion as one of several tools in their description of developing a democratic classroom. Similarly, a recent approach outlined by Enns & Sinacore (2005) integrates both feminist and multicultural pedagogies to develop an egalitarian pedagogy. They report that *how* teachers teach may be more significant than *what* they teach. Enns & Sinacore stress combining cognitive, emotional, and personal experiences in the classroom. Elements of their approach to pedagogy include holistic learning and attention to social change and diversity, particularly regarding sensitivity toward marginalized cultures. They assert that minorities and women have had limited opportunities to gain access to knowledge, power, and status. Further, they believe the classroom is a microcosm of society, and they are therefore concerned that the traditional classroom may replicate traditional social structures that limit minorities and women. As with Shor; Enns and Sinacore encourage egalitarian classrooms that provide opportunities for discussion, reflection, experiential learning, and the co-construction of knowledge by the teacher and students. While Enns & Sinacore believe an egalitarian classroom as they have described is an optimal learning environment, they readily acknowledge the dilemma of how to develop truly egalitarian learning when teachers are naturally dominant over students.

Social constructivist and postmodern thinking have also contributed to current educational practices in counselor education. The notion of multiple representations of reality is a good fit for educators who are sensitive to multicultural concerns and committed to social justice amidst the complexities of a pluralistic society. Similarly, both critical and egalitarian pedagogies find congruence with the idea that knowledge is socially constructed through actual activities and experiences in the environment, rather than reproduced through theoretical teaching. Students require interactive learning experiences with other students or their teacher, followed by reflection. Reflection is repeatedly mentioned as a learning tool in social constructivism, and many counselor educators have developed activities using reflection to enhance learning (Griffith & Frieden, 2000; Guifridda, 2005; Strong, 2003).

Jonassen, Peck, & Wilson (1999) declare that social constructivism is distinguished by a collaborative construction of knowledge through a give-and-take process marked by cooperation, not competition, among students for acknowledgment from the teacher, who provides curriculum and contributes through pedagogy and everyday actions. Teachers and students play a part in assigning meaning to the concepts of school, classroom, teaching, and learning.

Theories, such as the one put forth by Jonassen, Peck, & Wilson, prompted Eriksen and McAuliff to write three books describing constructivist-derived methods of teaching and training counselors, course design, and program development (Eriksen & McAuliff, 2001; 2002; McAuliff & Eriksen, 2000). Meanwhile, Snyder (2005) describes how he applied his theoretical construct of hope to higher education. His recommendations are consistent with the postmodern and social constructionist theories described above. Snyder's recommendations are:

1. Teachers need to genuinely care about students and spend time with them.
2. Teachers should set clear goals for students requiring cooperation.
3. Teachers must create paths for learning which necessitate student networking.
4. Teachers should assist students in becoming stimulated by group learning activities.
5. Teachers establish an environment where students care about the welfare of their classmates and in turn feel as if their classmates care about them.

Conclusion

This article provides an outline of how the counseling profession has responded to meet the needs of a changing world by instituting standards related to multiculturalism, advocacy, and social justice. A review of selected theories relevant to implementing these standards in educational programs has been presented. As counselor educators who were educated in a counselor education program grounded in the theoretical principles of Carl Rogers, the authors of this article highly value the person-centered tradition of counseling and support the direction in which ACA and CACREP are guiding the profession. They believe that egalitarian relationships and student-centered learning environments are essential elements in creating personally meaningful learning that is both cognitive and experiential in nature. They also maintain that counselor education programs should celebrate human rights and diversity by facilitating teaching and learning environments that empower students to be advocates for positive change in the world community.

Lastly, the authors support the recommendations for teachers made by Snyder (2005) and suggest the implementation of the following practices in counselor education:

1. Attend to how activities and assignments might favor one class of students to the disadvantage of other students.

2. Learn about the different language styles, values, goals, and abilities of students.
3. Discuss power with students and relate it personally to their lives so they have improved chances of being successful.
4. Teach students to be critical of their environments.
5. Increase knowledge about marginalized groups.
6. Network with other teachers who teach for social justice.
7. Role model by personally working on social justice issues.
8. Share what you have learned by developing proposals to present at state and national conferences on multicultural issues, advocacy, and social justice.
9. Partner with colleagues to propose grants and conduct research to evaluate the effectiveness of social justice pedagogy.

References

Akos, P., & Galassi, J.P. (2004). Training school counselors as developmental advocates. *Counselor Education and Supervision, 43,* 192-206.

American Counseling Association (ACA) (2005). *ACA code of ethics.* Alexandria, VA: American Counseling Association.

Arredondo, P. (1999). Multicultural competencies as tools to address oppression and racism. *Journal of Counseling and Development, 77,* 102-108.

Arthur, N., & Achenbach, K. (2002). Developing multicultural counseling competencies through experiential learning. *Counselor Education and Supervision, 42,* 2-14.

Bemak, F., & Chung, R. C. (2005). Advocacy as a critical role for urban school counselors: Working toward equity and social justice. *Professional School Counselor, 8,* 196-202.

Bemak, F., & Chung, R. C. (2007). Training counselors in social justice. In C. C. Lee (Ed.), *Counseling for social justice* (2nd ed.). Alexandria, VA: American Counseling Association.

Brookfield, S. D., & Preskill, S. (2005). *Discussion as a way of teaching: Tools and techniques for democratic classrooms.* San Francisco: Jossey-Bass.

Canfield, B. (2007). From the president – Many uniting into one. *President's Message, 10.01.07.* Retrieved March 2, 2008 from http://www.counseling.org/publications/ presidentsmessage.htm

Constantine, M. G., Hage, S. M., Kindaichi, M. M., & Bryant, R. M. (2007). Social justice and multicultural issues: Implications for the practice and training of counselors and counseling psychologists. *Journal of Counseling and Development, 85,* 24-29.

Council for Accreditation of Counseling and Related Educational Programs (CACREP) (2001). *CACREP accreditation standards and procedures manual.* Alexandria, VA: Author.

Council for Accreditation of Counseling and Related Educational Programs (CACREP) (2007). *Draft #3 of the 2009 CACREP standards.* Retrieved March 2, 2008 from http://www.cacrep.org/2009CACREPstandardsrevision-Draft3final.doc

D'Andrea, M., & Daniels, J. (2001). Expanding our thinking about White racism: Facing the challenge of multicultural counseling in the 21st century. In J. G. Ponterotto, J. M. Casa, L. A. Suzuki, & C. M. Alexander (Eds.), *Handbook of multicultural counseling* (2nd ed., pp. 257-288). Thousand Oaks, CA: Sage.

Dinsmore, J. A., & England, J. T. (1996). A study of multicultural counseling training at CACREP-accredited counselor education programs. *Counselor Education and Supervision, 36,* 58-76.

Enns, C. Z., & Sinacore, A. L. (Eds.). (2005). *Teaching and social justice: Integrating multicultural and feminist theories in the classroom.* Washington D.C.: American Psychological Association.

Eriksen, K., & McAuliff, G. (Eds.). (2001). *Teaching counselors and therapists: Constructivist and developmental course design.* Westport, CT: Bergins and Garvey.

Freire, P. (2006). *Pedagogy of the oppressed: 30th anniversary edition.* NY: Continuum.

Freire, P. (2007). *Education for critical consciousness*. London: Continuum Impacts.

Galassi, J. P., & Akos, P. (2004). Developmental advocacy: Twenty-first century school counseling. *Journal of Counseling and Development, 82*, 146-157.

Goodman, L. A., Liang, B., Helms, J. E., Lotta, R. E., Sparks, E., & Weintrab, S. R. (2004). Training counseling psychologists as social justice agents: Feminist and multicultural principles in action. *The Counseling Psychologist, 32,* 793-837.

Griffith, B., & Frieden, G. (2000). Facilitating reflective thinking in counselor education. *Counselor Education and Supervision, 40,* 82-94.

Guifridda, D. A. (2005). The emergence model: An alternative pedagogy for facilitating self-reflection and theoretical fit in counseling students. *Counselor Education and Supervision, 44,* 201-213.

Hays, D. G., & Chang, C. Y. (2003). White privilege, oppression, and racial identity development: Implications for supervision. *Counselor Education and Supervision, 43,* 134-145.

Hays, D. G., Dean, J. K., & Chang, C. Y. (2007). Addressing privilege and oppression in counselor training and practice: A qualitative analysis. *Journal of Counseling and Development, 85,* 317-324.

Hill, N. R. (2003). Promoting and celebrating multicultural competence in counselor trainees. *Counselor Education and Supervision, 43,* 39-51.

Hobbs, F., & Stoops, N. (2002). *Demographic trends in the 20th century: Census 2000 special reports, series CENSR-4*. Washington, DC: U.S. Government Printing Office. Retrieved August 8, 2008 from http://www.census.gov/prod/2002pubs/censr-4.pdf

Jonassen, D. H., Peck, K. L., & Wilson, B. G. (1999). *Learning with technology: A constructivist perspective.* Upper Saddle River, NJ: Prentice Hall.

Kaplan, D. (2006). A new focus on cultural sensitivity. *Counseling Today Online: Ethics update 06/01/01.* Retrieved March 8, 2008 from http://www.counseling.org/Publications/CounselingTodayArticles

Kiselica, M. S., & Robinson, M. (2001). Bringing advocacy counseling to life: The history, issues, and human dramas of social justice work in counseling. *Journal of Counseling and Development, 79,* 387-397.

Kim, B. S. K., & Lyons, H. Z. (2003). Experiential activities and multicultural counseling competence training. *Journal of Counseling and Development, 21,* 400-408.

Kolb, D. A. (1984). *Experiential Learning.* Englewood Cliffs, NJ: Prentice-Hall.

Kolb, D. A. (1981). Learning styles and disciplinary differences. In A. W. Chickering (Ed.) *The modern American college*, San Francisco: Jossey-Bass.

Lee, C. C. (Ed.) (2007). *Counseling for social justice* (2nd ed.). Alexandria, VA: American Counseling Association.

Lewis, J., Arnold, M., House, R., & Toporek, R. (2003). *Advocacy Competencies*. Retrieved on May 30, 2006 from http://www.counseling.org/Files/FD

McAuliff, G., & Eriksen, K. (Eds.). (2000). *Preparing counselors: creating constructivist and developmental programs.* Virginia Beach, VA: Donning Company.

McAuliff, G., & Eriksen, K. (Eds.). (2002). *Teaching strategies for constructivist and developmental counselor education*. Westport, CT: Bergin & Garvey.

Murray, C. E., Lampinen, A., & Kelley-Soderholm, E. L. (2006). Teaching family systems theory through service-learning. *Counselor Education and Supervision, 46,* 44-58.

Myers, J. E., & Sweeney, T. J. (2004). Advocacy for the counseling profession: Results of a national survey. *Journal of Counseling and Development, 82*, 466-471.

Myers, J. E. Sweeney, T. J., & White, V. (2002). Advocacy for counseling and counselors: A professional imperative. *Journal of Counseling and Development, 80,* 394-402.

Osborne, J.L., Collison, B.B., House, R. M., Gray, L.A., Firth, J., & Mary, L. (1998). Developing a social advocacy model for counselor education. *Counselor Education and Supervision, 37,* 190-203.

Perry, A. V., & Rolland, J. S. (1999). Spirituality expressed in community action and social justice: A therapeutic means to liberation and hope. In F. Walsh (Ed.), *Spiritual resources in family therapy.* NY: Guilford.

Robinson, D. T., & Morris, J. R. (2000). Multicultural counseling: Historical context and current training consideration. *Western Journal of Black Studies, 24,* 239-259.

Rogers, C. R. (1961). *On becoming a person: a therapist's view of psychotherapy.* Boston: Houghton Mifflin.

Rogers, C., & Freiberg, H. J. (1994). *Freedom to learn* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Roysircar, G., Sandhu, D. S., & Bibbins, Sr. V. E. (Eds.). (2003). *Multicultural competencies: A guidebook of practices*, Alexandria, VA: Association for Multicultural Counseling and Development.

Schaull, R. (2006). Foreword. In P. Friero, *Pedagogy of the oppressed: 30th anniversary edition.* NY: Continuum.

Shor, I. (1987). *Critical teaching and everyday life.* Chicago: University of Chicago Press.

Shor, I. (1992). *Empowering education: Critical teaching for social change.* Chicago: University of Chicago Press.

Snyder, C. R. (2005). Teaching: The message of hope. *The Journal of Clinical and Social Psychology, 24,* 72-84.

Stadler, H. A., Suhyun, S., Cobia, D. C., Middleton, R. A., & Carney, J. S. (2006). Reimagining counselor education with diversity as a core value. *Counselor Education and Supervision, 45,* 193-206.

Stanton, A. (1996). Reconfiguring teaching and knowing in the college classroom. In Goldberger, N., Tarule, J., Clinchy, B. & Belenky, M. (Eds.), *Knowledge, difference, and power: Essays inspired by women's ways of knowing.* NY: Basic Books.

Strong, T. (2003). Engaging reflection: A training exercise using reflection and discourse analysis. *Counselor Education and Supervision, 43,* 65-77.

Sue, D. W., Arrendondo, P., & McDavis, R. J. (1992). Multicultural counseling competencies and standards: A call to the profession. *Journal of Counseling and Development, 70,* 477-486.

Torres-Rivera, E., Phan, L. T., Maddux, C., Wilber, M. P., & Garrett, M. T. (2001). Process versus content: Integrating personal awareness and counseling skills to meet the multicultural challenge of the twenty-first century. *Counselor Education and Supervision, 41,* 28-40.

Trusty, J., & Brown, D. (2005). Advocacy competencies for professional school counselors. *Professional School Counselor, 8,* 259-265.

Vereen, L. G., Hill, N. R., & McNeal, D. T. (2008). Perceptions of multicultural counseling competency: Integration of the curricular and the practical. *Journal of Mental Health Counseling, 30,* 226-236.

Chapter 9

Evaluation of Lesson Plans: Is the Internet Helping or Hindering the Teacher Candidate?

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Abstract

The purpose of this study was to explore the quality of online lesson plans. 200 math lesson plans were randomly selected from the Internet and evaluated according to specific criteria, including lesson objectives, materials, directions, and evaluations. An additional 300 Internet lesson plans that students had submitted in the prior semester were also critiqued. Lastly, teacher candidates evaluated Internet lesson plans as part of an in-class activity. The results revealed that while many online lesson plans contained good ideas, they did not meet standards of quality and were not practical without serious revision.

Evaluation of Lesson Plans: Is the Internet Helping or Hindering the Teacher Candidate?

To be prepared for classroom teaching, teacher candidates need to be able to create and implement quality lessons. Extensive planning is essential for meaningful lessons to be taught in the classroom (Taylor, 2000; Freiberg, 2002). However, in practice, novice teachers may put less effort into planning than experienced teachers. Perez, Johnson, & Emery (1995) state that "experts spend more time in front-end-analysis or planning and trying to understand the domain than novices, while novices immediately begin to consider in detail numerous design strategies."

In the pre-Internet era, it was a given that almost any printed material that a teacher or teacher candidate selected as a source of information would be blind and/or peer reviewed prior to being printed. Today, however, almost anyone can publish anything on the Internet, and lesson plans are not an exception. With the large number of lesson plans available online, it is very important to evaluate their quality.

This study emerged as a professor/researcher in Curriculum and Instruction noticed her students submitting more and more lesson plan assignments that cited Internet sources. This study is designed to provide teacher candidates with cutting-edge information on lesson plans and to aid them in evaluating the quality of lesson plans found online.

The researcher focused on attempting to answer the following questions in this study:

1) Do the lesson plans retrieved from the Internet include:
    a) an introduction
    b) objectives
    c) a complete list of materials or supplies needed
    d) a schema or criteria for evaluation
    e) a timeframe?
2) Are the Internet lesson plans designed realistically for practical use in the classroom?
3) Do the lesson plans found online meet NCTM (National Council of Teachers of Mathematics) standards and allow for students to perform to acceptable levels on state-mandated tests, such as TAKS (Texas Assessment of Knowledge and Skills)?
4) Do the teacher candidates' lesson plans indicate front-end analysis/planning, or was there indication of concern with details of numerous design strategies?

Methodology

This study was conducted in three parts. The first part consisted of an evaluation of lesson plans that the researcher randomly selected from the Internet. Second, the researcher evaluated lesson plans submitted by students during the prior semester in a math/science methodology class. In the third part of the study, the teacher candidates evaluated lesson plans found online as an in-class activity.

When a search on http://www.goodsearch.com/ for "lesson plans" was conducted, there were a little over 11 million hits. While it is probable that many hits were duplicates for the same sites, it was estimated that less than 10% (or 1.1 million) of the hits would result in original or unique sites. Since even that would be too large a number of sites to possibly evaluate for high quality lesson plans, it was therefore necessary to obtain a random sample.

200 math lesson plans were randomly downloaded and analyzed from 200 websites. Most sites had multiple lesson plans covering a wide array of subject areas (i.e. science, reading, social studies, math, etc), however, no more than one elementary math lesson plan was evaluated from any one site. Lesson plans for subjects other than math were also perused for comparison. Though the quality of those lesson plans seemed to be roughly equivalent to the quality of the math plans found on the same site, only Math lesson plans were evaluated in this study.

A rubric designed by the researcher provided the criteria for examining the lesson plans. When developing the rubric, the researcher relied on the work of Cabe (1996) for insight on the components important to creating a

quality lesson plan. Each plan was evaluated for the presence and quality of its title, subject area, age or grade level appropriateness, measurable objectives, an estimated timeframe, supplies required, procedural steps presented in a logical sequence, evaluation methods, and any sources used. While it is generally recognized that high quality lesson plans contain more information, for the purposes of this study, the lesson plans were evaluated for the inclusion of only the most necessary information.

The researcher used the same rubric to evaluate 300 math lesson plans which had been submitted by 60 students in two prior sections of her math and science methodology class for elementary teacher candidates. The classes were conducted in the traditional face-to-face format during a full semester. The students who participated in the study were 98% female between the ages of 22 and 55 and were typically in their final semester of classes prior to entering student teaching. As such, they had been exposed to the practice of writing lesson plans on numerous occasions in many of their classes prior to this one and were expected to be able to write high quality lesson plans at this point in their academic careers. Nevertheless, the teacher candidates were given guidelines for the expected components of each lesson, as well as suggestions for possible sources of ideas (i.e. professional journals and sample lesson plans).

In the third part of the study, the researcher included in her course syllabus an activity in which each student was asked to bring to class five copies of an elementary math lesson plan found on the Internet. This activity was conducted during the second class meeting of the semester. The students were instructed not to critique the lesson, but only to 'quickly grab' one from the Internet. When the students arrived in class the next week, they were instructed to form groups of four. The researcher reviewed Bloom's Taxonomy (Bloom, 1956) and various successful adaptations of lesson plans, all of which contained a title, stated a grade or age level for which they were appropriate, stated objectives, listed required materials or supplies, and included a procedure for implementation and an evaluation schema for assessing students' accomplishment of the stated objective. The students were provided with multiple examples of each of the aspects of a high quality lesson plan. Each group of four students was then instructed to evaluate the lesson plans from the Internet using the examples of good lesson plans to compare and contrast. At the end of the lesson, the researcher asked the groups to share their findings. Tally marks reflecting the details of each Internet lesson plan were scored on a chart listing the features of a high quality lesson plan.

The results of the study were designed to inform teacher candidates about using online lesson plans. Since the teacher candidates were undergraduates, very few had any experience with statistics. Therefore, the statistical analysis used in this study was expressed in the form of simple

percentages. This allows the teacher candidates to be able to easily incorporate the data into their repertoire of lesson plan information.

Results

When the researcher initially analyzed the 200 sampled lesson plans from the Internet, apparent trends and patterns emerged from the data. It was noted that many of the sampled lesson plans found online were, in reality, only an outline for an entire unit or theme, or else a simple activity that would last only a few minutes. Timeframes in many of these lesson plans were either nonexistent or unrealistic, allowing too much time for simple activities or too little time to master complex ideas and tasks.

Similarly, the lesson plans' learning objectives were either not included or were very vague. Few of the online plans contained higher-level thinking skills objectives. For example, worksheets with only computation problems were presented as promoting critical thinking skills. Most plans used terms like "list," "write," and "count," which indicate basic knowledge level questions. Here are a few stated objectives from some of the lesson plans found online:

- "After going over 5 examples of addition as a class, the learner will be able to complete the worksheet within 15 minutes."
- "The student will be able to add integers." (the lesson was on absolute value)
- "Students will practice skip counting while cooperating in a group activity."

Results also showed that many of the schemas for evaluation presented by lesson plans found on the Internet were either very weak and indefinite or not included at all on the various lesson plans. Some examples of evaluation schemas found in the online lesson plans were:

- "This game teaches the math concepts of sets, division of threes, addition and thinking skills. Also use to build self-esteem and make learning fun."
- "After each student has participated in this activity, add up each group's points and reward the group with the most points."

Directions or procedures were also found to be very limited and lacking in detail. Many were not considered adequate for use by inexperienced teachers. Examples included worksheets with vague instructions that lacked detail and those that include nothing but a title. Other lesson plans contained procedures that were not clearly stated and were difficult to understand:

> "One person goes first and says the number one or one two. Then the other player says the next one or two consecutive numbers. Each player chooses whether to say one or two numbers during each turn. The players continue to alternate turns and say the next one or two consecutive numbers until someone reaches twenty one."

The results of the analysis of the 200 plans found online showed that only 9%, without regard to the level of their quality, could be considered complete lesson plans. It was determined that about 50% had an objective, yet only 30% of those objectives were measurable. Overall, scores on evaluation schemas were also poor. Less than 20% of the lesson plans provided any criteria for evaluation. Few of these were measurable, and many did not match the stated objective of the lesson plan. There were procedures listed on most lesson plans, but only about 70% could be considered complete and comprehensive directions. None of the Internet lesson plans listed all of the materials required for their implementation.

In the second phase of this study, the researcher evaluated the 300 lesson plans submitted by students in the previous semester. The plans were first divided into two groups: those that citied Internet sources and those that did not. Of the 300 plans, approximately 75% cited an Internet source. Approximately 80% of those that included an Internet citation were deemed to be of poor quality. Many of these plans did not state a measurable objective. Evaluation schemas rarely met the goal of evaluating the stated academic objective(s) and frequently measured classroom management instead. The time frames given by the student lesson plans were not realistic to accomplish stated objectives and procedures, and procedural directions were also commonly found to be incomplete or unclear.

Of the 25% of lesson plans that did not cite an Internet source, approximately 60% were evaluated as scoring between good to excellent quality according to the rubric used by the researcher. While the remaining 40% of lesson plans not citing an Internet source were not considered to be of high quality, it is suspected that a significant number used Internet sources but did not cite them.

In the third part of the study, the researcher scored lesson plans which her students retrieved from the Internet, by tallying marks on a chart in her math and science methodology class. The tallies revealed that nearly 100% of the Internet lesson plans that students brought to class contained a title and an appropriate age or grade level. However, while objectives were also listed on many of the lessons, less than 50% could be considered measurable academic objectives. Approximately 70% of the lesson plans listed required materials. However, upon closer inspection only about 35-40% of the plans accurately listed all of the needed materials. Similarly, directions of some manner were provided in almost all lesson plans, but on close review, only

30 to 35% contained directions that a teacher with limited experience in the classroom could easily follow.

Finally, the evaluation schemas were addressed. Fewer than 25% of lesson plans included an evaluation schema or assessment. Of those that did, criteria for evaluation were frequently non-measurable, non-academic, or too vague. "Take up the papers," is one example of the evaluation schema presented by the lesson plans students retrieved from the Internet. Another lesson plan instructed teachers to "record if the student participated or followed directions." The students were constantly asking other members of their groups, "What does this mean?" Only about 7% of the lesson plans students brought to class had an evaluation schema that compared favorably with the examples provided prior to the exercise.

Discussion

While many of the specific results have already been discussed, this section will provide general results in an attempt to answer the research questions and discuss the findings in broader detail.

First, the question regarding whether lesson plans found online reflect the main criteria for high quality lesson plans, was found to provide the most informative results, considering the popularity of the Internet. A related question posed examined whether the timeframes provided by Internet lesson plans were realistic for actually implementing the procedures included in the plans. It was found that the majority of the timeframes were inaccurate. The absence of a realistic timeframe could be critical for an inexperienced teacher in the classroom, and this could lead to other concerns. For example, if the lesson was shorter than expected and the students were left with extra undirected time, discipline problems may result. Conversely, if the lesson were much longer than expected, students either would not get to complete the lesson, or else the lesson would consume time needed to implement other important lessons of the day.

The lack of evaluation schema presented by the lesson plans could also be crucial. It raises the question as to exactly how do the teachers using these lesson plans proceed when it is time to put a mark or grade on a report card or progress report? If students require referral for special assistance, or honors classes, what documentation can teachers who follow these lesson plans provide? In this age of accountability, parents, community stakeholders, and society want to know exactly how students are performing in their mastery of the class material presented to them. Therefore, it is important to be aware of how students' progress will be evaluated and documented.

Overall, the randomly sampled lesson plans from the Internet illustrated a definite need for quality control. Most of the plans examined did not meet the criteria used to judge the quality of lesson plans. This means that all

teachers—regardless of experience—need to be aware that just because information has been published online, it does not guarantee the quality of that information.

The second question posed in this study was whether the lesson plans met state-mandated standards and objectives. Since many of the lessons did not have meaningful, measurable objectives and/or evaluations, those lessons could not be presumed to help students meet performance objectives for any of the state tests such as TAKS.

These results were very surprising to the students who participated in the third part of the study. Prior to evaluating the lesson plans, they had stated repeatedly that they thought since the plan had been published online, it was probably reliable. Consequently, few teacher candidates performed any quality type tests on the lesson plans they found online.

One major result of the activity was that this semester, the lesson plans submitted by the teacher candidates were of much higher quality than they had been in previous semesters. Students also stated that they felt much more prepared for the classroom. They additionally expressed more concern for the need of lessons to address state objectives or NCTM standards. They concluded that if they relied on Internet lesson plans, their students would not be able to master the required skills to pass state tests.

Finally, to address the question of whether the teacher candidates' lesson plans indicated front end analysis/planning rather than indication of concern with the details of numerous design strategies, it was found that the majority of those lesson plans which cited an Internet source indicated neither planning on the front end nor concern for detail. However, students who participated in the third part of the study indicated that they see the importance of doing more planning on the front end of lessons.

Overall, this study determined that the lessons plans found in brief online searches did not meet the quality standards necessary for effective instruction and evaluation. After learning this first-hand, teacher candidates who participated in the study reported an increased appreciation for the value of good lesson plans.

Conclusion

Due to the limited number of Internet lesson plans reviewed, it is impossible to make broad generalizations. However, as the result of the investigation, the researcher believes that each lesson plan should be examined carefully before being implemented into the curriculum. The study concluded that most lesson plans found in quick Internet searches did not meet the standards of quality as measured by the rubric designed by the researcher. Lesson plans found online can, however, be a valuable source of ideas for teachers designing their own lesson plans so long as teachers approach those ideas with an informed critical attitude.

References

Bloom, B. S. (1956). *Taxonomy of educational objectives: handbook 1,
cognitive domain.* Longman, New York.

Cabe, P. A. (1996). ATOMIC: A course and lesson planning mnemonic.
College Teaching, 44, 149-52.

Freiberg, H. J. (2002). Essential skills for new teachers. *Educational
Leadership*, *59*(6), 56-60.

Perez, R. S., Johnson, J. F., & Emery, C.D. (1995). Instructional design
expertise: a cognitive model of design. *Instructional Science*, *23*, 321-
49.

Taylor, P. M., (2000). When are we ever going to use this? Lessons from a
mathematics methods course*. School Science and Mathematics*, *100*(5),
252-5.

Chapter 10

Course Student Satisfaction Results: Differentiation Between Face-to-Face, Hybrid, and Online Learning Environments

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Abstract
This paper is a case study on the implications of face-to-face, hybrid, and online learning environments upon student course satisfaction outcomes. The course instructor, course materials, course documents, course readings, and all other components of the course are exactly the same. The only difference between course sections is the learning environment. A focus upon potential components related to learner support is also addressed, such as self-regulation and interactive activities as social communications and online community development.

Course Student Satisfaction Results: Differentiation Between Face-to-Face, Hybrid, and Online Learning Environments

School leaders need to help teachers create high-achieving learning environments for all students, where the most advanced curriculum and instruction techniques combine to support learning.
(The North Central Regional Educational Laboratory, 1995)

As technology advances, learning environments must also evolve to meet the instructional and environmental requirements of learners. To achieve this result, educators must focus on the appropriate integration of technologies into learning environments in order to sustain and retain learners. The Texas Higher Education Coordinating Board (THECB) affirms that distance education has not reached its full potential:

The increased attention on distance education comes at a time when Texas is embarking on an effort to dramatically

increase participation and success in public institutions of
higher education in Texas.

(THECB, 2000, page 1)

However, the different types of learning environments are not clearly
delineated. There are three primary formats which can be used to design,
develop and implement learning environments:

- Traditional: Face-to-Face Learning Environments
- Web-Enhanced: Hybrid Learning Environments
- Web-Based: Distance or Online Learning Environments

The traditional face-to-face learning environment ensures that instructors
and learners engage in multiple forms of support and communications occur
over a fixed period of time. A "best of both worlds" learning environment
model is the web-enhanced, or hybrid, learning environment, in which the
predominantly face-to-face model connects the learners in a cooperative,
interactive environment that offers online interactive activities. The third
learning environment is the implementation of a web-based learning
environment also known as distance education or online learning. Engaged
entirely online, learners in web-based learning environments lack the
traditional support structure inherent within a face-to-face environment.

Support for Learners

Learning environments, whether face-to-face, web-enhanced or online,
each have their own strengths and areas of improvement. Therefore, it is
important that instructors understand the mechanisms of self-regulation that
are vital to the success of their students in each of the learning environments.
The THECB suggests that learners within distance education learning
environments:

…require(s) a disciplined approach by students. Participants
stated that the instruction and interaction between faculty
and student become more personalized and better meet the
student's needs. On the other hand, the interaction is less
situationally structured, placing more responsibility on the
student to keep up with the lessons, the activities, and the
homework.

(THECB, 2000, page 8)

This supports the idea that distance learning environments necessitate the
development of more clearly and integrally woven self-regulatory support
mechanisms in learners.

Self-Regulation

Engaging learners within any learning environment is important. A learner must develop the ability to focus while in the process of learning. Holmberg suggests that the learner is the center of learning: "A basic general assumption is that real learning is primarily an individual activity and is attained only through an internalizing process" (1995, p. 47). Therefore, principles related to self-regulation have been studied (Corno & Mandinach, 1983; Zimmerman, 1989, 1990, 1994; Bandura, 1991; Schunk, 1994). However, this research area has not yet been well defined. A body of research suggests that this area is a combination of cognition and motivation (Pintrich, 1989; Pintrich & De Groot, 1990; Zimmerman, 1990; Garcia, 1995), while McManus (1995) poses the theory that self-regulation engulfs a much larger scope: "Given the broadest definition, self-regulated learning is an amalgam of numerous cognitive, metacognitive, motivational, and social factors which effect how a learner approaches learning" (McManus, 1995, paragraph 3). The question still remains: what is self-regulation?

According to Schunk & Zimmerman (1997), "Self-regulation refers to the use of processes that activate and sustain thoughts, behaviors, and affects in order to attain goals." As such, the distance learner must be able to successfully exhibit the ability to scrutinize his or her own level of performance as well as review and evaluate his or her progression toward meeting the learning objectives.

Student Evaluations of the Instructor

While the primary focus within learning environments is upon learners, the reality of the educational world is that students evaluate the instructional abilities of faculty on a semester-by-semester basis. As web-based (totally online) and web-enhanced (hybrid) distance education has been an area of exponential growth over the past 15 years, it is important to consider the impact of distance education upon learners. One way in which it is possible to concentrate on the impact of web-based or web-enhanced education upon learners, as well as the success of instructors, is through mandated student evaluation opportunities within higher education coursework. Therefore, it is appropriate to conduct a preliminary study that examines the potential influence of learning environments upon students' evaluations of their course instructor(s).

Method

Sample

The sample consisted of graduate students enrolled in the graduate course selected for the case study. The course used in the study was a required prerequisite course taken by graduate students within the first semester of graduate study. As such, the subjects were not randomly selected for the study. The students then elected whether or not to complete and submit student evaluations of the course instructor at the end of the semester.

The graduate course student evaluations were obtained from 3 face-to-face course sections, 8 web-enhanced (hybrid) course sections, and 11 totally online course sections from the Fall 1999 semester through the Fall 2005 semester. It is essential to state that the course instructor, course learning objectives, course assessments, texts, assignment deliverables and all available handout information were exactly the same throughout all sections of the courses in the study. The only difference between the various sections of the course was the type of learning environment: face-to-face, hybrid, or online.

Instrument

The instrument used in this study was the student evaluation survey form provided by the university's School of Education. Each student evaluation form focuses upon the areas of concentration presented in Table 1. The responses to each statement were recorded on a 5-point Likert Scale, with "1" being the lowest response rating available and "5" being the highest response rating available.

Table 1
Student Evaluation Form Questions: School of Education's Course Evaluation

KNOWLEDGE

1. Instructor provided a well-organized course
2. Instructor provided well-prepared materials
3. Instructor addressed questions effectively
4. Instructor provided a comprehensive course syllabus
5. Instructor provided purposeful course objectives that were consistent
6. Instructor clearly explained the course requirements
7. Instructor provided assignments consistent with objectives
8. **Overall, this course was a valuable learning experience**

INSTRUCTIONAL STRATEGIES

9. Instructor used technology/instructional aides effectively

10. Instructor provided current and relevant materials
11. Instructor provided clear explanations of course content
12. Instructor used methods relevant to course objectives
13. Instructor provided materials in a stimulating way
14. Instructor appreciated the value of humor in instruction
15. Instructor created supportive learning environment
16. Instructor encouraged student participation
17. **Overall, instruction of course was relevant to course objectives**

EVALUATION/ASSESSMENT TECHNIQUES

18. Instructor was accessible to students
19. Instructor provided clear grading criteria
20. Instructor encouraged student improvement via challenging experiences
21. Instructor used a variety of assessment techniques
22. **Overall, instructor was fair in evaluating my progress**

_____

The student evaluation responses of direct import for annual faculty evaluations are the following:

8. Overall, this course was a valuable learning experience
17. Overall, instruction of course was relevant to course objectives
22. Overall, instructor was fair in evaluating my progress

No reliability and validity data were available regarding the statements, which were generated for the purpose of student evaluations of course instructors.

Procedures
In each course, course instructor evaluations were offered. Evaluations took place within the last two weeks of the course. Instructors were neither involved in the evaluation process nor permitted in the vicinity while students completed the evaluations. Nor were instructors permitted to handle the student evaluation documents prior to, during, or after completion. As such, the course instructor did not have the opportunity to manipulate the results of the student evaluations. Responses to the evaluations were recorded by university administration, and a summary report of the results was given to the instructor of the course.

Data Analysis

To assess the difference between learning environments (face-to-face, hybrid, or online) as reported by student evaluations, item means were calculated from the summarized data presented to the course instructor in the form of student evaluation reports. In addition, the means and standard deviations were calculated to examine the ways in which students viewed the course instructor within each distinct learning environment. Although the course instructor; course objectives; course assessment deliverables and assessment rubrics; course documentation; and other aspects of the course were exactly the same within each type of learning environment, the difference in learning environments was the one differentiating factor.

The data analyzed were student evaluations for one prerequisite graduate course, offered repeatedly from the Fall 1999 semester through the Fall 2005 semester. The course was rewritten for the Spring 2006 semester and, as such, does not reflect the learning objectives, assessments, or unit information that was reflected through the original course content from Fall 1999 through Fall 2005.

Results

The results of this preliminary case study suggest that the instructor's performance within the "Knowledge" category was stronger in the online learning environment. Course evaluations showed the instructor's performance in the area of "Knowledge" was viewed to be the weakest by students in the face-to-face environment. Yet, the web-based student evaluations ranked the instructor lowest in the area of "Instructional Strategies." The ranking of the results of the student evaluations are shown in Table 2. The "Rank" is from highest (1) to lowest (22) of means. Area 1 represents questions corresponding to "Knowledge." Area 2 corresponds with "Instructional Strategies." Area 3 relates to "Evaluation/Assessment Techniques."

Table 2
Face-to-Face, Web-Based and Web-Enhanced Student Evaluation Item Rankings

Question	Area	Face-to-Face Mean	Rank	Web-based Mean	Ran	Web-enhanced Mean	Rank
Q01	1	4.00	21	4.53	8	4.52	13
Q02	1	4.15	19	4.40	14	4.43	19
Q03	1	4.30	14	4.33	16	4.51	14
Q04	1	4.36	9	4.59	7	4.63	5
Q05	1	4.36	10	4.63	3	4.57	9
Q06	1	4.10	20	4.49	12	4.48	16
Q07	1	4.42	5	4.62	4	4.55	10
Q08	**1**	**4.27**	**17**	**4.61**	**5**	**4.58**	**7**
Q09	2	4.38	7	4.60	6	4.52	11
Q10	2	4.27	16	4.31	18	4.50	15
Q11	2	3.94	22	4.44	13	4.38	20
Q12	2	4.29	15	4.52	9	4.52	12
Q13	2	4.15	18	4.30	20	4.47	17
Q14	2	4.33	12	4.23	22	4.73	1
Q15	2	4.40	6	4.31	17	4.57	8
Q16	2	4.60	1	4.27	21	4.62	6
Q17	**2**	**4.38**	**8**	**4.52**	**10**	**4.63**	**4**
Q18	3	4.47	4	4.30	19	4.27	22
Q19	3	4.35	11	4.71	1	4.67	2
Q20	3	4.30	13	4.50	11	4.47	18
Q21	3	4.48	3	4.36	15	4.34	21
Q22	**3**	**4.59**	**2**	**4.65**	**2**	**4.65**	**3**
Mean		4.31		4.46		4.53	
Std		0.17		0.14		0.11	
Range		0.67		0.48		0.46	
Median		4.34		4.50		4.52	

Face-to-face courses provided the lowest scores for five (Q1, Q2, Q3, Q6, Q8) of the eight items in "Knowledge." Web-based courses gave the highest scores to five (Q1, Q4, Q5, Q7, Q8) of the eight items in "Knowledge," and gave the lowest scores to five (Q11, Q13, Q14, Q15, Q16) of the nine items in "Instructional Strategies."

As such, the following table (Table 3) displays the number of questions that led to student evaluation results below the median, as based on the survey delineation corresponding to the areas of knowledge, instructional strategies and evaluation/assessment techniques:

Table 3
Below Median Student Evaluation Response Counts

	Face-to-Face	Web-Based	Web-Enhanced
1 – Knowledge	5	3	4
2 – Instructional Strategies	5	6	4
3 – Evaluation/Assessment Techniques	1	2	3

Further, Table 4 defines the number of questions that resulted in evaluation responses above the median, delineated by the areas of knowledge, instructional strategies and evaluation/assessment techniques:

Table 4
Above Median Student Evaluation Response Counts

	Face-to-Face	Web-Based	Web-Enhanced
1 – Knowledge	3	5	4
2 – Instructional Strategies	4	3	5
3 – Evaluation/Assessment Techniques	4	3	2

Therefore, the following statements may be made:

- Question 8 is ranked 17th in face-to-face but 5th in web-based and 7th in web-enhanced.
- Question 18 is ranked 4th in face-to-face but 19th, and 22nd in web-based and web-enhanced respectively.
- Question 21 is ranked 3d in face-to-face but 15th, and 21st in web-based and web-enhanced respectively.
- Question 16 is ranked 1st in face-to-face but 21st in web-based.
- Question 1 is ranked 21nd in face-to-face but 8th in web-based.

Also of interest is the ranking of the three questions in the student evaluation surveys that directly impact the instructor's annual reviews in the area of teaching. Table 5 delineates the ranking within the areas of face-to-face (F2F), web-enhanced (hybrid) and web-based (online) course offerings.

Table 5
Student Evaluation Response Ratings that Impact Instructor Annual Reviews

Category with Delineating Question	Ranking		
	F2F	Hybrid	Online
Knowledge: Q8 Overall, this course was a valuable learning experience	17	7	5
Instructional Strategies: Q17 Overall, instruction of course was relevant to course objectives	8	4	10
Evaluation/Assessment Techniques: Q22 Overall, instructor was fair in evaluating my progress	2	3	2

Based upon the intriguing results offered through this preliminary study, areas of additional awareness are articulated.

Discussion

Distance Education

Distance education has become a significant area of interest throughout K-12 education, higher education, medical education, business and industry training, aeronautics training and military fields. The THECB (2000) presented explicit objectives toward which the employment of efforts should occur throughout the State of Texas:

- Lower the cost of distance education technology
- Provide incentives for collaboration between institutions to reduce the inefficient use of distance learning resources
- Integrate distance education as a legitimate faculty function

Further, it was also noted that the State of Texas must also focus to:

- Support partnerships that make computers and the internet more accessible
- Continue to help Texans become technologically literate
- Focus on distance education opportunities that respond to the needs of Texans

Even though these goals were clearly outlined by the THECB, the methods towards the accomplishment of these goals were not procedurally agreed upon. In order to fill the need for explicit definition of objectives to support online and hybrid learning environments, and to help guide online course design and development, several standards have been developed (U.S. Department of Education, 2006; National Education Association, 2000; Inglis, 2005; Mariasingam, 2005; North American Council for Online Learning, 2006; Achtemeier, Morris & Finnegan, 2003; Ragan, 1999; Chickering & Gamson, 1987; American Federation of Teachers, 2000); however, it is important to note that these standards have not been formatively, nor summatively evaluated within a real-world instructional environment. This case study aims, in a preliminary way, to fill this gap by identifying areas of strength as well as those requiring further study.

Learning Environments

The shifting needs of students have necessitated the growth of different learning environment options, yet the strengths of the instructors within the different learning environments must also be considered. Instructors must be able to design and directly impact the success of learners within their respective learning environments. Traditional instructor strengths may not easily shift into a different learning environment. Instructors must become cognizant of different learning environment components that are integral to the success of the learner. Therefore, consideration must be offered toward appropriate training for online instructors.

> Not only are the demands upon the learner outside the actual learning environment significantly different, but the conceptual framework of understanding as it relates to life experiences of the learners are significantly different.
> <div align="right">(Crawford & Gannon-Cook, 2007)</div>

Therefore, it is appropriate to emphasize the analysis of the suitability and effectiveness of the learning environment to the learner, no matter whether the learning environment is face-to-face, hybrid or totally online.

Integration of Technology

As the focus of this preliminary study is upon the student evaluations of the instructor within face-to-face, hybrid, and online learning environments, the importance of the successful integration of instructional technologies into learning environments must be stressed:

> Although many, if not most, institutions are encouraging faculty to incorporate technology into their curricula, there

are few incentives, except personal ambition, to produce a distance learning course. Producing a distance education course requires a substantial amount of time and knowledge of the technology, and there is no apparent advantage for faculty to pursue these labor-intensive activities. Indeed, there may be a great disadvantage: distance education activities may interfere with activities for which faculty are currently evaluated (e.g., teaching load, student-related activities, generation of research funds, publications, or public service).

<div align="right">(THECB, 2000, page 6)</div>

Faculty are concerned about measures of their success when teaching non-traditional coursework in a traditional learning environment. Teaching within hybrid and online learning environments is considerably different from teaching traditional courses. Other concerns to faculty result from lack of support or compensation for intellectual property rights, as well as unfamiliarity with appropriate online use of instructional and facilitative methods associated with non-traditional courses. To this end, educational institutions need to consider how to manage the development of faculty skills required for successful non-traditional teaching. For example, interactive activities are an important element of any learning environment, but within hybrid and online learning environments these interactive activities must be directly designed and implemented, with the following delineation of activities:

- Learner-content, learner-instructor, learner-learner (Moore, 1989)
- Learner-interface (Hillman, Willis & Gunawardena, 1994)
- Learner-self, instructor-content, instructor-interface, instructor-community (Crawford, 2001)
- Learner-community (Burnham & Walden, 1997)
- Instructor-self (Crawford, 2001; 2003)

Each of these aspects impacts the success of the instructor within the non-traditional learning environment and in turn directly affects the student's evaluation of the instructor.

Student Evaluations

Student evaluations are one way to evaluate the success of course instructors within face-to-face, hybrid and online learning environments. Whether or not one evaluation instrument should be implemented across different learning environments is a concern. Given the significant

instructional differences between face-to-face, hybrid and online learning environments, is one student evaluation instrument appropriate for instructors across all learning environments? The findings of this preliminary study show that learners may perceive a significant difference in instructional and communicative skills, dependent upon the learning environment implemented. The results of this study suggest the need for additional skills training to more appropriately prepare instructors with the skills necessary for success within a hybrid or online learning environment. No matter the strengths of the traditional instructor, the needs of the learner within hybrid and online learning environments necessitate a more careful consideration of instructional design and implementation of online courses, as this has a direct impact upon student evaluations of the course instructor.

Conclusion

Although this is merely a preliminary study, the implications for future research are of interest. This study suggests that students may have different or additional needs within an online learning environment. Student evaluations may also require further inspection so as to appropriately address differing instructional requirements. Additionally, instructors may have distinctive strengths within various learning environments. Instructor training may require a focus upon particular skills and aspects of facilitation within these different learning environments. Yet, only through further investigation will the preliminary results presented by this initial study be extended towards a more generalized audience.

References

Achtemeier, S. D., Morris, L. V., & Finnegan, C. L. (February 2003). Considerations for Developing Evaluations of Online Courses. *Journal of Asynchronous Learning Networks (7)*1. The Sloan Consortium. Retrieved on July 28. 2008, from http://www.sloan-c.org/publications/jaln/v7n1/v7n1_achtemeier.asp

American Federation of Teachers, Higher Education Program and Policy Council. (May, 2000). Distance Education: Guidelines for Good Practice. Retrieved on July 28, 2008, from http://www.aft.org/pubs-reports/higher_ed/distance.pdf

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes,50,* 248-287.

Burnham, B., & Walden, B. (1997). Interactions in distance education: A report from the other side. In *Proceedings of the Adult Education Research Conference*. Oklahoma State University. Available: http://www.edst.educ.ubc.ca/aerc/-1997/97burnham.html

Chickering, A. W., & Gamson, Z. F. (March 1987). *Seven Principles for Good Practice in Undergraduate Education*. The American Association for Higher Education Bulletin. Retrieved on July 28. 2008, from http://honolulu.hawaii.edu/intranet/committees/ FacDevCom/guidebk/teachtip/7princip.htmCorno L., & Mandinach, E. B.(1983). The role of cognitive engagement in classroom learning and motivation. *Educational Psychologist, 18*, 88-108.

Corno, L., & Mandinach, E. B. (1983). The role of cognitive engagement in classroom learning and motivation. *Educational Psychologist, 18(2),* 88-108.

Crawford, C. M. (2001). Developing webs of significance through communications: Appropriate interactive activities for distributed learning environments. *Campus-Wide Information Systems Journal (CWIS), 18*(2), 68-72.

Crawford, C. M. (2003). Emerging learning environments: Enhancing the online community. *Academic Exchange Quarterly 7*(4), page 131-135.

Crawford, C. M., & Gannon-Cook, R. (2007). Humanizing the changing face of distance learning: as reflected through the emerging potentials for equity, social justice and social change. *The International Journal of Learning (14)* 1, 145-159. Melbourne, Australia: Common Ground Publishing Party Limited.

Garcia, T. (1995). The role of motivational strategies in self-regulated learning. In P.R. Pintrich (Ed.), *New directions for college teaching*

and learning: Self-regulated learning in the college classroom (pp. 29-42). San Francisco: Jossey-Bass.

Hillman, D., Willis, D.J., & Gunawardena, C. (1994). Learner-interface interaction in distance education: An extension of contemporary models and strategies for practitioners. *American Journal of Distance Education, 8*(2), 30-42.

Holmberg, B. (1995). *Theory and practice of distance education*. London: Routledge.

Inglis, A. (2005). Quality Improvement, Quality Assurance, and Benchmarking: Comparing two frameworks for managing quality processes in open and distance learning. *The International Review of Research in Open and Distance learning (6)* 1. Retrieved on July 28, 2008, from
http://www.irrodl.org/index.php/irrodl/article/view/221/867

Mariasingam**,** M. (2005). *Findings of the Delphi Study on Qualitative Criteria and Benchmarks for Online Degree Programs*. Retrieved on July 28, 2008, from http://www.odlaa.org/
resources/DelphistudyResultsSummary.pdf

McManus, T. F. (1995). *Testing learner self-regulation in a web based learning environment*. Retrieved from the World Wide Web on January 1, 2003: http://www.edb.utexas.edu/
mmresearch/Students96/McManus/srltest.html

Moore, M. (1989). Three types of interaction. *The American Journal of Distance Education, 3*(2), 1-7.

National Education Association. (March 21, 2000). *NEA and Blackboard Inc. Study Finds 24 Measures of Quality in Internet-Based Distance Learning*. Retrieved on July 28, 2008, from
http://www.nea.org/nr/nr000321.html

North American Council for Online Learning. (2006). *National Standards of Quality for Online Courses*. Retrieved on July 28. 2008, from
http://www.nacol.org/nationalstandards/
NACOL%20Standards%20Quality%20Online%20Courses%202007
.pdf

North Central Regional Educational Laboratory. (1995). *Critical Issue:Creating High-Achieving Learning Environments*. Retrieved December 25, 2005, from
http://www.ncrel.org/sdrs/areas/issues/educatrs/leadrshp/le400.htm

Pintrich, P.R. (1989). The dynamic interplay of student motivation and cognition in the college classroom. In C. Ames and M. Maehr (Eds.), *Advances in motivation and achievement: Motivation-enhancing environments* (Vol. 6, pp. 117-160).Greenwich, CT: JAI Press.

Pintrich, P. R., & De Groot, E. (1990). Motivational and Self-Regulated Components of Classroom Academic Performance. *Journal of Educational Psychology*, 82, 33-40.

Ragan, L. C**.** (1999). Good Teaching is Good Teaching: An Emerging Set of Guiding Principles for the Design and Development of Distance Education, *CAUSE/EFFECT Journal* (22) 1. Retrieved July 28, 2008, from http://net.educause.edu/ir/library/html/cem/cem99/cem9915.html

Schunk, D. H. (1994). Self-regulation of self-efficacy and attributions in academic settings. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulation of learning and performance: Issues and educational implications* (pp. 75-99). Hillsdale, NJ: Erlbaum.

Schunk, D. H., & Zimmerman, B. J. (1997). Social origins of self regulatory competence. Educational Psychologist 32(4), 195-208.

Texas Higher Education Coordinating Board (THECB). (September 2000). *Report on a Study of Access to Higher Education Through Distance* Education. Retrieved on August 14, 2007, from http://www.thecb.state.tx.us/reports/PDF/0315.PDF

U.S. Department of Education (March 2006). *Evidence of Quality in Distance Education Programs Drawn from Interviews with the Accreditation Community*. Retrieved on July 28, 2008, from http://www.ysu.edu/accreditation/Resources/Accreditation-Evidence-of-Quality-in-DE-Programs.pdf

Zimmerman, B. J. (1989). A social Cognitive view of self-regulated academic learning. *Journal of Educational Psychology, 80*, 329-339.

Zimmerman, B. J. (1990). Self-Regulated Learning and Academic Achievement: An Overview. *Educational Psychologist, 25*, 3-17.

Zimmerman, B. J. (1994). Dimensions of academic self-regulation: A conceptual framework for education. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulation of learning and performance: Issues and educational implication*s (pp. 3-21). Hillsdale, NJ: Erlbaum

Chapter 11

An Examination of the Effectiveness of a University's Developmental Reading Class

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Abstract

This study examines the effectiveness of a developmental reading class at Texas A&M University Corpus Christi. The developmental reading class is mandatory for those students who did not pass the state mandated THEA test. The transcripts of 565 students enrolled in READ 0399 between 2001 and 2006 were analyzed to determine what happened to those students. Results indicate that the majority of the students enrolled in the course did pass the THEA upon retesting. The results also indicate that 30% of the students either stayed in school or graduated.

An Examination of the Effectiveness of a University's Developmental Reading Class

College developmental reading programs can be traced back as early as 1941. It was not until the 1960s, however, that they became widespread in the United States (Laine, Laine, & Bullock, 1999). This was, in part, due to the establishment of open enrollment policies that prompted colleges and universities to focus on serving the needs of underprepared students. Educating these underprepared students has become known as developmental education (Dotzler, 2003).

Johnson, & Carpenter (2000) note that over the years, developmental college courses have taken many different forms, all of which have been aimed at assisting students who are frequently underprepared for college. In the 1960s, developmental education focused on two different groups: those who needed academic compensation and those who needed academic remediation. Students who were non-English speaking or who had waited several years before enrolling in college required compensatory education, or help to compensate for their particular situations. In addition, some developmental courses were offered to develop the academic talents of students while supporting their learning. These classes frequently focused on

developing the study skills of students and assisting them with coursework from academic courses.

The second group of students in developmental education models of the 1960s was those academically underprepared for traditional college coursework. This category of developmental courses, which Johnson, & Carpenter (2000) label "remedial," assisted students who were educationally deficient in reading, writing or mathematics. These remedial courses were frequently mandatory for students who scored poorly on standardized tests. In order to enroll in additional coursework, students had to first successfully complete these courses. They often received no credit hours toward graduation for completing the remedial course; however, the course would count toward their overall course load and grade point average (GPA). Dotzler (2003) and Johnson & Carpenter (2000) report that universities today continue to offer both types of developmental courses as well as some courses that combine the two categories.

Information on the success rates of developmental reading courses, regardless of their form or function, is limited. While some analyses of program effectiveness exist (Cox, Friesner, & Khayum, 2003; Laine, Laine, & Bullock, 1999; Taraban, 1997). However, hard data have been difficult to locate, despite calls for program reviews that examine the success of different programs (Boylan, Bonham, White, & George, 2000).

In 1988, the Texas Legislature passed legislation that created the Texas Academic Skills Program (TASP). The intent of this program was to ensure that all college students had the academic skills necessary to succeed in college level work. All college students enrolling in Texas public universities, colleges, and community colleges needed to meet specific scores on tests of reading, writing, and mathematics skills. The reading section was a diagnostic test that consisted of passages and questions developed by National Evaluations Systems (NES). In 2003, TASP became the Texas Higher Education Assessment (THEA) under Senate Bill 286, Texas Education Code, Section 51.3062: Texas Success Initiative. The THEA replaced the TASP test; however, the content of the test remained the same.

The THEA consists of approximately 40 multiple-choice questions matched to seven reading passages of 300 to 750 words each. The THEA Test Registration Bulletin states, "The reading selections represent a variety of subject areas and are similar to reading materials (e.g. textbooks, manuals) that students are likely to encounter during their first year of college" (National Evaluations Systems, 2007, p. 3). Students enrolling in a Texas public college or university are required to either score at least 220 on the reading subtest or achieve a comparable score on alternative measures such as the SAT or ACT. Students who do not pass the THEA are required to receive corrective assistance until they demonstrate the ability to succeed

in college level work. Students seeking admission to Texas educator preparation programs are also required to demonstrate college level skills. One way to demonstrate those skills is to achieve a specific score on the THEA.

Texas A&M University-Corpus Christi (TAMUCC) is a regional university. In 1994, TAMUCC changed from an upper-division university to a four-year school and admitted its first freshmen and sophomores. To meet the needs of the new students, the first developmental reading class was offered in the fall of 1996. The developmental reading class was essentially a tutoring class staffed by graduate assistants. Enrollment in these classes was initially small, and tutoring was coordinated with the Student Learning Center on campus. Between 1996 and 1999, enrollment at the university increased from 3,000 to over 5,000 students. Accordingly, the number of students needing to retake the TASP test increased as well. Individual tutoring was no longer a feasible option, and alternatives were sought. The university's administration, however, was committed to offering a TASP remediation course.

In a 1998 planning meeting, the Reading faculty at TAMUCC decided to offer a class to help TASP liable students pass the TASP. Beginning in the fall of 1999, in response to requests from different levels of the university, multiple sections of developmental reading were offered in a traditional class format for students who had not scored 220 or higher on the TASP. Attendance would be mandatory and monitored by the student learning center. Given the pragmatics of the situation, the reading faculty felt that they were best qualified to design and offer such a course. To facilitate the development of the course, a person who had extensive experience in developmental reading assumed the lead in arranging the course.

The primary focus of the class became instruction in developing vocabulary, practice with reading materials similar to the materials of the TASP/THEA, and becoming familiar with the test format. Since university policy stated that developmental courses would not count toward graduation, a policy was in place wherein students who had taken and passed the TASP/THEA and who were receiving a B grade or better in the class could stop coming to class. This practice existed in the remedial courses in writing and mathematics as well.

Method

Participants

The participants in this study were 565 students who had been assigned to a developmental reading course, READ 0399, because they had not obtained a passing score on the THEA test. The investigators identified the names of all the professors who had taught READ 0399 between the fall of

2001 and fall of 2006 and used the class rosters to identify all students enrolled in READ 0399 for that period.

Fall 2006 was chosen as the cutoff for the study for two reasons: 1) the policy of "B or better" in the READ 0399 class was changed, with students now being required to complete the course whether they passed the THEA or not; and 2) university policy regarding mandatory monitored attendance of TASP/THEA liable students was discontinued.

At least 19 students took the READ 0399 class to help them achieve a higher score (260) for admittance to Teacher Education Program. During the transcript analysis (described in the next section), a small number of students appeared who had been admitted to the university, completed 60 semester hours or more, were enrolled in READ 0399, and retook the THEA. These students, for the most part, had GPAs of 2.0 or higher. The Texas legislation established the THEA as a screening instrument for admittance to any Texas teacher education program. Each college or teacher preparation program could set a score at or above that set for admittance to a university. The College of Education at TAMUCC established a THEA score of 260 for admittance to the Teacher Education Program. Consequently, 19 students enrolled voluntarily in the READ 0399 class to prepare for retaking the THEA.

Data Collection

The investigators examined each of the 565 students' university transcripts to find the following data:

- Total number of semester hours which the student had successfully completed at TAMUCC
- GPA achieved by the student
- Whether the student was still enrolled
- Whether or not the student had graduated
- Whether or not the student had eventually passed the THEA
- What score the student achieved on the THEA

The investigators chose to inspect and obtain the data from students' transcripts themselves instead of relying on the University data banks and administrative offices. It was felt that by obtaining and examining each student's transcript, the researchers could obtain the needed information and also discover other trends. The data were recorded onto a spreadsheet and visually examined. This information was then entered into SPSS and analyzed for descriptive measures.

Results

Of the 565 developmental students who retook the THEA, 381 passed (68.2%). 178 had not passed when the transcripts were examined (31.5%), and six could not be confirmed as passing or not passing (1.1%). Only 38 of the 565 students (6.7%) who took the READ 0399 course had graduated at the time the transcripts were analyzed, while a total of 173 students (30.6%) had either graduated or were still enrolled in the university. It was found that of the 381 students who passed the THEA, 163 (43%) students were still enrolled in the university two years later.

Table 1 shows that 149 students enrolled in READ 0399 withdrew the same semester that they took the course. Of that number, 40 had passed THEA and 109 had not. Another 220 students withdrew at the end of the first scholastic year; 132 who had passed THEA and 88 who had not. During the second scholastic year, 35 students who had passed the THEA test and 2 who had not withdrew from school. In the third year, 10 students withdrew, 9 of whom had passed the THEA. In the fourth year, 19 students withdrew, including one student who had not passed the THEA. In total, 435 of the 565 students enrolled in READ 0399 withdrew from the university.

Table 1
Number of Passing and Non-passing Students Who Withdrew and When They Withdrew After Completing READ 0399

	Same semester	Within 1 year	Within 2 years	Within 3 years	Within 4 or more years
Passed THEA	40	132	35	9	18
Did Not Pass THEA	109	88	2	1	1
Total	149	220	37	10	19

Table 2 examines the question of whether there is a difference in GPA between those who passed the THEA and those who did not. The table shows that the grade point average increases as the passing rate increases. Of the 135 students with a grade point average of 0-.99 who took the THEA, 45 passed and 90 did not. Of the 153 students with grade point averages between 1.0-1.99, 96 passed and 57 did not. For those with a grade point average between 2.0-2.99, 197 passed and 31 did not. From category one (GPA of 0-.99) to five (GPA of 4.00), the percentage of those who did not pass the THEA steadily decreases to 0%. Of the 271 students who had a 2.0 or higher grade point average, 240 passed the THEA (89% pass rate).

Table 2
A Comparison of the Grade Point Averages of Those Students Who
Passed the THEA with Those Who Did Not Pass the THEA.

GPA	0-0.99	1.0-1.99	2.0-2.99	3.0-3.99	4.0
Pass THEA	45	96	197	41	2
Did Not Pass THEA	90	57	31	0	0
Total	135	153	228	41	2

Table 3 indicates that the more semester hours students had completed when they took the THEA, the higher the pass rate. Of those who took the THEA with 0-29 semester hours, otherwise considered one standard scholastic year, 197 (55%) passed the THEA. Of those who took the THEA with 30-59 semester hours, 68 (86 %) passed the THEA while 11 did not. Of the 47 students who took the THEA with 60-89 semester hours, 43 students (91%) passed and 4 did not. In the 90-119 semester hour category, 36 of the 37 students passed (97%) and 1 did not. The last category contains those who took the THEA with more that 120 hours completed. In this group, 37 passed (95%) and 2 did not.

Table 3
Number of Semester Hours completed when Student took THEA and
Results

Semester Hours Completed	0-29	30-59	60-89	90-119	120+
THEA Pass	197	68	43	36	37
THEA Fail	160	11	4	1	2
Total	357	79	47	37	39
Percentage Passed	55%	86%	91%	97%	95%

There were eight different professors for READ 0399 during the time examined by this study. The final question posed in this study was whether differences between professors influenced the pass rates of the students. The number of sections of READ 0399 taught by each professor varied considerably. They ranged from a high of 20 sections taught over 14 semesters to a low of 1 section during one semester. Due to the large variation in the number of classes taught and the number of students taught, no additional analysis was done to answer this question.

Discussion

The purpose of this study is to examine the effects of a developmental reading class that focused on preparing college students who had not passed

the THEA. The data gathered is subject to various limitations. First, the only students studied were those enrolled at TAMUCC. The records to which the researchers had access only included coursework at TAMUCC. Since there was no feasible way to determine whether students continued their education at another institution, the numbers presented here may not accurately reflect what happened to the students. Second, the data spans five years. A longer longitudinal study may provide different findings.

With these limitations in mind, the results indicate that for the majority of those college students required to pass the THEA, the READ 0399 class appears to have fulfilled its primary function; 381 of the 565 students in this study pass the THEA. Due to the absence of a control group, it is not possible to know whether this majority was the direct product of READ 0399 or whether other factors led to the results.

At this time, it is difficult to make inter-institutional comparisons because no comparable data were found from other institutions on the effect of their developmental reading courses on the THEA pass rates of their students. Comparisons would be further complicated by the fact that other Texas institutions offer a series of leveled developmental reading classes, while TAMUCC offers only one class designed to prepare students for the THEA.

Of those students who took the course, only 6.7% had graduated at the time of the data analysis; however, this number may be an underestimation. As mentioned above, the number of students who passed the THEA, transferred to another university, and graduated from that school is unknown. It is reasonable to assume that at least some of the students involved in this study went on to other institutions and eventually graduated. This reasoning is supported by a study conducted by the Massachusetts Board of Higher Education (2007), which reported a 12.7% graduation rate for those who took at least one developmental course. Additionally, because this study covers a five-year period, and a minimum of four years are required for graduation, many of the students who had taken the class and passed the THEA were still enrolled in the university but had not yet graduated. It was found that 29% percent of the READ 0399 students who participated in the study were still enrolled in the university two years later.

In contrast to the 30.6% of students who enrolled in READ 0399 and either graduated or were still in school, the graduation rate for students enrolled at TAMUCC as non-developmental freshmen is approximately 40% (P. Orser, TAMUCC's Office of Planning and Institutional Effectiveness, personal communication, March 3, 2008). Furthermore, when the 150 students who withdrew the same semester are combined with the 192 who withdrew within the first year, 342 or 60.5 % of the students who enrolled in READ 0399 were no longer enrolled after one year. This number may be contrasted with the overall withdrawal rate of 30% for all entering freshmen

at TAMUCC by the end of the first year and 50% of students by the sophomore year (P. Orser, TAMUCC's Office of Planning and Institutional Effectiveness, personal communication, March 3, 2008). The results of this study indicate that developmental reading students, whether they pass the THEA or not, are more likely to withdraw from the university within one year of taking the developmental reading course. However, this difference is not unexpected. Historically, students who take developmental reading classes are classified as being underprepared or "at risk" for early withdrawal from higher education (Jones & Becker, 2002; Maxwell, 1997).

The GPA at the end of the semester when students passed the THEA appeared to be relevant. Students with higher GPAs were more likely to pass the THEA. Likewise, the number of semester hours completed prior to retaking the THEA showed a relative trend in terms of student pass rates. As mentioned in the methods section, some students voluntarily enrolled in READ 0399 to improve their performance on the THEA and thereby increase their chances of being admitted into teacher education programs. These students tended to have more credit hours and a GPA of 2.0 or higher. Transfer students were a second group that influenced the trend toward more credit hours and a higher THEA pass rate. The THEA was mandatory for students transferring from out of state institutions. If they did not pass the THEA upon coming to TAMUCC, they were enrolled in READ 0399. The number of actual transfer students could not be determined because the advisor transcripts examined for this study only showed Texas A&M University-Corpus Christi coursework and a partial listing of courses taken at other institutions. While it is likely that these two groups had some influence on the overall results, there is a definite trend ranging from a low of 55% of students passing the THEA when they had completed 30 or fewer semester hours to a 96 % pass rate for students who had completed 90 or more semester hours.

Different authorities have indicated that underprepared college students require a support structure to succeed academically. This support structure can take various forms, but it needs to be able to assist students in making the transition into university life (Johnson & Carpenter, 2000; Jones & Becker, 2002; Maxwell, 1997). Students enrolled in READ 0399 are no exception. While READ 0399 appears to have helped students pass the THEA, the low student graduation rate and relatively high dropout rate of those students indicate that they need more transitional support than a one-semester class focusing on passing a mandatory state test. Based on the results of this study, it is clear that while the state THEA test might be able to identify at-risk students and a mandatory remediation class might help them pass the test, additional support is needed for those students to succeed in college.

References

Boylan, H. R., Bonham B. S., White, J. R., & George, A. P. (2000). Evaluation of college reading and study strategy programs. In R. F. Flippo, & D. C. Caverly (eds.), *Handbook of college reading and study strategy research*. Mahwah, NJ: Lawrence Erlbaum Associates.

Cox, S. R., Friesner, D. L., & Khayum, M. (2003). Do reading skills courses help underprepared readers achieve academic success in college? *Journal of College Reading and Learning*, *33*(2), 170-196.

Dotzler, J. (2003). A note on the nature and history of post-secondary developmental education in America. *Math and Computer Education*, *37*(1), 121-125.

Johnson, L. L., & Carpenter, K. (2000). College reading programs. In R. F. Flippo, & D. C. Caverly (Eds.), *Handbook of college reading and study strategy research*. Mahwah, NJ: Lawrence Erlbaum Associates.

Jones, R., & Becker, K. (2002). Getting prepared for the underprepared. *The Mentor*. *4*(2). Retrieved on February 26, 2008, from http://www.psu.edu/dus/mentor/020415rj.htm

Laine, M., Laine, C. H., & Bullock, T. L. (1999). Developmental reading in the United States: One decade later. *Research & Teaching in Developmental Education, 15*(2), 5-17.

Massachusetts Board of Higher Education. (2007). *Final report from the task force on retention and completion rates at the community colleges*. Retrieved September 29, 2007, from http://www.massworkforce.com/documents/CCTFReport.pdf

Maxwell, M. (1997). *Improving student learning skills*. Clearwater FL: H & H Publishing.

National Evaluations Systems (2007). *THEA test registration bulletin*, Amherst, MA: National Evaluations Systems.

Taraban, R. (1997). Using statewide data to assess the effectiveness of developmental reading programs. *Journal of College Reading and Learning, 27*(3), 119-123.