

FINAL TECHNICAL REPORT

Improving the reading and language skills of high school  
striving readers and English language learners:

# A study of the effectiveness of Hampton-Brown *Edge*<sup>TM</sup>

2007–2008



*This research was conducted by SEG Research, an independent educational research firm located in New Hope, Pennsylvania. SEG research provides research, evaluation, and assessment services to educational publishers, educational technology providers, assessment service providers and government agencies. SEG has been meeting the research and assessment needs of organizations since 1979.*



# Table of Contents

- Executive Summary** ..... 1
  - Background and Purpose** ..... 1
  - Study Design** ..... 1
  - Results** ..... 2
    - Pre-Post Growth for *Edge* Users ..... 2
    - Comparison of Growth Between *Edge* Users and the Control Group ..... 3
    - Comparison of Matched Posttest Scores ..... 4
    - Effect Size ..... 5
  - Summary** ..... 5
  
- Edge Program Overview** ..... 6
  
- Rationale / Theory and Research Base** ..... 7
  
- Effectiveness Study Goals and Overview** ..... 9
  - Research Questions** ..... 9
  - Student Sample** ..... 9
  - Comparability of Study Groups** ..... 10
    - Ability Comparison ..... 11
    - Gender and Ethnicity Comparison ..... 11
  - Description of the Pretest and Posttest** ..... 12
    - Reliability and Validity ..... 12
  - Study Design** ..... 13
    - Data Collection ..... 13
  
- Findings** ..... 14
  - Measuring Growth** ..... 14
  - Overall Comparison of Growth** ..... 15
    - Language Growth ..... 17
    - Reading Comprehension Growth ..... 17
    - Vocabulary Growth ..... 18

<b>Striving Reader Results</b> .....	19
Language Growth .....	21
Reading Comprehension Growth .....	21
Vocabulary Growth .....	22
<b>English Language Learner Results</b> .....	23
Language Growth .....	25
Reading Comprehension Growth .....	25
Vocabulary Growth .....	26
<b>Grade Level Analysis</b> .....	27
<b>Gender and Linguistic Background Analysis</b> .....	29
<b>Summary and Discussion</b> .....	31
<b>Study Design</b> .....	31
<b>Summary Results</b> .....	31
Overall Results .....	31
Striving Reader and English Language Learner Results .....	32
Grade Level Results .....	32
Gender and Linguistic Background Results .....	32
<b>Conclusion</b> .....	33
<b>Appendices</b>	
<b>Appendix A. Author Information</b> .....	35
<b>Appendix B. Research Base for Hampton-Brown Edge</b> .....	37
Reading / Adolescent Literacy .....	37
Vocabulary .....	40
Oral Reading Fluency .....	42
Writing .....	42
Language & Literacy for ELLs .....	43
<b>Appendix C. References</b> .....	45

**Figures**

Figure 1. Pre-Post Growth for Students Using Hampton-Brown *Edge* ..... 2

Figure 2. Comparison of Pre-Post Growth for Students Using Hampton-Brown *Edge*  
and Control-Group Students Using Other Programs..... 3

Figure 3. Comparison of Matched Posttest Scores for Students Using Hampton-Brown *Edge*  
and Control-Group Students Using Other Programs ..... 4

Figure 4. Study Design ..... 13

**Tables**

Table 1. Demographic Profile of Student Participants ..... 10

Table 2. Comparison of Initial Language, Reading Comprehension, and Vocabulary Levels (SAT 10 Scores)  
for *Edge* Group and Control Group ..... 11

Table 3. Comparison of Gender Composition of *Edge* Group and Control Group ..... 11

Table 4. Comparison of the Ethnic Composition of *Edge* Group and Control Group ..... 12

Table 5. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group  
Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores ..... 15

Table 6. Analysis of Covariance Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary SAT 10 Posttest Scores..... 16

Table 7. Descriptive Statistics Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary SAT 10 Posttest Scores (Adjusted for Pretest Covariate) ..... 17

Table 8. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for Striving Readers..... 19

Table 9. Analysis of Covariance Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for Striving Readers..... 20

Table 10. Descriptive Statistics Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary, SAT 10 Posttest Scores for Striving Readers  
(Adjusted for Pretest Covariate) ..... 21

Table 11. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for English Language Learners ..... 23

Table 12. Analysis of Covariance Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for English Language Learners ..... 24

Table 13. Descriptive Statistics Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for English Language Learners  
(Adjusted for Pretest Covariate) ..... 25

Table 14. Number of Students by Grade..... 27

Table 15. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary SAT 10 Posttest Scores by Grade Level..... 28

Table 16. Number of Students by Gender and Linguistic Background ..... 29

Table 17. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group Language,  
Reading Comprehension, and Vocabulary SAT 10 Posttest Scores by Gender and Linguistic Background . . . 30



# EXECUTIVE SUMMARY

## Background and Purpose

During the 2007-2008 school year, SEG Research conducted a national study of students in grades nine through twelve to evaluate the effectiveness of the Hampton-Brown *Edge*<sup>™</sup> program. *Edge*, published by National Geographic School Publishing/Hampton-Brown, is a core Reading/Language Arts Program designed for high school students who have not mastered essential reading, writing, and language skills. The students for whom *Edge* is intended are typically reading two or more years below grade level. *Edge* is designed for both striving readers who are native English speakers as well as English language learners (ELLs).

*Edge* is designed to motivate adolescent readers by including engaging, high-interest, multicultural literature selections, both fiction and nonfiction, presented in thematic units organized around Essential Questions—big ideas that are relevant to high school students and are worth speaking, listening, reading, thinking, and writing about. The *Edge* program presents a wide variety of classic and contemporary texts—literary, informational, persuasive, and functional.

*Edge* equips students with the skills they need to succeed in an academic environment through use of systematic teaching and active participation. *Edge* employs scaffolding techniques such as using the text to teach the text, specialized in-book reading supports, showing rather than telling, unpacking the thinking process, and helping students set literacy goals. Strategies and skills are taught with focus and repetition across genres to promote transfer.

The goal of this study was to evaluate the effectiveness of *Edge* as a core intervention program for improving student reading and language skills. The study examined performance of both striving readers and English language learners and found that both populations of students using *Edge* as a core intervention Reading/Language Arts Program made significant improvement during one school year's time as compared to students using other intervention programs.

## Study Design

Between August 2007 and June 2008, approximately 1,800 students in 84 classrooms in 37 different schools in 18 districts representing all regions of the United States participated in a controlled study of *Edge* program effectiveness. Using a quasi-experimental, pre-post design, this study compared the growth in reading and language skills between students who received instruction using *Edge* (Experimental Group) and a comparable group of students who received instruction using other programs, without the benefit of *Edge* (Control Group). Growth in reading comprehension, vocabulary, and language was measured by comparing scores on the Stanford 10 Achievement Test Abbreviated Battery (SAT 10) at the beginning and end of the school year.

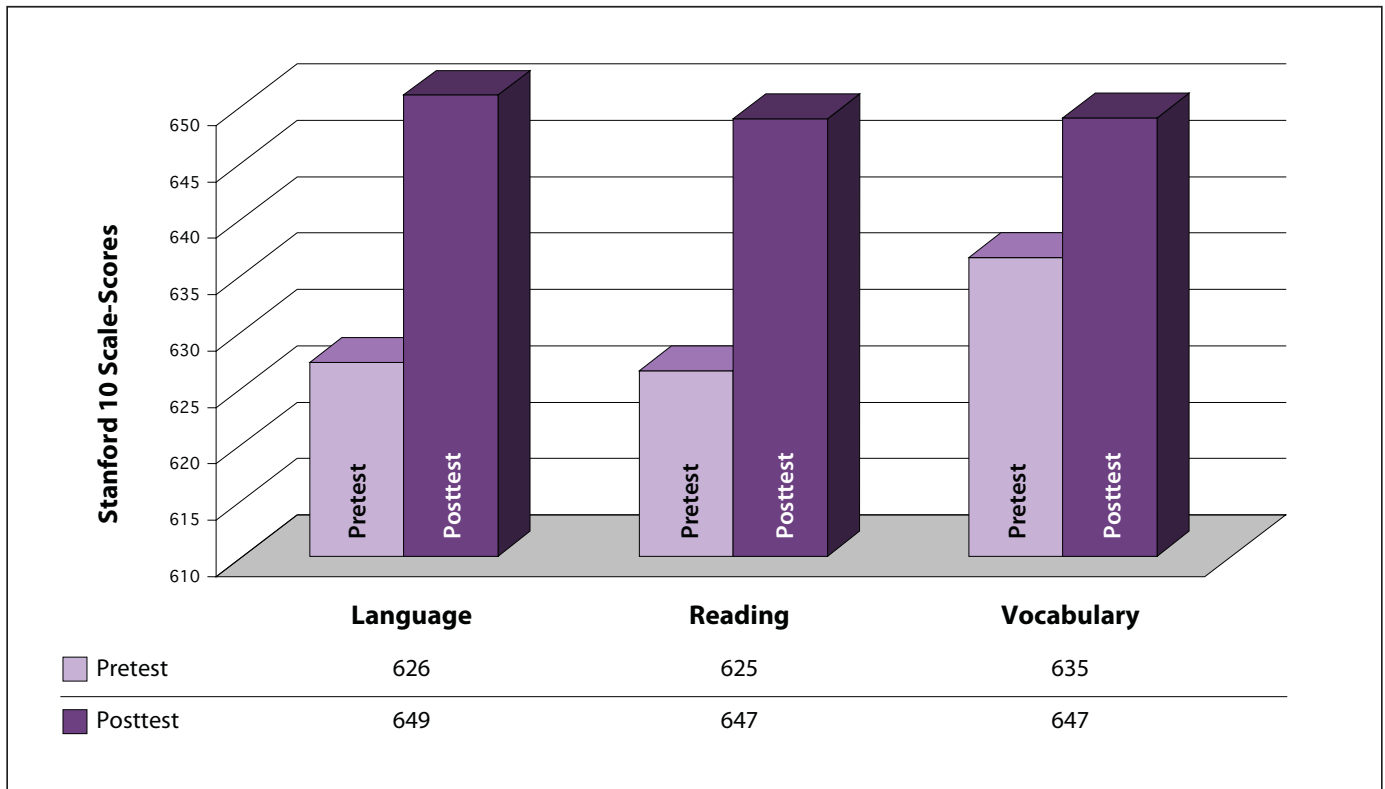
Students in both the Experimental (*Edge*) and Control Groups took a pretest (SAT 10) at the beginning of the school year to obtain a baseline measure of student reading and language skills. Students in the Experimental Group then received instruction using the *Edge* program, while those in the Control Group received instruction using other programs. At the end of the school year, students in both the *Edge* and Control Groups took a posttest (SAT 10). The results from the pretest and posttest were compared statistically to determine the level of growth in reading comprehension, vocabulary, and language skills. Students in the *Edge* and the Control Group were well-matched in ability and demographically. Any initial differences in the reading and language skills of students in the Experimental and Control Groups were statistically controlled during analysis.

## Results

### Pre-Post Growth for *Edge* Users

The students who used *Edge* showed significant gains from pre- to posttest in language, reading comprehension, and vocabulary. Across the 2007-2008 school year, students in *Edge* classrooms increased their SAT 10 Language scale-scores by 23 points; their Reading Comprehension scale-scores by 22 points; and their Vocabulary scale-scores by 12 points (see Figure 1).

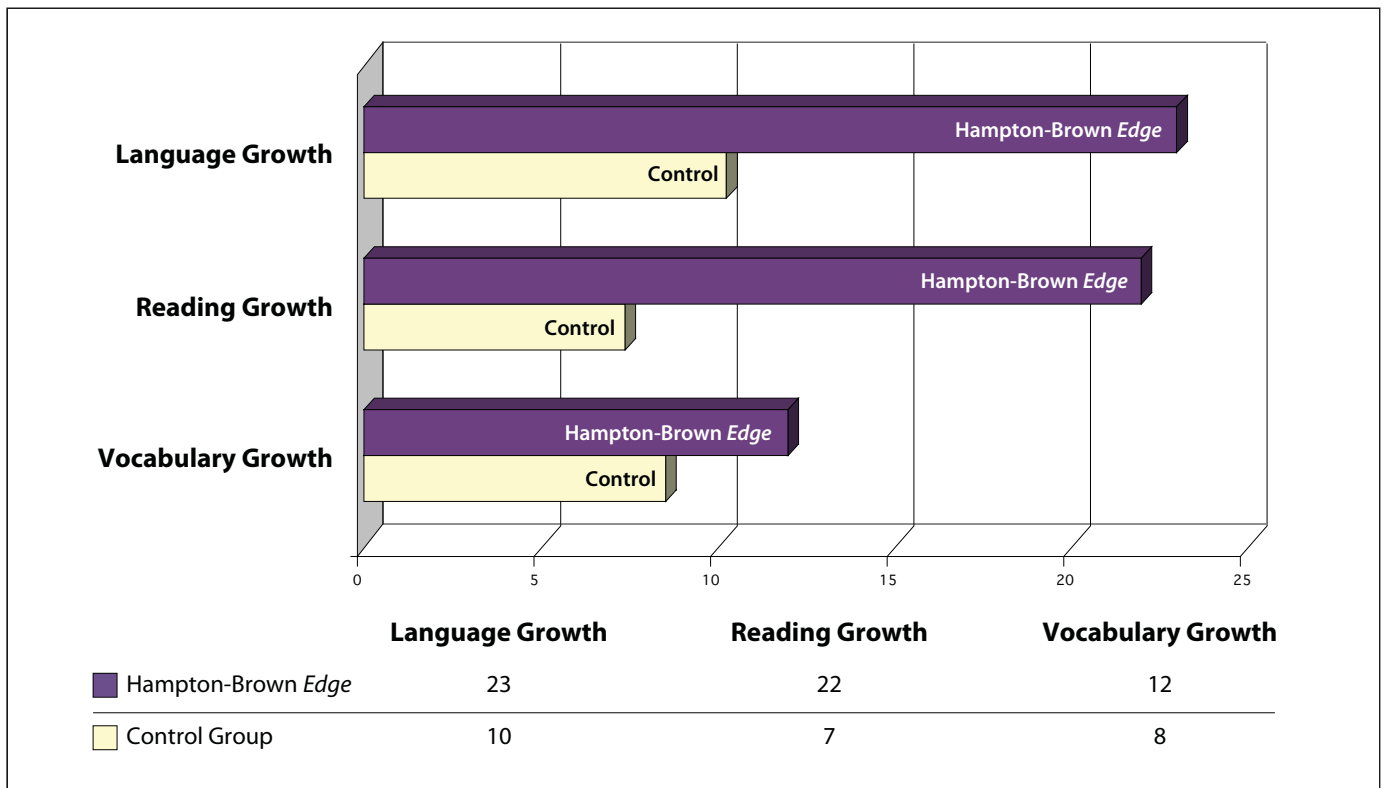
**Figure 1. Pre-Post Growth for Students Using Hampton-Brown *Edge***



### Comparison of Growth Between *Edge* Users and the Control Group

The students using Hampton-Brown *Edge* also showed significantly greater gains in language, reading comprehension, and vocabulary than those students in the Control Group who were not using the *Edge* program. Gains by the *Edge* users are statistically significant at the  $p < .001$  level; meaning there is less than a one in a thousand chance that the greater improvement seen for *Edge* users was due to chance. Comparing the *Edge* Group to Control Group results, students who used *Edge* gained more than three times (300%) as much in Reading Comprehension as those students who did not use *Edge*, more than twice (200%) as much in Language and one and a half times (150%) as much in Vocabulary (see Figure 2).

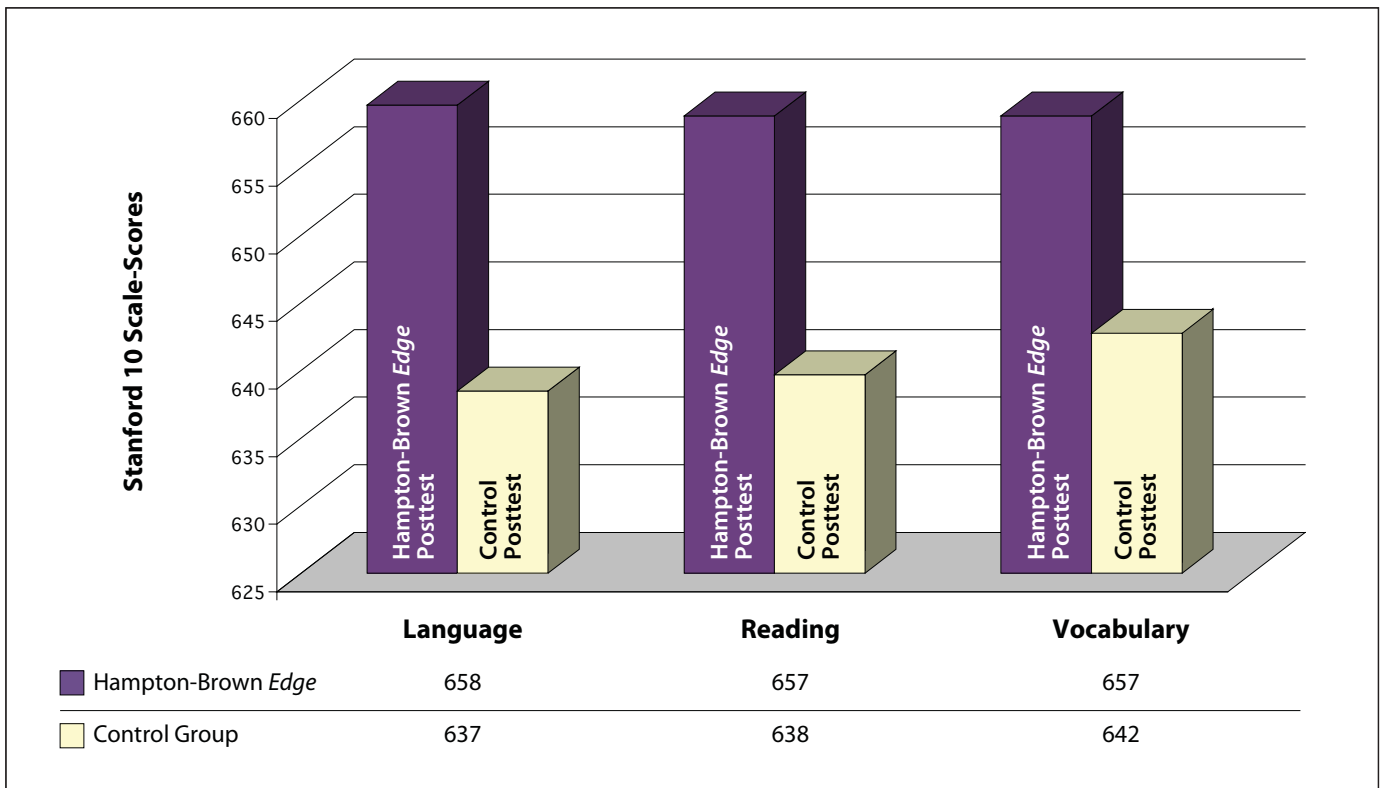
**Figure 2. Comparison of Pre-Post Growth for Students Using Hampton-Brown *Edge* and Control-Group Students Using Other Programs**



### Comparison of Matched Posttest Scores

This study controlled for any initial differences in the reading and language skills of students in the *Edge* and Control Groups using a statistical procedure known as analysis of covariance (ANCOVA). The result of this type of analysis is a more accurate comparison of growth between groups and allows us to compare differences as if the two groups (*Edge* and Control) were identically matched in initial reading proficiency. When controlling for students' initial ability in this manner, the posttest performance of the two groups is significant. *Edge* students finished the year with scores that were 21 scale-score points higher in Language, 19 scale-score points higher in Reading Comprehension, and 15 scale-score points higher in Vocabulary on the SAT 10 measures (see Figure 3).

**Figure 3. Comparison of Matched Posttest Scores for Students Using Hampton-Brown *Edge* and Control-Group Students Using Other Programs**



## Effect Size

To better understand the magnitude of the resultant difference between *Edge* users and those who did not use *Edge*, we looked at what researchers refer to as the “effect size.” Effect size computation provides a common metric that can be used for comparing the strength of different treatments (e.g. instructional programs) across studies. We compared the average (mean) score for the *Edge* Group to the average (mean) score for the Control Group (adjusted for any initial differences in student ability). We found effect sizes of +.42 for Language, +.40 for Reading Comprehension, and +.27 for Vocabulary. This is a very large effect indicating that the students who used *Edge* performed well above the students who did not use *Edge*. For comparison, these effect sizes are well above the average effect sizes of other reading programs as reported by Slavin (2008) in his comprehensive synthesis of middle and high school reading program research studies. As reported by Slavin (2008), mean effect sizes for mixed-method reading programs were reported at about +.23 and a mean effect size for instructional-process reading programs of +.21. The effect size found during this analysis of *Edge* is nearly twice as high as the effect size reported for other reading programs designed for high school students.

## Summary

Students enrolled in *Edge* classrooms achieved significantly greater gains in language, reading comprehension, and vocabulary than students enrolled in classes that did not use *Edge*. Students who used *Edge* gained more than three times (300%) as much in Reading Comprehension as those students who did not use *Edge*, more than twice (200%) as much in Language and one and a half times (150%) as much in Vocabulary.

When controlling for students’ initial ability using analysis of covariance, the findings of this study are quite significant. *Edge* students finished the year with scores that were 21 scale-score points higher in Language, 19 scale-score points higher in Reading Comprehension, and 15 scale-score points higher in Vocabulary than the Control Group on the SAT 10 measures.

To understand the magnitude of the resultant difference between *Edge* users and those who did not use *Edge*, we looked at effect size. We found effect sizes of +.42 for Language, +.40 for Reading Comprehension, and +.27 for Vocabulary. This is a very large effect indicating that the students who used *Edge* performed well above the students who did not use *Edge*.

The findings of this study demonstrate that students using *Edge* as a core intervention Reading/Language Arts Program can make significant improvement during one school year’s time as compared to students using other intervention programs.

## EDGE PROGRAM OVERVIEW

National Geographic School Publishing designed Hampton-Brown *Edge*<sup>™</sup> as a core Reading/Language Arts Program to develop the reading, writing, and language skills of high school students who are reading two or more years below grade level, including striving readers and English language learners in Grades 9-12. The program is based on several guiding principles.

*Edge* is designed to motivate adolescent readers by including engaging, high-interest, multicultural literature selections, both fiction and nonfiction, presented in thematic units organized around Essential Questions—big ideas that are relevant to high school students and are worth speaking, listening, reading, thinking, and writing about. Essential Questions make reading matter, cause active participation, and promote wide reading, which leads to significant comprehension gains. The *Edge* program presents a wide variety of classic and contemporary texts—literary, informational, persuasive, and functional.

*Edge* equips students with the skills they need to succeed in an academic environment through use of systematic teaching and active participation. *Edge* employs scaffolding techniques such as using the text to teach the text, specialized in-book reading supports, showing rather than telling, unpacking the thinking process, and helping students set literacy goals. Strategies and skills are taught with focus and repetition across genres to promote transfer. Seven key reading strategies are developed, one per unit: plan and monitor, ask questions, make inferences, determine importance, make connections, synthesize, and visualize. The program covers grades 9-10 English Language Arts Standards using specialized instructional strategies.

*Edge* helps striving readers and English language learners improve their reading through focus and repetition. In each unit, a few big instructional concepts are targeted and thoroughly taught in a way that focuses the student's attention. For example, students experience success because of the focus and repetition of a single literary concept and reading strategy in each unit. Skills and strategies are broken down, not watered down, so that students can master each part – for example, learning to identify a stated main idea first and then learning to identify an implicit main idea. Systematic application of strategies across genres and language arts processes promotes strategy transfer.

Explicit, systematic teaching with active participation by students develops competence and ownership, while also providing social motivation. A wide variety of assessment tools, including metacognitive and affective measures, get students committed to their own progress.

Instruction is consistently explicit and systematic, relying on targeted strategies that reflect research-based best practices for reading instruction, writing, and language development. Lessons employ a gradual release model with direct instruction, including teacher modeling and scaffolded presentation, followed by guided practice, independent practice, and application. Teachers can rely on clear instructional routines, with appropriate scaffolding and immediate, constructive feedback, to provide guidance and support to students.

*Edge* Leveled Libraries provide important opportunities for students to exercise choice in what they read and to apply reading strategies independently. Built-in coaching features support independent reading in a variety of genres and formats. reading power. Students develop and are able to monitor their own progress in reading skills practice pronunciation and fluency, and acquire academic vocabulary, using the software's structured supports.

Assessment plays a pivotal role in collecting data that can be used to differentiate and improve instruction and achievement. Through online testing using *Edge e-Assessment*, student results are available immediately at the class, school, and district levels. Teachers receive reteaching reports that group students by need and offer reteaching prescriptions and activities (via a hotlink on the e-Assessment report). This system facilitates individualized instruction, based on the assessment results.

*Edge* is authored by leading researcher/educators in the field of adolescent literacy: David W. Moore, Ph.D.; Deborah J. Short, Ph.D.; Michael W. Smith, Ph.D.; and Alfred W. Tatum, Ph.D. [see Appendix A for author biographical information]

## RATIONALE / THEORY AND RESEARCH BASE

The International Reading Association's Commission on Adolescent Literacy states, "Continual instruction beyond the early grades is needed" (Moore, Bean, Birdyshaw, & Rycik, 1999, p. 3). David W. Moore, Ph.D., *Edge* program author, co-chaired the International Reading Association's Commission on Adolescent Literacy.

*Edge* presents seven general strategies known to promote adolescents' reading comprehension: plan and monitor, ask questions, make inferences, determine importance, make connections, synthesize, and visualize. The strategies are ones that proficient readers use regularly and across a wide variety of texts. The comprehension strategy instruction in *Edge* was designed with the following principles and practices in mind:

- Effective comprehension strategy instruction for adolescents includes direct, explicit teaching (Biancarosa & Snow, 2004). Teachers model the strategy—frequently thinking through the process aloud—to show it in action.
- Youth come to school with substantial funds of everyday knowledge acquired from their families, communities, peers, and popular culture (Moje, et al., 2004). In effective secondary schools, teachers regularly form webs of connections among this knowledge and the lesson being taught (Langer, 2002). Teachers overtly point out these connections and invite students to make their own.
- Focusing comprehension strategy instruction—one strategy at a time—guards against overwhelming students (Nokes & Dole, 2004).

The reading comprehension strategy instruction found in *Edge* provides adolescents rich and meaningful opportunities to take control of their reading. It shows youth that reading proficiently is not a matter of being innately smart but, in part, a matter of applying appropriate strategies.

One finding from *Double the Work* (Short & Fitzsimmons, 2007) is that teachers need to use research-based instructional strategies in their lessons, whether the students are in an ESL, sheltered, SEI, or bilingual program. Deborah J. Short, Ph.D. is a co-developer of the research-validated SIOP Model for sheltered instruction and an *Edge* program author. Teachers need to incorporate both language and content objectives into their lessons to promote academic literacy and use instructional interventions that can reduce the achievement gap between English language learners and native English-speaking students. Research-based strategies that have shown positive student outcomes include: integrating listening,

speaking, reading and writing skills in all lessons for all proficiencies; teaching the components and processes of reading and writing; focusing on vocabulary development; building and activating prior knowl *Edge*; teaching language through content and themes; using native language strategically; pairing technology with instruction; and motivating adolescent English language learners through choice.

With each of these strategies, instruction must fit the cognitive and development levels of teens. They need to be exposed to a variety of text genres with targeted vocabulary development and they need to be treated like young adults who can take some responsibility for their own learning.

As noted in *Reading for the 21st Century: Adolescent Literacy Teaching and Learning Strategies* (Kamil, 2003), about 10% of students enter middle and high school with reading problems that stem from not having mastered the alphabetic principle. The majority of struggling readers at high school do not view reading favorably because they lack successful experiences. These students are often not motivated to read. Other students can decode text, but they have difficulty comprehending texts written at their assigned grade level. Many of these students have “survival” strategies or use avoidance mechanisms to protect their identities as adolescents and to avoid the stigma of being viewed as a struggling reader.

Many of these struggling readers have experienced reading-related failures over the years and are not open to receiving support from teachers because they believe failure is inevitable. In most cases, they attribute failure to ability, not effort. These issues make capturing the reader difficult. *Edge* incorporates considerations for assessing such students in order to provide responsive instruction. A number of techniques built into *Edge* help reveal students’ comprehension of texts:

- Ask students frequently to find supporting evidence in the text that shaped their responses.
- Give frequent daily and weekly practice with and feedback on students’ use of reading strategies.
- Ask metacognitive questions that target the use of reading skills and strategies and therefore provide a picture into how students are using (or not using) those key strategies.
- Develop in students the practice of self-questioning. With these strategies in place, you will be much more equipped to capture the reader, and not just the reader’s response. Providing quality instructional support for struggling adolescent readers depends on assessment practices.

All too often, struggling adolescent readers have little understanding of why they have difficulty comprehending text. *Edge* has been designed to help teachers “capture” adolescent readers, to give them chances to fail and recover, and to involve students in the assessment process. These assessment practices yield information that leads to responsive literacy teaching.

[See Appendix B for a comprehensive Research Base for Hampton-Brown *Edge*.]

## EFFECTIVENESS STUDY GOALS AND OVERVIEW

This report describes a study conducted during the 2007-2008 school year to evaluate the effectiveness of *Edge*, a core Reading/Language Arts Program for use with striving readers and English language learners. The study compares the growth in language, reading comprehension, and vocabulary skills of students in Grades 9-12 who received instruction using *Edge* (Experimental Group) to those using other instructional reading programs (Control Group). The study compared the growth in language, reading comprehension, and vocabulary performance attained by striving readers and English language learners in the Experimental Group and Control Group between August 2007 and June 2008, as measured by the growth in Stanford Achievement Test Abbreviated Battery (SAT 10) scores from the pretest administered in fall 2007 to the posttest administered in spring 2008.

### Research Questions

This study investigated the following questions:

1. Do **striving readers and English language learners** in grades 9 through 12 receiving *Edge* instruction show larger gains in language, reading comprehension, and vocabulary skills than a comparable group of students receiving alternative reading instruction?
2. Do **striving readers** in grades 9 through 12 receiving *Edge* instruction show larger gains in language, reading comprehension, and vocabulary skills than a comparable group of students receiving alternative reading instruction?
3. Do **English language learners** in grades 9 through 12 receiving *Edge* instruction show larger gains in language, reading comprehension, and vocabulary skills than a comparable group of students receiving alternative reading instruction?
4. Do striving readers and English language learners at each **grade level** (grades 9 through 12) receiving *Edge* instruction show larger gains in language, reading comprehension, and vocabulary skills than a comparable group of students receiving alternative reading instruction?
5. Do students of different **gender and linguistic backgrounds** receiving *Edge* instruction show larger gains in language, reading comprehension, and vocabulary skills than a comparable group of students receiving alternative reading instruction?

### Student Sample

Approximately 1,800 students from 84 classrooms in 37 different schools in 18 districts representing all regions of the United States participated in this controlled study of *Edge* program effectiveness. Students enrolled in classes designed for striving readers and/or English language learners participated in the study. Table 1 shows the number of students comprising each geographical region, gender, ethnicity, and grade category as reported by their teachers.

**Table 1. Demographic Profile of Student Participants**

<b>Variable</b>		<b>Number (N) of Students</b>
<b>Region</b>	<b>East</b>	317
	<b>Midwest</b>	491
	<b>South</b>	215
	<b>West</b>	578
	<b>Total (All Regions)</b>	1601
<b>Gender</b>	<b>Male</b>	652
	<b>Female</b>	771
	<b>Total (All Gender)</b>	1423
<b>Ethnicity</b>	<b>Caucasian</b>	296
	<b>African American</b>	103
	<b>Hispanic</b>	800
	<b>Asian/Pacific Islander</b>	148
	<b>Other</b>	57
	<b>Total (All Ethnicity)</b>	1404
<b>Grade</b>	<b>Grade 9</b>	551
	<b>Grade 10</b>	385
	<b>Grade 11</b>	277
	<b>Grade 12</b>	204
	<b>Total (All Grades)</b>	1417

In some cases, teachers did not provide complete background information for a student or a student did not take one of the tests included in the analyses. Where data was missing, the student's results were eliminated from those analyses.

### **Comparability of Study Groups**

It is very important in a study comparing student growth to establish that the Experimental Group and Control Group are similar in background and ability. Demonstrating baseline equivalence of the analytical sample (intervention and comparison groups) minimizes potential bias from selection in quasi-experimental designs that can alter effect size estimates (What Works Clearinghouse Procedures and Standards Handbook (Version 2); Institute of Education Sciences, December 2008).

If the Experimental Group and the Control Group are not similar, we cannot be sure if the growth we see is due to the treatment (in this case use of *Edge*) or the result of some differences in the individuals that existed before we conducted the study.

Ideally, this matching is accomplished by sampling study participants of similar ability and with similar background characteristics. However, any observed differences can be adjusted for using analysis of covariance (ANCOVA). The Experimental Group and Control Group were compared with respect to initial language, reading comprehension, and

vocabulary ability, as well as their gender and ethnicity. The results indicate that the groups were similar in composition (see Table 2).

Both pretest and posttest (SAT 10) data were available for approximately 975 students. About 685 of these students were in the Experimental (*Edge*) Group and about 290 were in the Control Group.

### Ability Comparison

The SAT 10 pretest scores were used to compare the initial Language, Reading Comprehension, and Vocabulary levels for students in both the experimental and control groups. The average (mean) test scores for students in both the *Edge* Group and Control Group are presented in Table 2.

**Table 2. Comparison of Initial Language, Reading Comprehension, and Vocabulary Levels (SAT 10 Scores) for *Edge* Group and Control Group**

Study Group	Language Mean	Language Standard Deviation	Reading Comprehension Mean	Reading Comprehension Standard Deviation	Vocabulary Mean	Vocabulary Standard Deviation
<i>Edge</i> Group	629 (N=671)	43.89	628 (N=687)	36.90	635 (N=686)	54.81
Control Group	630 (N=287)	47.06	634 (N=289)	49.32	631 (N=290)	61.99
Total Group	630 (N=958)	44.84	630 (N=976)	41.03	634 (N=976)	57.04

There were no statistically significant differences between the experimental and control groups for Language ( $F=.055$ ,  $df=1/958$ ,  $p<.82$ ) and Vocabulary ( $F=1.15$ ,  $df=1/976$ ,  $p<.29$ ). There was a small, but statistically significant, difference for Reading Comprehension ( $F=4.01$ ,  $df=1/976$ ,  $p<.05$ ). The difference in reading scores accounted for less than 1% of the variance between the two study groups indicates that the differences between the two groups was not meaningful.

### Gender and Ethnicity Comparison

The number of female and male students and the number of students in each ethnic group in both the experimental and control groups were counted. These counts are presented in Table 3 and Table 4 below.

**Table 3. Comparison of Gender Composition of *Edge* Group and Control Group**

Study Group	Gender		Total
	Female	Male	
<i>Edge</i> Group	287	348	635
Control Group	125	138	263
Total Group	412	486	898

**Table 4. Comparison of the Ethnic Composition of *Edge* Group and Control Group**

Study Group	Ethnicity				Total
	Caucasian	African American	Hispanic	Other	
<b><i>Edge</i> Group</b>	131	49	269	84	533
<b>Control Group</b>	71	15	107	35	228
<b>Total Group</b>	202	64	376	119	761

A statistical comparison of the two study groups shows that the Experimental (*Edge*) Group and the Control Group were very similar with respect to gender and ethnicity. There were no statistical differences in the expected and observed frequencies for gender (chi square=.41, df=1, p<.52) or ethnicity (chi square=4.31, df=3, p<.23). Students in the two study groups are similar in background and ability.

### Description of the Pretest and Posttest

The language, reading comprehension, and vocabulary skills of students participating in the study were measured using the Stanford Achievement Test, Tenth Edition (SAT 10), Abbreviated Battery, Form A, 2002. The SAT 10 was used as both the pretest and posttest measure; students took the SAT 10 at the beginning of the school year and then again at the end of the school year.

The Language, Reading Comprehension, and Vocabulary subtests of the SAT 10 were used for this study. The Language subtest measures students' achievement in applying the principles that form effective writing from word- and sentence-level skills to whole composition features. The Reading Comprehension subtest measures students' achievement within the framework of three types of materials or purposes for reading: literary, informational, and functional text. Within each type of text, questions measure achievement in four modes of comprehension: initial understanding, interpretation, critical analysis, and awareness and usage of reading strategies. The Vocabulary subtest measures students' achievement in reading vocabulary skills through use of synonyms, multiple-meaning words, and context clues items that target appropriate words for each grade level. Each subtest ranges from 20-30 items in length (Stanford Achievement Test series, Tenth Edition technical data report; Harcourt Assessment, 2002).

The SAT 10 measures students' skill levels on a single vertical scale ranging from 200-900. The scale-scores represent equal units; differences between scores at any point in the scale represent the same amount of achievement variation. This allows for an accurate comparison of changes over time. The scale is equivalent across forms and grade levels, to provide an accurate comparison across grade levels; a score at one grade level means that same thing at another grade level.

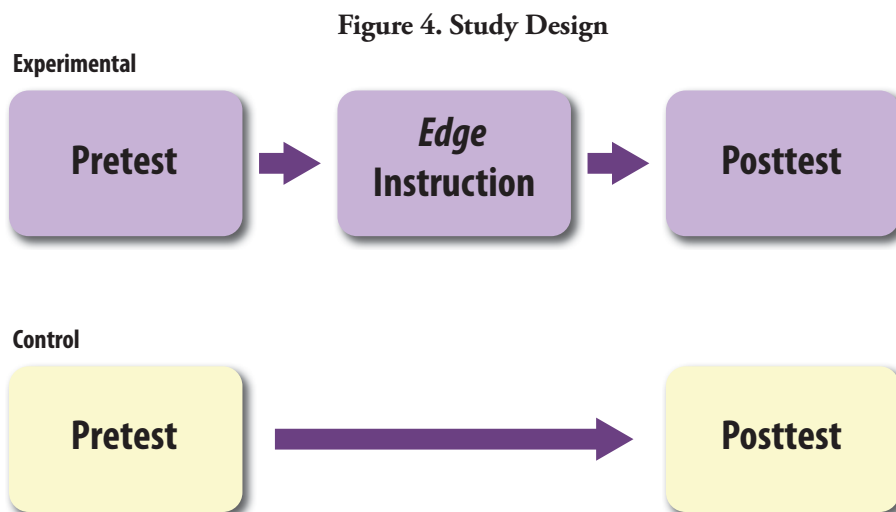
### Reliability and Validity

The reliability of the SAT 10 ranges from .89 to .97 (KR-20 reliability coefficient; Harcourt Assessment, 2002). Several validity studies conducted for the SAT 10 have found strong evidence for the validity of SAT 10 scores; for example, content expert review found strong alignment with important reading skills. Strong relationships were found between the SAT 10 and other measures of reading ability. For a more complete discussion of the SAT 10 reliability and validity, readers are referred to the SAT 10 technical manual (Harcourt Assessment, 2002).

## Study Design

The goal of this effectiveness study was to compare the growth in language, reading comprehension, and vocabulary for striving readers and English language learners who received instruction with *Edge* to striving readers and English language learners who did not receive instruction with *Edge*. Students' growth in language, reading comprehension, and vocabulary was measured by comparing their proficiency at the beginning and again at the end of the school year after receiving instruction. Students in the *Edge* Group and the Control Group were administered the SAT 10 test as a pretest at the beginning of the fall semester in September/October of 2007 and at the conclusion of the school year in May 2008. Students received approximately 20-26 weeks of instruction between the pretest and posttest. Students in the Experimental Group received instruction using *Edge*, while those in the Control Group received instruction using other reading/language arts programs. Students in both the experimental and control groups received at least 30 minutes of reading instruction daily. The results were then compared statistically.

The study employed a pre-post, experimental-control group design. Since the students were not randomly assigned to the groups, this is considered a quasi-experimental design. This design is illustrated in Figure 4 below.



### Data Collection

At the outset of the study (September 2007) teachers were asked to provide background information about the students participating in order to characterize the sample, compare the differences between the study groups and to facilitate the analysis of language, reading comprehension, and vocabulary gains between the study groups. This information included:

- Student grade level
- Student gender
- Student ethnicity and linguistic background
- Study group membership: Experimental(*Edge*) or Control
- Designation as a striving reader or English language learner class member

Teachers were also asked to provide some additional demographic and instructional information regarding Individual

Education Plans (IEP) and disabilities as well as participation in free and reduced lunch programs. Due to the unavailability of information and/or privacy concerns, many teachers did not provide this additional information. Therefore, there was insufficient information to provide additional analyses examining these specific variables.

Teachers participating in the study were provided with SAT 10 test booklets and administration manuals for their grade level in September/October 2007. The teachers then administered the SAT 10 pretest (Language, Reading Comprehension, and Vocabulary subtests) according to the administration instructions provided. The completed test booklets and answer sheets were then returned for processing. The answer sheets were scanned and entered into a database. Any questions that the students did not answer were scored as incorrect. Students answering fewer than four questions were removed from the analysis. All data was reviewed and checked for accuracy before scoring and analysis.

At the conclusion of the school year in May 2008, following approximately 20-26 weeks of instruction, teachers administered the SAT 10 posttest (Language, Reading Comprehension, and Vocabulary subtests). The SAT 10 pretest and posttest results were compared as a basis for evaluating the growth reported in this study.

## FINDINGS

### Measuring Growth

The growth in language, reading comprehension, and vocabulary skills for the Experimental (*Edge*) Group and the Control Group was compared using a statistical procedure known as analysis of covariance (ANCOVA). This approach provides an accurate way to compare growth over time controlling for any potential differences in student skills between the two study groups that may have been present at the beginning of the study. Any differences in skill levels between the Experimental Group and Control Group that may have existed at the beginning of the study were controlled for to ensure that any differences in subsequent growth were the result of *Edge* use and not merely the result of differences that existed at the start of the study.

ANCOVA is a statistical approach that controls for any potential differences in the initial skill levels of students. This provides a more accurate comparison of growth that occurred between experimental and control groups since the beginning of the study. Using this method, we were able to compare differences as if the two groups were identically matched in initial reading proficiency. While no procedure can completely eliminate differences that may exist at the outset of a study, ANCOVA is widely recognized as an effective way to control for differences.

Only students for whom matched pretest and posttest results were available were included in the analysis. The analysis looked only at those students who had taken the SAT 10 at the beginning of the school year (pretest) and those who had taken the SAT 10 at the end of the school year (posttest). Students who left the class during this period or who joined the class during this period were not included in the growth comparisons.

## Overall Comparison of Growth

The overall growth in reading and language skills as measured by the Language, Reading Comprehension, and Vocabulary subtests of the SAT 10 for those students in classes using the *Edge* program (Experimental Group) were compared to the reading and language skills measured by the Language, Reading Comprehension, and Vocabulary subtests of the SAT 10 of those students in classes who used other reading programs (Control Group). Multivariate Analysis of Covariance (MANCOVA) was used to evaluate the difference in a composite reading and language skill score (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial reading and language levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place students in the *Edge* Group and Control Group on the same baseline. All students in the study (i.e. those students in classes specifically for English language learners and those students in classes not designated specifically for English language learners) were included in the overall comparison of growth analysis. The comparisons were based on 621 *Edge* Group students and 271 Control Group students for whom all three pretest measures and all three posttest measures were available.

The results show a significant difference in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary subtests posttest scores between the *Edge* Group and the Control Group ( $df=3/877$ ;  $F=39.39$ ;  $p<.001$ ) when initial reading and language skills are controlled. *Edge* use accounted for approximately 12% of the variation in a composite of the Language, Reading Comprehension, and Vocabulary SAT 10 posttest scores. (Eta squared = .12). This means that about 12% of the growth in overall reading and language skills can be explained by whether or not teachers and their students used the *Edge* program. The results, using Pillai's Trace, are summarized in Table 5 below. (The results for Wilks Lamda and Hotelling's T are not reported since with only two groups the results are the same as those shown for Pillai's Trace.)

**Table 5. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores**

Effect		Value	F	Hypothesis df	Error df	Significance	Partial Eta Squared
<b>Intercept</b>	Pillai's Trace	.095	31.059	3	9	.001	.10
<b>Language Pretest</b>	Pillai's Trace	.177	63.279	3	9	.001	.18
<b>Reading Pretest</b>	Pillai's Trace	.195	71.670	3	9	.001	.20
<b>Vocabulary Pretest</b>	Pillai's Trace	.303	128.493	3	9	.001	.30
<b>Study Group</b>	Pillai's Trace	.118	39.387	3	9	.001	.12

To provide a more complete understanding of these results for the separate language, reading comprehension, and vocabulary skill areas, the individual effects for the Language, Reading Comprehension, and Vocabulary subtests were examined separately using ANCOVA (see Table 6).

**Table 6. Analysis of Covariance Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores**

Source	Dependent Variable (SAT 10 Posttest)	Type III Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
<b>Corrected Model</b>	Language	984880.520(b)	4	246220.130	261.900	.001	.54
	Reading Comprehension	919218.989(d)	4	229804.747	259.72	.001	.54
	Vocabulary	1348882.543(c)	4	337220.636	309.33	.001	.58
<b>Intercept</b>	Language	49271.032	1	49271.032	52.23	.001	.06
	Reading Comprehension	59973.049	1	59973.049	67.78	.001	.07
	Vocabulary	41101.807	1	41101.807	37.70	.001	.04
<b>Language Pretest</b>	Language	174346.872	1	174346.872	184.81	.001	.17
	Reading Comprehension	50552.431	1	50552.431	57.13	.001	.06
	Vocabulary	8406.112	1	8406.112	7.71	.006	.01
<b>Reading Pretest</b>	Language	85084.962	1	85084.962	90.19	.001	.09
	Reading Comprehension	174359.133	1	174359.133	197.06	.001	.18
	Vocabulary	54878.422	1	54878.422	50.34	.001	.05
<b>Vocabulary Pretest</b>	Language	11982.991	1	11982.991	12.70	.001	.01
	Reading Comprehension	17319.720	1	17319.720	19.57	.001	.02
	Vocabulary	415141.443	1	415141.443	380.80	.001	.30
<b>Study Group</b>	Language	78928.167	1	78928.167	83.67	.001	.09
	Reading Comprehension	67628.342	1	67628.342	76.43	.001	.08
	Vocabulary	42459.684	1	42459.684	38.95	.001	.04
<b>Error</b>	Language	836781.601	887	943.384			
	Reading Comprehension	784834.428	887	884.819			
	Vocabulary	966992.456	887	1090.183			
<b>Total</b>	Language	380396586.000	892				
	Reading Comprehension	379672052.000	892				
	Vocabulary	381507339.000	892				
<b>Corrected Total</b>	Language	1821662.121	891				
	Reading Comprehension	1704053.417	891				
	Vocabulary	2315874.999	891				

**Table 7. Descriptive Statistics Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores (Adjusted for Pretest Covariate)**

Dependent Variable (SAT 10 Posttest)	Group	N	Mean SAT 10
Language	<i>Edge</i>	621	657.7
	Control	271	637.1
	Total	892	647.4
Reading Comprehension	<i>Edge</i>	621	656.7
	Control	271	637.7
	Total	892	647.2
Vocabulary	<i>Edge</i>	621	656.6
	Control	271	641.5
	Total	892	649.0

### Language Growth

The SAT 10 Language subtest scores, for those students in classes using *Edge* (Experimental Group) were compared to the SAT 10 Language subtest scores of those students in classes using other reading/language arts programs (Control Group). ANCOVA was used to evaluate the difference in Language subtest scores (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for initial proficiency levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place students in the *Edge* Group and the Control Group on the same baseline.

The results show a significant difference in language achievement between the *Edge* Group and the Control Group ( $df=1/892$ ;  $F=83.67$ ;  $p<.001$ ) when initial language proficiency is controlled. The average Language subtest score for students in the *Edge* Group (Mean= 658) was significantly greater than the average Language subtest score achieved by students in the Control Group (Mean= 637). *Edge* use accounted for approximately 9% of the variation in the Language subtest scores (Eta squared=.09). This means that about 9% of the growth in language achievement can be explained by whether or not teachers and their students used the *Edge* program. The results are summarized in Table 7 (see above).

To better understand the magnitude of the resultant difference between *Edge* users and those who did not use *Edge*, we calculated the effect size. The effect size for the Language subtest was  $+.42$ , computed as the difference between the Language subtest mean score for the *Edge* Group and the Language subtest mean score for the Control Group divided by the Control Group Language subtest standard deviation.

### Reading Comprehension Growth

The SAT 10 Reading Comprehension subtest scores of students in classes using *Edge* (Experimental Group) were compared to the SAT 10 Reading Comprehension subtest scores of students in classes using other reading/language arts programs (Control Group). ANCOVA was used to evaluate the difference in Reading Comprehension scores (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial proficiency levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place students in the *Edge* Group and the Control Group on the same baseline.

The results show a significant difference in reading comprehension achievement between the *Edge* Group and the Control Group ( $df=1/892$ ;  $F=76.43$ ;  $p<.001$ ) when initial reading comprehension proficiency is controlled. The average Reading Comprehension subtest score for students in the *Edge* Group (Mean =624) was significantly greater than the average Reading Comprehension subtest score achieved by students in the Control Group (Mean=597). *Edge* use accounted for approximately 8% of the variation in the Reading Comprehension subtest scores (Eta squared=.08). This means that about 8% of the growth in reading comprehension achievement can be explained by whether or not teachers and their students used the *Edge* program. The results are summarized in Table 7 (see above).

To better understand the magnitude of the resultant difference between *Edge* users and those who did not use *Edge*, we calculated the effect size. The effect size for the Reading Comprehension subtest was  $+.40$ , computed as the difference between the Reading Comprehension subtest mean score for the *Edge* Group and the Reading Comprehension subtest mean score for the Control Group divided by the Control Group Reading Comprehension subtest standard deviation.

### **Vocabulary Growth**

The SAT 10 Vocabulary subtest scores, for those students in classes using *Edge* (Experimental Group) were compared to the SAT 10 Vocabulary subtest scores of those students in classes using other reading/language arts programs (Control Group). ANCOVA was used to evaluate the difference in Vocabulary scores (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial proficiency levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place students in the *Edge* Group and Control Group on the same baseline.

The results show a significant difference in vocabulary achievement between the *Edge* Group and the Control Group ( $df=1/892$ ;  $F=38.95$ ;  $p<.001$ ) when initial vocabulary proficiency is controlled. The average Vocabulary subtest score for students in the *Edge* Group (Mean=636) was significantly greater than the average Vocabulary subtest score achieved by students in the Control Group (Mean=609). *Edge* use accounted for approximately 4% of the variation in the Vocabulary subtest scores (Eta squared=.04). This means that about 4% of the growth in vocabulary achievement can be explained by whether or not teachers and their students used the *Edge* program. The results are summarized in Table 7(see above).

To better understand the magnitude of the resultant difference between *Edge* users and those who did not use *Edge*, we calculated the effect size. The effect size for the Vocabulary subtest was  $+.27$ , computed as the difference between the Vocabulary subtest mean score for the *Edge* Group and the Vocabulary subtest mean score for the Control Group divided by the Control Group Vocabulary subtest standard deviation.

## Striving Reader Results

The overall growth in reading and language skills for striving readers (those students in the study not enrolled in classes designated specifically for English language learners) in classes using *Edge* (Experimental Group) as measured by the SAT 10 Language, Reading Comprehension, and Vocabulary subtests was compared to the overall growth in reading and language skills of striving readers in classes who used alternative instructional programs (Control Group) as measured by the SAT 10 Language, Reading Comprehension, and Vocabulary subtests. MANCOVA was used to evaluate the difference in a composite skill score (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial skill levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place striving readers in the *Edge* Group and the Control Group on the same baseline. The comparisons were based on 266 striving readers in the Experimental Group and 114 striving readers in the Control Group for whom all three pretest measures and all three posttest measures were available.

The results show a significant difference in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest scores between striving readers in the *Edge* Group and striving readers in the Control Group ( $df=3/373$ ;  $F=9.80$ ;  $p<.001$ ) when initial proficiency levels are controlled. *Edge* use accounted for approximately 7% of the variation in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest scores (Eta squared=.07). This means that about 7% of the growth in language, reading comprehension, and vocabulary achievement can be explained by whether or not striving readers used *Edge*. The results, using Pillai's Trace, are summarized in Table 8 (see below).

**Table 8. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for Striving Readers**

Effect		Value	F	Hypothesis df	Error df	Significance	Partial Eta Squared
<b>Intercept</b>	Pillai's Trace	.056	7.380	3	373	.001	.06
<b>Language Pretest</b>	Pillai's Trace	.171	25.656	3	373	.001	.17
<b>Reading Pretest</b>	Pillai's Trace	.158	23.296	3	373	.001	.16
<b>Vocabulary Pretest</b>	Pillai's Trace	.249	41.217	3	373	.001	.25
<b>Study Group</b>	Pillai's Trace	.073	9.801	3	373	.001	.07

To provide a more complete understanding of these results for the individual language, reading comprehension, and vocabulary skill areas, the individual effects for SAT 10 Language, Reading Comprehension, and Vocabulary subtest scores were examined separately using ANCOVA (see Table 9).

**Table 9. Analysis of Covariance Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for Striving Readers**

Source	Dependent Variable (SAT 10 Posttest)	Type III Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
<b>Corrected Model</b>	Language	371876.623(e)	4	92969.156	106.991	.001	.53
	Reading Comprehension	404948.571(g)	4	101237.143	109.466	.001	.54
	Vocabulary	438447.965(f)	4	109611.991	91.565	.001	.49
<b>Intercept</b>	Language	16208.057	1	16208.057	18.653	.001	.05
	Reading Comprehension	7790.930	1	7790.930	8.424	.001	.02
	Vocabulary	10653.481	1	10653.481	8.899	.001	.02
<b>Language Pretest</b>	Language	63042.246	1	63042.246	72.550	.001	.16
	Reading Comprehension	20107.996	1	20107.996	21.743	.001	.06
	Vocabulary	3977.390	1	3977.390	3.323	.006	.01
<b>Reading Pretest</b>	Language	21537.368	1	21537.368	24.786	.001	.06
	Reading Comprehension	59129.027	1	59129.027	63.935	.001	.146
	Vocabulary	22192.702	1	22192.702	18.539	.001	.05
<b>Vocabulary Pretest</b>	Language	32564.955	1	32564.955	37.476	.001	.09
	Reading Comprehension	39076.302	1	39076.302	42.253	.001	.10
	Vocabulary	131739.907	1	131739.907	110.049	.001	.23
<b>Study Group</b>	Language	15328.380	1	15328.380	17.640	.001	.05
	Reading Comprehension	20917.169	1	20917.169	22.617	.001	.06
	Vocabulary	8111.031	1	8111.031	6.776	.001	.02
<b>Error</b>	Language	325855.335	375	868.948			
	Reading Comprehension	346808.679	375	924.823			
	Vocabulary	448911.393	375	1197.097			
<b>Total</b>	Language	166220452.000	380	92969.156			
	Reading Comprehension	166907351.000	380				
	Vocabulary	173455628.000	380				
<b>Corrected Total</b>	Language	697731.958	379				
	Reading Comprehension	751757.250	379				
	Vocabulary	887359.358	379				

**Table 10. Descriptive Statistics Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary, SAT 10 Posttest Scores for Striving Readers (Adjusted for Pretest Covariate)**

Dependent Variable (SAT 10 Posttest)	Group	N	Mean SAT 10
Language	<i>Edge</i>	266	664.3
	Control	114	649.9
	Total	380	657.1
Reading Comprehension	<i>Edge</i>	266	666.3
	Control	114	649.5
	Total	380	661.3
Vocabulary	<i>Edge</i>	266	677.0
	Control	114	666.6
	Total	380	671.8

### Language Growth

The SAT 10 Language subtest scores for striving readers in classes using *Edge* (Experimental Group) were compared to the SAT 10 Language subtest scores of striving readers in classes using other reading/language arts programs (Control Group). ANCOVA was used to evaluate the difference in Language subtest scores (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial language proficiency levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place striving readers in the *Edge* Group and the Control Group on the same baseline.

The results show a significant difference in language achievement between striving readers in the *Edge* Group and striving readers in the Control Group ( $df=1/380$ ;  $F=17.64$ ;  $p<.001$ ) when initial language proficiency is controlled. The average Language subtest score for striving readers in the *Edge* Group (Mean=664) was significantly greater than the average Language subtest score achieved by striving readers in the Control Group (Mean= 650). *Edge* use accounted for approximately 5% of the variation in the Language subtest scores (Eta squared=.05). This means that about 5% of the growth in language achievement can be explained by whether or not striving readers used the *Edge* program. The results are summarized in Table 10 (see above).

### Reading Comprehension Growth

The SAT 10 Reading Comprehension subtest scores for striving readers in classes using *Edge* (Experimental Group) were compared to the SAT 10 Reading Comprehension subtest scores of striving readers in classes using other reading/language arts programs (Control Group). ANCOVA was used to evaluate the difference in Reading Comprehension subtest scores (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial reading comprehension proficiency levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place striving readers in the *Edge* Group and the Control Group on the same baseline.

The results show a significant difference in reading comprehension achievement between striving readers in the *Edge* Group

and striving readers in the Control Group ( $df=1/380$ ;  $F=22.62$ ;  $p<.001$ ) when initial reading comprehension proficiency is controlled. The average Reading Comprehension subtest score for striving readers in the *Edge* Group (Mean=624) was significantly greater than the average Reading Comprehension subtest score achieved by striving readers in the Control Group (Mean=597). *Edge* use accounted for approximately 6% of the variation in Reading Comprehension subtest scores (Eta squared=.06). This means that that about 6% of the growth in reading comprehension achievement can be explained by whether or not striving readers used the *Edge* program. The results are summarized in Table 10 (see above).

### **Vocabulary Growth**

The SAT 10 Vocabulary subtest scores for striving readers in classes using *Edge* (Experimental Group) were compared to the SAT 10 Vocabulary subtest scores of striving readers in classes using other reading/language arts programs (Control Group). ANCOVA was used to evaluate the difference in Vocabulary subtest scores (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial vocabulary proficiency levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place striving readers in the *Edge* Group and the Control Group on the same baseline.

The results show a significant difference in vocabulary achievement between striving readers in the *Edge* Group and striving readers in the Control Group ( $df=1/380$ ;  $F=6.78$ ;  $p<.001$ ) when initial vocabulary proficiency is controlled. The average Vocabulary subtest score for striving readers in the *Edge* Group (Mean=677) was significantly greater than the average Vocabulary subtest score achieved by striving readers in the Control Group (Mean=667). *Edge* use accounted for approximately 2% of the variation in the Vocabulary subtest scores (Eta squared=.02). This means that about 2% of the growth in vocabulary achievement can be explained by whether or not striving readers used the *Edge* program. The results are summarized in Table 10 (see above).

## English Language Learner Results

The overall growth in reading and language skills for English language learners (those students in the study enrolled in classes designated specifically for English language learners) in classes using *Edge* (Experimental Group) as measured by the SAT 10 Language, Reading Comprehension, and Vocabulary subtests was compared to the overall growth in reading and language skills of English language learners in classes who used alternative instructional programs (Control Group) as measured by the SAT 10 Language, Reading Comprehension, and Vocabulary subtests. MANCOVA was used to evaluate the difference in a composite skill score (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial skill levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place English language learners in the *Edge* Group and the Control Group on the same baseline. The comparisons were based on 351 English language learners in the Experimental group and 157 English language learners in the Control Group for whom all three pretest measures and all three posttest measures were available.

The results show a significant difference in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest scores between English language learners in the *Edge* Group and English language learners in the Control Group ( $df=3/501$ ;  $F=36.55$ ;  $p<.001$ ) when initial proficiency levels are controlled. *Edge* use accounted for approximately 18% of the variation in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest scores (Eta squared=.18). This means that about 18% of the growth in language, reading comprehension, and vocabulary achievement can be explained by whether or not English language learners used *Edge*. The results, using Pillai's Trace, are summarized in Table 11 (see below).

**Table 11. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for English Language Learners**

Effect		Value	F	Hypothesis df	Error df	Significance	Partial Eta Squared
Intercept	Pillai's Trace	.130	25.053	3	501	.001	.13
Language Pretest	Pillai's Trace	.178	36.053	3	501	.001	.18
Reading Pretest	Pillai's Trace	.177	35.923	3	501	.001	.18
Vocabulary Pretest	Pillai's Trace	.286	66.817	3	501	.001	.29
Study Group	Pillai's Trace	.180	36.545	3	501	.001	.18

To provide a more complete understanding of these results for the individual language, reading comprehension, and vocabulary skill areas, the individual effects for SAT 10 Language, Reading Comprehension, and Vocabulary subtest scores were examined separately using ANCOVA (see Table 12).

**Table 12. Analysis of Covariance Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for English Language Learners**

Source	Dependent Variable (SAT 10 Posttest)	Type III Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared
<b>Corrected Model</b>	Language	587468.194(b)	4	146867.048	156.869	.001	.56
	Reading Comprehension	466360.167(d)	4	116590.042	149.808	.001	.54
	Vocabulary	617116.787(c)	4	154279.197	158.258	.001	.56
<b>Intercept</b>	Language	18888.365	1	18888.365	20.175	.001	.04
	Reading Comprehension	43201.510	1	43201.510	55.510	.001	.10
	Vocabulary	40409.540	1	40409.540	41.452	.001	.08
<b>Language Pretest</b>	Language	100975.900	1	100975.900	107.852	.001	.18
	Reading Comprehension	24121.143	1	24121.143	30.993	.001	.06
	Vocabulary	4800.098	1	4800.098	4.924	.027	.01
<b>Reading Pretest</b>	Language	34685.380	1	34685.380	37.047	.001	.07
	Reading Comprehension	80951.968	1	80951.968	104.016	.001	.17
	Vocabulary	20057.188	1	20057.188	20.574	.001	.04
<b>Vocabulary Pretest</b>	Language	405.591	1	405.591	.433	.511	.01
	Reading Comprehension	268.815	1	268.815	.345	.557	.01
	Vocabulary	182064.330	1	182064.330	186.759	.000	.27
<b>Study Group</b>	Language	67322.803	1	67322.803	71.908	.001	.13
	Reading Comprehension	53523.020	1	53523.020	68.772	.001	.12
	Vocabulary	42250.631	1	42250.631	43.340	.001	.08
<b>Error</b>	Language	470929.475	503	936.242			
	Reading Comprehension	391467.140	503	778.265			
	Vocabulary	490355.093	503	974.861			
<b>Total</b>	Language	212693320.000	508	146867.048			
	Reading Comprehension	211399484.000	508				
	Vocabulary	206526573.000	508				
<b>Corrected Total</b>	Language	1058397.669	507				
	Reading Comprehension	857827.307	507				
	Vocabulary	1107471.880	507				

**Table 13. Descriptive Statistics Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores for English Language Learners (Adjusted for Pretest Covariate)**

Dependent Variable (SAT 10 Posttest)	Group	N	Mean SAT 10
Language	<i>Edge</i>	351	653.2
	Control	157	628.1
	Total	508	640.6
Reading Comprehension	<i>Edge</i>	351	642.6
	Control	157	622.1
	Total	508	628.3
Vocabulary	<i>Edge</i>	351	666.3
	Control	157	650.7
	Total	508	632.1

### Language Growth

The SAT 10 Language subtest scores for English language learners in classes using *Edge* (Experimental Group) were compared to the SAT 10 Language subtest scores of English language learners in classes using other reading/language arts programs (Control Group). ANCOVA was used to evaluate the difference in Language subtest scores (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial language proficiency levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place English language learners in the *Edge* Group and the Control Group on the same baseline.

The results show a significant difference in language skills between English language learners in the *Edge* Group and English language learners in the Control Group ( $df=1/508$ ;  $F=71.91$ ;  $p<.001$ ) when initial language proficiency is controlled. The average Language subtest score for English language learners in the *Edge* Group (Mean=653) was significantly greater than the average Language subtest score achieved by English language learners in the Control Group (Mean=628). *Edge* use accounted for approximately 13% of the variation in Language subtest scores (Eta squared=.13). This means that about 13% of the growth in reading language achievement can be explained by whether or not English language learners used the *Edge* program. The results are summarized in Table 13 (see above).

### Reading Comprehension Growth

The SAT 10 Reading Comprehension subtest scores for English language learners in classes using *Edge* (Experimental Group) were compared to the SAT 10 Reading Comprehension subtest scores of English language learners in classes using other reading/language arts programs (Control Group). ANCOVA was used to evaluate the difference in Reading Comprehension subtest scores (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial reading comprehension proficiency levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place English language learners in the *Edge* Group and the Control Group on the same baseline.

The results show a significant difference in reading comprehension achievement between English language learners in the *Edge* Group and English language learners in the Control Group ( $df=1/508$ ;  $F=68.77$ ;  $p<.001$ ) when initial reading comprehension proficiency is controlled. The average Reading Comprehension subtest score for English language learners in the *Edge* Group (Mean=643) was significantly greater than the average Reading Comprehension subtest score achieved by English language learners in the Control Group (Mean= 622). *Edge* use accounted for approximately 12% of the variation in Reading Comprehension subtest scores (Eta squared=.12). This means that about 12% of the growth in reading comprehension achievement can be explained by whether or not English language learners used the *Edge* program. The results are summarized in Table 13 (see above).

### **Vocabulary Growth**

The SAT 10 Vocabulary subtest scores for English language learners in classes using *Edge* (Experimental Group) were compared to the SAT 10 Vocabulary subtest scores of English language learners in classes using other reading/language arts programs (Control Group). ANCOVA was used to evaluate the difference in Vocabulary subtest scores (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial vocabulary proficiency levels of the students (covariate). The SAT 10 pretest scores were used as the covariate to place English language learners in the *Edge* Group and Control Group on the same baseline.

The results show a significant difference in vocabulary achievement between English language learners in the *Edge* Group and English language learners in the Control Group ( $df=1/508$ ;  $F=43.34$ ;  $p<.001$ ) when initial vocabulary proficiency is controlled. The average Vocabulary subtest score for English language learners in the *Edge* Group (Mean=666) was significantly greater than the average Vocabulary subtest score achieved by English language learners in the Control Group (Mean=651). *Edge* use accounted for approximately 8% of the variation in Vocabulary subtest scores (Eta squared=.08). This means that about 8% of the growth in vocabulary achievement can be explained by whether or not English language learners used the *Edge* program. The results are summarized in Table 13 (see above).

## Grade Level Analysis

For each grade level included in the study (grades 9 through 12), the overall growth in reading and language skills for students in classes using *Edge* (Experimental Group) as measured by the SAT 10 Language, Reading Comprehension, and Vocabulary subtests was compared to the overall growth in reading and language skills of students in classes who used alternative instructional programs (Control Group) as measured by the SAT 10 Language, Reading Comprehension, and Vocabulary subtests. MANCOVA was used to evaluate the difference in a composite skill score (dependent variable) between *Edge* users and non-*Edge* users (independent variable) controlling for the initial skill levels of the students (covariate) in each grade level. The SAT 10 pretest scores were used as the covariate to place students in the *Edge* Group and the Control Group on the same baseline. The comparisons were based on 252 students in grade nine, 228 students in grade ten, 137 students in grade eleven, and 92 students in grade twelve (see Table 14, below).

**Table 14. Number of Students by Grade**

Grade	Group	N
Grade 9	<i>Edge</i>	149
	Control	103
	Total	252
Grade 10	<i>Edge</i>	164
	Control	64
	Total	228
Grade 11	<i>Edge</i>	110
	Control	27
	Total	137
Grade 12	<i>Edge</i>	67
	Control	25
	Total	92

Consistent with the overall findings, the results show a significant difference in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest scores between students at each grade level in the *Edge* Group and those in the Control Group when initial reading and language proficiency levels are controlled ( $p < .01$ ). *Edge* use accounted for approximately 10% of the variation in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest scores in grade nine (Eta squared=.10), 13% of the variance in grade ten (eta squared=.13), 13% of the variance in grade eleven (eta squared=.13), and 25% of the variance in grade twelve (eta squared=.13). This means that between 10-25% of the growth in language, reading comprehension, and vocabulary achievement at each grade level can be explained by whether or not students used the *Edge* program. Caution should be used in interpreting these findings for grades with smaller numbers of students represented, particularly grade twelve. The results, using Pillai's Trace, are summarized in Table 15 (see below).

**Table 15. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores by Grade Level**

Grade Level	Effect		Value	F	Hypothesis df	Error df	Significance	Partial Eta Squared
Grade 9	Intercept	Pillai's Trace	.117	10.871(a)	3	245	.001	.12
	Language Pretest	Pillai's Trace	.176	17.416(a)	3	245	.001	.18
	Reading Comprehension Pretest	Pillai's Trace	.095	8.566(a)	3	245	.001	.10
	Vocabulary Pretest	Pillai's Trace	.316	37.665(a)	3	245	.001	.33
	Study Group	Pillai's Trace	.095	8.615(a)	3	245	.001	.10
Grade 10	Intercept	Pillai's Trace	.149	12.853(a)	3	221	.001	.15
	Language Pretest	Pillai's Trace	.133	11.258(a)	3	221	.001	.13
	Reading Comprehension Pretest	Pillai's Trace	.452	60.828(a)	3	221	.001	.45
	Vocabulary Pretest	Pillai's Trace	.278	28.314(a)	3	221	.001	.28
	Study Group	Pillai's Trace	.128	10.857(a)	3	221	.001	.13
Grade 11	Intercept	Pillai's Trace	.073	3.408(a)	3	130	.020	.07
	Language Pretest	Pillai's Trace	.161	8.305(a)	3	130	.001	.16
	Reading Comprehension Pretest	Pillai's Trace	.145	7.339(a)	3	130	.001	.15
	Vocabulary Pretest	Pillai's Trace	.280	16.855(a)	3	130	.001	.28
	Study Group	Pillai's Trace	.132	6.584(a)	3	130	.001	.13
Grade 12	Intercept	Pillai's Trace	.049	1.471(a)	3	85	.228	.05
	Language Pretest	Pillai's Trace	.235	8.693(a)	3	85	.001	.24
	Reading Comprehension Pretest	Pillai's Trace	.231	8.506(a)	3	85	.001	.23
	Vocabulary Pretest	Pillai's Trace	.447	22.938(a)	3	85	.001	.45
	Study Group	Pillai's Trace	.245	9.219(a)	3	85	.001	.25

## Gender and Linguistic Background Analysis

As a final step in the analysis we explored whether or not *Edge* was differentially effective between male and female students and among students of different linguistic backgrounds. In other words, we investigated whether *Edge* resulted in greater gains for either male or female students or within any linguistic group. To this end, the overall growth in reading and language skills for students in classes using *Edge* (Experimental Group) as measured by the SAT 10 Language, Reading Comprehension, and Vocabulary subtests was compared to the overall growth in reading and language skills for students in classes using other instructional programs (Control Group) as measured by the SAT 10 Language, Reading Comprehension, and Vocabulary subtests considering both the gender and linguistic background of the students. MANCOVA was used to evaluate the difference in a composite skill score (dependent variable) between *Edge* users and non-*Edge* users (independent variable) of different gender and linguistic backgrounds controlling for the initial skill levels of the students (covariate) in each group. The SAT 10 pretest scores were used as the covariate to place students in the *Edge* Group and the Control Group on the same baseline. The gender comparisons were based on 375 female students and 442 male students. The linguistic background comparisons were based on 243 students whose primary language was identified as English, 338 students whose primary language was identified as Spanish, 83 students whose primary language was identified as one of the Asian languages, and another 153 students whose primary language was identified as “other.” The counts for gender and linguistic background are presented in Table 16 (see below).

**Table 16. Number of Students by Gender and Linguistic Background**

	Group	N
<b>Gender</b>	Female	375
	Male	442
	Total	817
<b>Linguistic Background</b>	English	243
	Spanish	338
	Asian	83
	Other	153
	Total	817

The main effect for Study Group (whether or not the student used *Edge*), was again confirmed; there was a significant difference in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest scores between students in the *Edge* Group and students in the Control Group when initial reading and language proficiency levels were controlled ( $F=27.30$ ;  $df=3/816$ ;  $p<.01$ ). *Edge* use accounted for approximately 9% of the variation in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest scores overall. There was also a significant main effect for both gender ( $F=3.01$ ;  $df=3/816$ ;  $p<.03$ ) and linguistic background ( $F=2.01.30$ ;  $df=9/816$ ;  $p<.04$ ), but accounting for about 1% of the variance or less in each case. This suggests there was little difference in how students of different gender and from different linguistic groups grew during the study, when initial reading and language levels were controlled.

The interaction effects for linguistic background by Study Group ( $F=1.20.2.30$ ;  $df=9/816$ ;  $p>.05$ ) and gender by study group ( $F=.52$ ;  $df=3/816$ ;  $p>.05$ ) were not statistically significant. This indicates that while *Edge* use results in more growth, it is not significantly better or worse for either gender or for any linguistic group. The results, using Pillai's Trace, are summarized in Table 17 (see below).

**Table 17. Multivariate Analysis of Covariance Comparison of *Edge* Group and Control Group Language, Reading Comprehension, and Vocabulary SAT 10 Posttest Scores by Gender and Linguistic Background**

Effect		Value	F	Hypothesis df	Error df	Significance	Partial Eta Squared
<b>Intercept</b>	Pillai's Trace	.105	30.990(b)	3	796	.001	.11
<b>Language Pretest</b>	Pillai's Trace	.137	42.255(b)	3	796	.001	.14
<b>Reading Pretest</b>	Pillai's Trace	.215	72.862(b)	3	796	.001	.22
<b>Vocabulary Pretest</b>	Pillai's Trace	.262	94.170(b)	3	796	.001	.26
<b>Study Group</b>	Pillai's Trace	.093	27.302(b)	3	796	.001	.09
<b>Gender</b>	Pillai's Trace	.011	3.006(b)	3	796	.030	.01
<b>Linguistic Background</b>	Pillai's Trace	.022	2.003	3	2394	.035	.01
<b>Study Group / Gender</b>	Pillai's Trace	.002	.516(b)	3	796	.671	.01
<b>Study Group/ Linguistic Background</b>	Pillai's Trace	.014	1.206	9	2394	.287	.01

## SUMMARY AND DISCUSSION

This study examined the effectiveness of Hampton-Brown *Edge*, a core Reading/Language Arts Program designed for high school students who have not mastered essential language, reading, and vocabulary skills. The study examined the effectiveness of *Edge* instruction for striving reader and English language learner classrooms together; the study also examined the effectiveness of the *Edge* program for classrooms comprised of striving readers and for classrooms comprised of English language learners separately. Differences in *Edge* effectiveness were also examined for students at different grade levels, between males and females, and among students of different linguistic backgrounds.

### Study Design

Between August 2007 and June 2008, approximately 1,800 students in 84 classrooms in 37 different schools in 18 districts representing all regions of the United States participated in a controlled study of *Edge* program effectiveness. Using a quasi-experimental, pre-post design, this study compared the growth in language, reading comprehension, and vocabulary skills between students who received instruction using *Edge* (Experimental Group) and a comparable group of students who received instruction using other programs, without the benefit of *Edge* (Control Group). Student growth in language, reading comprehension, and vocabulary was measured by comparing scores from the Stanford 10 Achievement Test, Abbreviated Battery (SAT 10), at the beginning and end of the 2007-2008 school year.

Students in both the experimental (*Edge*) and the control groups took a pretest (SAT 10) at the beginning of the school year to obtain a baseline measure of student reading and language skills. Students in the Experimental Group then received instruction using the *Edge* program, while those in the Control Group received instruction using other programs. At the end of the school year (May and June of 2008), students in both the *Edge* Group and the Control Group were administered a posttest (SAT 10). The results from the SAT 10 pretest and posttest were compared statistically to determine the level of growth in language, reading comprehension, and vocabulary skills. Students in both the *Edge* and the control groups were well-matched in ability and demographically. The study controlled for any initial differences in the reading and language skills of students in the experimental and control groups during analysis using ANCOVA.

### Summary Results

#### Overall Results

Students enrolled in *Edge* classrooms achieved significantly greater gains in language, reading comprehension, and vocabulary skills than students enrolled in classes that did not use *Edge*. Students who used *Edge* increased their SAT 10 Language, Reading Comprehension, and Vocabulary subtest scores by approximately 20 points more than those students in the Control Group who did not use *Edge*. Students gained more than three times (300%) as much in Reading Comprehension as those students who did not use *Edge*, more than twice (200%) as much in Language and one and a half times (150%) as much in Vocabulary. When controlling for students' initial ability using analysis of covariance, the findings of this study are quite significant. *Edge* students finished the year with scores that were 21 scale-score points higher in Language, 19 scale-score points higher in Reading Comprehension, and 15 scale-score points higher in Vocabulary than the Control Group on the SAT 10 measures. Differences in SAT 10 Language, Reading Comprehension, and Vocabulary gains were statistically significant at the  $p < .001$  level. About 13% of the variation in growth in language, reading comprehension, and vocabulary was accounted for by *Edge* use. The effect size for all three areas measured was

substantial (Language=+.42; Reading Comprehension=+.40; Vocabulary=+.27). Growth among students using *Edge* was most pronounced for Language and Reading Comprehension.

It is clear that students who used *Edge* showed significantly greater gains in Language, Reading Comprehension, and Vocabulary than students who did not use *Edge*. The effect sizes—+.40 or greater for Language and Reading Comprehension and +.27 for Vocabulary—are particularly telling. These effect sizes are well above the average effect sizes of other reading programs as reported by Slavin (2008) in his comprehensive synthesis of middle and high school reading program research studies. Slavin reported mean effect sizes for mixed-method reading programs at about +.23 and for instructional-process reading programs at about +.21. The very large effect identified for this study indicates that students who used *Edge* performed well above the students who did not use *Edge*.

### **Striving Reader and English Language Learner Results**

Both striving readers and English language learners in classrooms using *Edge* achieved greater gains in Language, Reading Comprehension, and Vocabulary than their counterparts in classes that did not use *Edge*.

Striving readers enrolled in classes using *Edge* showed significantly greater gains in reading and language skills than striving readers enrolled in classes that did not use *Edge*. Approximately 7% of the variation in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest score (Eta squared=.07) skill growth was accounted for by *Edge* use. This means that about 7% of the growth in language, reading comprehension, and vocabulary achievement can be explained by whether or not striving readers used *Edge*. Growth among striving readers using *Edge* was most pronounced for Language and Reading Comprehension as measured by SAT 10 subtests.

English language learners enrolled in classes using *Edge* showed significantly greater gains in reading and language skills than English language learners enrolled in classes that did not use *Edge*. Approximately 18% of the variation in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest score (Eta squared=.18) skill growth was accounted for by *Edge* use. This means that about 18% of the growth in language, reading comprehension, and vocabulary achievement can be explained by whether or not English language learners used *Edge*. Growth among English language learners using *Edge* was most pronounced for Language and Reading Comprehension as measured by SAT 10 subtests.

### **Grade Level Results**

Students in classes using *Edge* at all grade levels (grades 9-12) included in this study achieved significantly greater gains in SAT 10 Language, Reading Comprehension, and Vocabulary scores than their counterparts who were in classes that did not use *Edge*. The benefits of using *Edge* were seen at all grade levels. *Edge* use accounted for approximately 10% of the variation in a composite of the SAT 10 Language, Reading Comprehension, and Vocabulary posttest scores in grade nine, 13% of the variance in grade ten, and 13% of the variance in grade eleven. While the results for grade twelve showed *Edge* use accounting for 25% of the variance, this may have been the result of the small number of students participating for grade twelve. This means that between 10-25% of the growth in language, reading comprehension, and vocabulary achievement at each grade level can be explained by whether or not students used the *Edge* program.

### **Gender and Linguistic Background Results**

The analyses examining the interaction between *Edge* use and gender and linguistic background confirmed that students

using *Edge* achieved greater gains in language, reading comprehension, and vocabulary skills. Significantly greater gains for either gender or any one linguistic background were not noted. There were no significant differences in *Edge* effectiveness between male and female students and no significant differences in *Edge* effectiveness among students of different linguistic backgrounds. *Edge* appears equally effective for students across genders and linguistic backgrounds.

## Conclusion

Students enrolled in classes using the *Edge* program achieve significantly greater gains in language, reading comprehension, and vocabulary than students enrolled in classes that do not use *Edge*. *Edge* was found to be effective for both striving readers and English language learners and across grade levels (9-12). *Edge* appears equally effective for students regardless of gender or linguistic background.

Overall, *Edge* use accounted for about 12% of the variance in language, reading comprehension, and vocabulary gains. The greatest gains were seen in language and reading comprehension skill areas. While the level of variance differed somewhat for striving readers and English language learners and across grade levels, the amount of variance accounted for was, for the most part, in a range from 7% to 18%. These results are quite substantial, particularly when viewed in light of the many factors outside of *Edge* use that can affect academic growth. School instructional programs are only one of many factors influencing student growth. Some of these factors include the initial skill level and background characteristics of the student and other school and home environment influences. That as much as 18% of student growth can be accounted for by *Edge* use is very significant.

To understand the magnitude of the resultant difference between *Edge* users and those who did not use *Edge*, we looked at effect size. We found effect sizes of +.42 for Language, +.40 for Reading Comprehension, and +.27 for Vocabulary. This is a very large effect indicating that the students who used *Edge* performed well above the students who did not use *Edge*.

Moreover, these findings are particularly significant in light of the pre- and posttest measure used. The SAT 10 is a standardized, national, norm-referenced test; it measures achievement in broad strokes to allow comparison across diverse curricular and instructional settings. Moreover, it is largely used with the total population of students, not just striving readers and English language learners. Therefore, the SAT 10 may not be as instructionally sensitive to the specific areas addressed in the *Edge* instructional program. So, that as much as 18% of student growth can be accounted for by *Edge* use is very significant in light of the nature of the SAT 10.

The findings of this study demonstrate that students using *Edge* as a core intervention Reading/Language Arts Program can make significant improvement during one school year's time as compared to students using other intervention programs.



## APPENDIX A

### Author Information

#### **David W. Moore, Ph.D.**

Professor of Education, Arizona State University

Dr. David Moore taught high school social studies and reading in Arizona public schools before entering college teaching. He currently teaches secondary school teacher preparation courses in adolescent literacy. He co-chaired the International Reading Association's Commission on Adolescent Literacy and is actively involved with several professional associations. His twenty-five year publication record balances research reports, professional articles, book chapters, and books. Noteworthy publications include the International Reading Association position statement on adolescent literacy and the Handbook of Reading Research chapter on secondary school reading. Recent books include *Teaching Adolescents Who Struggle with Reading (2nd ed.)* and *Principled Practices for Adolescent Literacy*.

#### **Deborah J. Short, Ph.D.**

Senior Research Associate, Center for Applied Linguistics

Dr. Deborah Short is a co-developer of the research-validated SIOP Model for sheltered instruction. She has directed quasi-experimental and experimental studies on English language learners funded by the Carnegie Corporation, the Rockefeller Foundation, and the U.S. Dept. of Education. She recently chaired an expert panel on adolescent ELL literacy and prepared a policy report: *Double the Work: Challenges and Solutions to Acquiring Language and Academic Literacy for Adolescent English Language Learners*. She has also conducted research on secondary level newcomer programs. Her articles have appeared in the *TESOL Quarterly*, *the Journal of Educational Research*, *Educational Leadership*, *Education and Urban Society*, *TESOL Journal*, *Social Education*, and *Journal of Research in Education*.

#### **Michael W. Smith, Ph.D.**

Professor, College of Education, Temple University

Dr. Michael Smith joined the ranks of college teachers after eleven years of teaching high school English. He has won awards for his teaching at both the high school and college levels. His research focuses on how experienced readers read and talk about texts, as well as what motivates adolescents' reading and writing both in and out of school. He has written eight books and monographs, including *"Reading Don't Fix No Chevys": Literacy in the Lives of Young Men*, for which he and his co-author received the 2003 David H. Russell Award for Distinguished Research in the Teaching of English. His writing has appeared in such journals as *Communication Education*, *English Journal*, *Journal of Adolescent & Adult Literacy*, *Journal of Educational Research*, *Journal of Literacy Research*, and *Research in the Teaching of English*.

#### **Alfred W. Tatum, Ph.D.**

Associate Professor and Reading Clinic Director, University of Illinois at Chicago, Chicago, Illinois

Dr. Alfred Tatum began his career as an eighth-grade teacher, later becoming a reading specialist and discovering the power of texts to reshape the life outcomes of struggling readers. His current research focuses on the literacy development of African American adolescent males, and he provides teacher professional development to urban middle and high schools. He serves on the National Advisory Reading Committee of the National Assessment of Educational Progress (NAEP) and is active in a number of literacy organizations. In addition to his book *Teaching Reading to Black Adolescent Males: Closing the Achievement Gap*, he has published in journals such as *Reading Research Quarterly*, *The Reading Teacher*, *Journal of Adolescent & Adult Literacy*, *Educational Leadership*, *the Journal of College Reading and Learning*, and *Principal Leadership*.



## Research Base for Hampton-Brown *Edge*

### Reading / Adolescent Literacy

- Agee, J. (2000). What is effective literature instruction? A study of experienced high school English teachers in differing grade- and ability-level classes. *Journal of Literacy Research*, 32, 303–348.
- Alexander, P. A., & Jetton, T. L. (2000). Learning from text: A multidimensional and developmental perspective. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 285–310). Mahwah, NJ: Erlbaum.
- Alfassi, M. (1998). Reading for meaning: The efficacy of reciprocal teaching in fostering reading comprehension in high school students in remedial reading classes. *American Educational Research Journal*, 35, 309–332.
- Alvermann, D. (2002). Effective literacy instruction for adolescents. *Journal of Literacy Research*, 34, 189–208.
- Alvermann, D., Fitzgerald, J., & Simpson, M. (2006). Teaching and learning in reading. In P. Alexander & P. Winne (Eds.), *Handbook of educational psychology* (2nd ed., pp. 427–455). Mahwah, NJ: Erlbaum.
- Alvermann, D., & Moore, D. W. (1991). Secondary school reading. In R. Barr, M. Kamil, P. Mosenthal, and P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 951–983). White Plains, NY: Longman.
- Alvermann, D., Hinchman, K., Moore, D., Phelps, S., & Waff, D. (In press). *Reconceptualizing the literacies in adolescents' lives*, (2nd ed.). Mahwah, NJ: Erlbaum.
- Alvermann, D., Young, J., Weaver, D., Hinchman, K., Moore, D., Phelps, S., & Thrash, E. (1996). Middle and high school students' perceptions of how they experience text-based discussions: A multicase study. *Reading Research Quarterly*, 31, 244–267.
- Applebee, A. N., Langer, J. A., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high school English. *American Educational Research Journal*, 40, 685–730.
- Athanases, S. (1998). Diverse learners, diverse texts: Exploring identity and difference through literary encounters. *Journal of Literacy Research*, 30, 273–296.
- Balfanz, R., & MacIver, D. (2000). Transforming high-poverty urban middle schools into strong learning institutions: Lessons from the first five years of the Talent Development Middle School. *Journal of Education for Students Placed at Risk*, 5 (1 & 2), 137–158.
- Biancarosa, C., & Snow, C. (2006). *Reading next—A vision for action and research in middle and high school literacy: A report to the Carnegie Corporation of New York* (2nd ed.). Washington, DC: Alliance for Excellent Education.
- Coles, R. (1989). *The call of stories: Teaching and the moral imagination*. Boston: Houghton Mifflin.
- Durkin, D. (1978–1979). What classroom observations reveal about reading comprehension instruction. *Reading Research Quarterly*, 14, 481–533.
- Esslin, M. (1987). *The field of drama: How the signs of drama create meaning on stage and screen*. London: Methuen Drama.
- Fairbanks, C. M. (1998). Nourishing conversations: Literacy, democracy, and urban adolescents. *Journal of Literacy Research*, 30, 187–203.

- Farstrup, A. E., & Samuels, S. J. (2002). *What research has to say about reading instruction* (3rd ed.). Newark, DE: International Reading Association.
- Fielding, A., Schoenbach, R., & Jordan, M. (2003). *Building academic literacy: Lessons from reading apprenticeship classrooms, grades 6–12*. San Francisco, CA: Jossey-Bass.
- Finders, Margaret. (1996). “Just girls”: Literacy and allegiance in junior high school. *Written Communication*, 13 (1), January 93–129.
- Finn, P. (1999). *Literacy with an attitude: Educating working-class children in their own self-interest*. New York: SUNY.
- Fordham, S. (1996). *Blacked out: Dilemmas of race, identity and success at Capital High*. Chicago, IL: University of Chicago Press.
- Franzak, J. K. (2006). Zoom: A review of the literature on marginalized adolescent readers, literacy theory, and policy implications. *Review of Educational Research*, 76, 209–248.
- Gee, J. (1996). *Social linguistics and literacies: Ideology in discourses* (2nd ed.). London: Taylor & Francis.
- Gersten, R., Fuchs, L. S., Williams, J. P., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of research. *Review of Educational Research*, 71, 279–320.
- Greenleaf, C. L., Schoenbach, R., Cziko, C., & Mueller, F. L. (2001). Apprenticing adolescent readers to academic literacy. *Harvard Educational Review*, 71, 79–129.
- Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. In M. J. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 406–424). Mahwah, NJ: Erlbaum.
- Guzzetti, B. & Gamboa, M. (2004). ‘Zines for social justice: Adolescent girls writing on their own. *Reading Research Quarterly*, 39, 408–437.
- Hamel, F., & Smith, M. (1998). You can’t play if you don’t know the rules: Interpretive conventions and teaching of literature to students in lower-track classes. *Reading & Writing Quarterly*, 14, 355–377.
- Hinchman, K, Payne-Bourcy, L., Thomas, H., & Chandler-Olcott, K. (2002). Representing adolescents’ literacies: Case studies of three white males. *Reading Research & Instruction*, 41, 229–246.
- Hull, G., & Schultz, K. (2002). *School’s out!: Bridging out-of-school literacies with classroom practice*. New York: Teachers College Press.
- Jetton, T. L., & Alexander, P. A. (2004). Domains, teaching, and literacy. In T. L. Jetton & J.A. Dole (Eds.), *Adolescent literacy research and practice* (pp. 15–39). New York: Guilford Press.
- Jetton, T. L., Dole, J. A. (Eds.). (2004). *Adolescent literacy research and practice*. New York: Guilford Press.
- Jiménez, R. (1997). The strategic reading abilities and potential of five low-literacy Latina/o readers in middle school. *Reading Research Quarterly*, 32, 224–243.
- Kamil, M. L. (2003). *Adolescents and literacy: Reading for the 21st century*. Washington, DC: Alliance for Excellent Education.
- Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. New York: Cambridge University Press.
- Langer, J. A. (2002). *Effective literacy instruction: Building successful reading and writing programs*. Urbana, IL: National Council of Teachers of English.

- Langer, J. A. (2001). Beating the odds: Teaching middle and high school students to read and write well. *American Educational Research Journal*, 38, 837–880.
- Lankshear, C., & Knobel, M. (2003). *New literacies: Changing knowledge and classroom learning*. Buckingham, UK: Open University Press.
- Lee, C. (1995). A culturally based cognitive apprenticeship: Teaching African American high school students skills in literary interpretation. *Reading Research Quarterly*, 30, 608–630.
- Livdahl, B., Smart, K., Wallman, J., Herbert, T., Geiger, D., & Anderson, J. (1995). *Stories from response-centered classrooms: Speaking, questioning, and theorizing for the center of the action*. New York: Teachers College Press.
- Mahiri, J. (Ed.). (2004). *What they don't learn in school: Literacy in the lives of urban youth*. New York: Peter Lang.
- Marshall, J. D., Smagorinsky, P., & Smith, M. W. (1995). *The language of interpretation: Patterns of discourse in discussions of literature*. Urbana, IL: National Council of Teachers of English.
- Moje, E. (1996). “I teach students, not subjects”: Teacher-student relationships as contexts for secondary literacy. *Reading Research Quarterly*, 31, 172–195.
- Moje, E. (2000). “To be part of the story”: The literacy practices of gangsta adolescents. *Teachers College Record*, 102, 651–690.
- Moje, E., Ciechanowski, K., Kramer, K., Ellis, L., Carrillo, R., & Collazo, T. (2004). Working toward third space in content area literacy: An examination of everyday funds of knowledge and discourse. *Reading Research Quarterly*, 39, 38–70.
- Moore, D. W., Bean, T. W., Birdyshaw, D., & Rycik, J. A. for the Commission on Adolescent Literacy of the International Reading Association. (1999). *Adolescent literacy: A position statement*. Newark, DE: International Reading Association.
- Moore, D. W., Readence, J. E., & Rickelman, R. J. (1983). An historical exploration of content area reading instruction. *Reading Research Quarterly*, 18, 419–438.
- 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*. Bethesda, MD: National Institute of Child Health and Human Development, National Institutes of Health.
- Neilsen, L. (2006). Playing for real: Texts and the performance of identity. In D. Alvermann, K. Hinchman, D. Moore, S. Phelps, and D. Waff (Eds.), *Reconceptualizing the literacies in adolescents' lives*, (2nd ed.). Mahwah, NJ: Erlbaum.
- Nokes, J. D., & Dole, J. A. (2004). Helping adolescent readers through explicit strategy instruction. In T. L. Jetton & J.A. Dole (Eds.). *Adolescent literacy research and practice* (pp. 162–182). New York: Guilford Press.
- Nystrand, M. with Gamoran, A., Kachur, R., & Prendergast, C. (1997). *Opening dialogue: Understanding the dynamics of language and learning in the English classroom*. New York: Teachers College Press.
- Payne-Bourcy, L., & Chandler-Olcott, K. (2003). Spotlighting social class: An exploration of one adolescent's language and literacy practices. *Journal of Literacy Research*, 35, 551–590.

- Pearson, P. D., Roehler, L. R., Dole, J. A., & Duffy, G. G. (1992). Developing expertise in reading comprehension. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about reading instruction* (2nd ed., pp. 145–199). Newark, DE: International Reading Association.
- Penney, C. (2002). Teaching decoding skills to poor readers in high school. *Journal of Literacy Research*, *34*, 99–118.
- Pressley, M., & Afflerbach, P. (1995). *Verbal protocols of reading: The nature of constructively responsive reading*. Hillsdale, NJ: Erlbaum.
- Rabinowitz, P., & Smith, M. W. (1998). *Authorizing readers: Resistance and respect in the teaching of literature*. New York: Teachers College Press.
- RAND Reading Study Group. (2002). *Reading for understanding: Toward an R&D program in reading comprehension*. Santa Monica, CA: Science and Technology Policy Institute, RAND Education.
- Rex, L. (2001). The remaking of a high school reader. *Reading Research Quarterly*, *36*, 288–314.
- Rosenshine, B., Meister, C., & Chapman, S. (1996). Teaching students to generate questions: A review of the intervention studies. *Review of Educational Research*, *66*, 181–221.
- Schoenbach, R., Greenleaf, C., Cziko, C., & Hurwitz, L. (1999). *Reading for understanding: A guide to improving reading in middle and high school classrooms*. San Francisco, CA: Jossey-Bass.
- Short, D. J., & Fitzsimmons, S. (2007). *Double the work: Challenges and solutions to acquiring language and academic literacy for adolescent English language learners: A report to Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Smith, M. W., & Wilhelm, J. (2006). *Going with the flow: How to engage boys (and girls) in their literacy learning*. Portsmouth, NH: Heinemann.
- Smith, M. W., & Wilhelm, J. (2002). *“Reading don’t fix no Chevys”: Literacy in the lives of young men*. Portsmouth, NH: Heinemann.
- Sturtevant, E., & Linek, W. (2003). The instructional beliefs and decisions of middle and secondary teachers who successfully blend literacy and content. *Reading Research & Instruction*, *43*, 74–90.
- Tatum, A. W. (2005). *Teaching reading to black adolescent males: Closing the achievement gap*. Portland, ME: Stenhouse.
- Tatum, A. W. (In press). Building the textual lineages of African American male adolescents. In K. Beers (Ed.), *All together now: Critical issues in adolescent literacy*. Portsmouth, NH: Heinemann.
- Tatum, A. W. (2000). Breaking down barriers that disenfranchise African American adolescent readers in low-level tracks. *Journal of Adolescent & Adult Literacy*, *44*(1), 52–64.
- Thomson, J. (1987). *Understanding teenagers’ reading: Reading processes and the teaching of literature*. Melbourne: Methuen Australia Ltd.
- Worthy, J., Moorman, M., & Turner, M. (1999). What Johnny likes to read is hard to find in school. *Reading Research Quarterly*, *34*, 12–27.

## Vocabulary

- Alvermann, D. (2000). Classroom talk about text: Is it dear, cheap, or a bargain at any price? In B. M. Taylor, M. F. Graves, & P. van den Broek (Eds.), *Reading for meaning: Fostering comprehension in the middle grades*. New York: Teachers College Press.

- Anderson, R. C., & Nagy, W. E. (1992, Winter). The vocabulary conundrum. *American Educator*, 16(4), 14–18, 44–47.
- August, D., Carlo, M., Dressler, C., & Snow, C. (2005). The critical role of vocabulary development for English language learners. *Learning Disabilities: Research & Practice*, 20(1), 50–57.
- Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York: Guilford Press.
- Biemiller, A. (2005). Vocabulary development and instruction: A prerequisite for school learning. In D. Dickinson & S. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2.), New York: Guilford Press.
- Bravo, M. A., Hiebert, E. H., & Pearson, P. D. (2005). *Tapping the linguistic resources of Spanish/English bilinguals: The role of cognates in science*. Berkeley: Lawrence Hall of Science, University of California.
- Coxhead, A. (2000). A new academic word list. *TESOL Quarterly*, 34, 213–238.
- Cummins, J. (2003). Reading and the bilingual student: Fact and friction. In G. G. Garcia (Ed.), *English learners: Reading the highest level of English literacy*. Newark, DE: International Reading Association.
- Durkin, D. (1979). What classroom observations reveal about reading comprehension instruction. *Reading Research Quarterly*, 14, 481–538.
- Dutro, S., & Moran, C. (2003). Rethinking English language instruction: An architectural approach. In G. Garcia (Ed.), *English learners: Reaching the highest level of English literacy*. Newark, DE: International Reading Association.
- Gersten, R., & Baker, S. (2000). Effective instruction for English-language learners: What we know about effective instructional practices for English-language learners. *Exceptional Children*, 66(4), 454–470.
- Graves, M. (2000). A vocabulary program to complement and bolster a middle-grade comprehension program. In B. M. Taylor, M. F. Graves, & P. van den Broek (Eds.), *Reading for meaning: Fostering comprehension in the middle grades* (pp. 116–135). Newark, DE: International Reading Association.
- Graves, M. F. (2006). *The vocabulary book: Learning and instruction*. New York: Teachers College Press.
- Harmon, J. M. (2000). Assessing and supporting independent word learning strategies of middle school students. *Journal of Adolescent and Adult Literacy*, 43, 518–527.
- Hart, B., & Risley, T. (1995). *Meaningful differences in the everyday lives of young American children*. Baltimore: Paul H. Brookes.
- Hiebert, E. H., & Kamil, M. L. (2005). *Teaching and learning vocabulary: Bringing research to practice*. Mahwah, NJ: Erlbaum.
- Kamil, M. L., & Bernhardt, E. B. (2004). Reading instruction for English-language learners. In M. F. Graves, C. Juel, & B. B. Graves (Eds.), *Teaching reading in the 21st century* (3rd ed.). Boston: Allyn & Bacon.
- Langer, J. A. (2002). *Effective literacy instruction: Building successful reading and writing programs*. Urbana, IL: National Council of Teachers of English.
- Lublinter, S., & Smetana, L. (2005). The effects of comprehensive vocabulary instruction on Title I students' metacognitive word-learning skills and reading comprehension. *Journal of Literacy Research*, 37(2), 163–200.
- Nagy, W. E. (2005). Why vocabulary instruction needs to be long-term and comprehensive. In E. H. Hiebert & M. L. Kamil (Eds.), *Teaching and learning vocabulary: Bringing research to practice* (pp. 27–44). Mahwah, NJ: Erlbaum.

- Nagy, W. E., & Anderson, R. C. (1984). How many words are there in printed school English? *Reading Research Quarterly*, 19, 304–330.
- Nagy, W. E., Garcia, G. E., Durgunoglu, A. Y., & Hancin-Bhatt, B. (1993). Spanish-English bilingual students' use of cognates in English reading. *Journal of Reading Behavior*, 25, 241–259.
- Nagy, W. E., Herman, P.A., & Anderson, R. C. (1985). Learning words from context. *Reading Research Quarterly*, 20, 233–253.
- 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*. Bethesda, MD: National Institute of Child Health and Human Development, National Institutes of Health.
- Scott, J. A., & Nagy, W. E. (1997). Understanding the definitions of unfamiliar words. *Reading Research Quarterly*, 32, 184–200.
- Stahl, S. A. (1998). Four questions about vocabulary. In C. R. Hynd (Ed.), *Learning from text across conceptual domains*. Mahwah, NJ: Erlbaum.
- Swanborn, M. S. W., & de Glopper, K. (1999). Incidental word learning while reading: A meta-analysis. *Review of Educational Research*, 69, 261–285.

## Oral Reading Fluency

- Bomer, R. (2006). Reading with the mind's ear: Listening to text as a mental action. *Journal of Adolescent & Adult Literacy*, 49, 524.
- Farstrup, A. E., & Samuels, S. J. (2006). *What research has to say about fluency instruction*. Newark, DE: International Reading Association.
- Rasinski, T. V., Padak, N. D., McKeon, C. A., Wilfong, L. G., Friedauer, J. A., & Heim, P. (2005). Is reading fluency a key for successful high school reading? *Journal of Adolescent & Adult Literacy*, 49, 22.
- Winn, B. D., Skinner, C. H., Oliver, R., Hale, A. D., & Ziegler, M. (2006). The effects of listening while reading and repeated reading on the reading fluency of adult learners. *Journal of Adolescent & Adult Literacy*, 49, 524.

## Writing

- Applebee, A. N. (1981). *Writing in the secondary school: English and the content areas* (Research Monograph 21). Urbana, IL: National Council of Teachers of English.
- Applebee, A. N., & Langer, J. (2006). The state of writing instruction in America's schools: What existing data tell us. [Online: <http://cela.albany.edu> ]
- Haskell, R. (2000). *Transfer of learning: Cognition, instruction, and reasoning*. San Diego: Academic Press.
- Hillocks, G., Jr., (1986a). *Research on written composition: New directions for teaching*. Urbana, IL: ERIC and National Conference for Research in English.
- Hillocks, G., Jr. (1986b). The writer's knowl *Edge*: Theory, research, and implications for practice. In A. Petrosky & D. Bartholomae (Eds.), *The teaching of writing* (85th Yearbook of the National Society for the Study of Education, Part II, pp. 71–94). Chicago: National Society for the Study of Education.
- Hillocks, G., Jr., & Smith, M. W. (2003). Grammars and literacy learning. In J. Flood, J. Jensen, D. Lapp, & J. Squire (Eds.), *Handbook of research on teaching the English language arts* (2nd ed., pp. 721–737). Mahwah, NJ: Erlbaum.

National Commission on Writing. (May 2006). Writing and school reform. [Online: [www.writingcommission.org](http://www.writingcommission.org) ]

Smagorinsky, P. (1997). Artistic composing as representational process. *Journal of Applied Developmental Psychology*, 18, 87–105.

Smagorinsky, P., & Coppock, J. (1995). The reader, the text, the context: An exploration of a choreographed response to literature. *Journal of Reading Behavior*, 27, 271–298.

Smagorinsky, P., Zoss, M., & Reed, P. (2006). Residential interior design as complex composition: A case study of a high school senior's composing process. *Written Communication*, 23, 295–330.

Smith, M., Cheville, J., & Hillocks, G., Jr. (2006). "I guess I'd better watch my English": Grammar and the teaching of English language arts. In C. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 263–274). New York: Guilford Press.

Smith, M. W., & Wilhelm, J. (2002). *Reading don't fix no Chevys: Literacy in the lives of young men*. Portsmouth, NH: Heinemann. Smith, M. W., & Wilhelm, J. (2006). *Going with the flow: How to engage boys (and girls) in their literacy learning*. Portsmouth, NH: Heinemann.

Smith, M. W., & Wilhelm, J. (2007). *Getting it right: Fresh approaches to teaching grammar, usage, and correctness*. New York: Scholastic.

## Language & Literacy for ELLs

August, D. (2003). *Supporting the development of English literacy in English language learners: Key issues and promising practices*. Baltimore, MD: Center for Research on the Education of Students Placed At Risk.

August, D., & Shanahan, T. (Eds.). (2006). *Developing literacy in second-language learners: Report of the National Literacy Panel on Language-Minority Children and Youth*. Mahwah, NJ: Erlbaum.

Beck, I. L., Perfetti, C., & McKeown, M. G. (1982). Effects of long-term vocabulary instruction on lexical access and reading comprehension. *Journal of Educational Psychology*, 74, 506–521.

Bernhardt, E. (2005). Progress and procrastination in second language reading. *Annual Review of Applied Linguistics*, 25, 133–150.

Capps, R., Fix, M., Murray, J., Ost, J., Passel, J. S., & Herwanto, S. (2005). *The new demography of America's schools: Immigration and the No Child Left Behind Act*. Washington, DC: Urban Institute.

Carlo, M., August, D., McLaughlin, B., Snow, C., Dressler, C., Lippman, D., Lively, T., & White, C. (2004). Closing the gap: Addressing the vocabulary needs of English-language learners in bilingual and mainstream classes. *Reading Research Quarterly*, 39, 188–215.

Echevarria, J., Short, D., & Powers, K. (2006). School reform and standards-based education: How do teachers help English language learners? *Journal of Educational Research*.

Echevarria, J., Vogt, M. E., & Short, D. (2004). *Making content comprehensible for English learners: The SIOP model* (2nd Ed.). Boston: Allyn & Bacon.

Garcia, G. E., & Godina, H. (2004). Addressing the literacy needs of adolescent English language learners. In T. Jetton and J. Dole (Eds.), *Adolescent literacy: Research and practice* (pp. 304–320). New York: Guilford Press.

Genesee, F., Lindholm-Leary, K., Saunders, W., & Christian, D. (2006). *Educating English language learners: A synthesis of research evidence*. New York: Cambridge University Press.

- Gonzalez, N., Moll, L. C., Floyd-Tenery, M., Rivera, A., Rendon, P., Gonzalez, R., & Amanti, C. (1993). *Teacher research on funds of knowledge: Learning from households* (Educational Practice Report 6). Washington, DC: National Center for Research on Cultural Diversity and Second Language Learning.
- Graves, M. (2006). *The vocabulary book: Learning and instruction*. New York: Teachers College Press.
- Gumperz, J., Cook-Gumperz, J., & Szymanski, M. (1999). *Collaborative practices in bilingual cooperative learning classrooms* (Research Report No. 7). Santa Cruz, CA & Washington, DC: Center for Research on Education, Diversity & Excellence.
- Kim, H. S., & Kamil, M. L. (2004). Adolescents, computer technology, and literacy. In T.L. Jetton and J.A. Dole (Eds.), *Adolescent literacy research and practice* (pp. 351–368). New York: Guilford Press.
- Moje, E. B., Ciechanowski, K. M., Kramer, K., Ellis, L., Carrillo, R., Collazo, T. (2004). Working toward third space in content area literacy: An examination of everyday funds of knowl *Edge* and discourse. *Reading Research Quarterly*, 39(1), 38–69.
- Nagy, W., & Scott, J. (2000). Vocabulary processes. In R. Barr, M. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 3, pp. 269–284). Mahwah, NJ: Erlbaum.
- New York City Department of Education. (2004). *The class of 2000 final longitudinal report: A three year follow-up study*. New York: New York City Department of Education, Division of Assessment and Accountability.
- Short, D. J., & Fitzsimmons, S. (2007). *Double the work: Challenges and solutions to acquiring language and academic literacy for adolescent English language learners: A report to Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- State of New Jersey Department of Education. (2006). *Preliminary analysis of former limited English proficient students' scores on the New Jersey language arts and literacy exam, 2005–2006*. Trenton, NJ: State of New Jersey Department of Education, New Jersey State Assessment Office of Title I.
- Thomas, W., & Collier, V. (2002). *A national study of school effectiveness for language minority students' long-term academic achievement*. Santa Cruz, CA and Washington, DC: Center for Research on Education, Diversity & Excellence.
- Valdés, G. (1999). Incipient bilingualism and the development of English language writing abilities in the secondary school. In C. J. Faltis & P. Wolfe (Eds.), *So much to say: Adolescents, bilingualism, & ESL in the secondary school* (pp. 138–175). New York: Teachers College Press.
- Warschauer, M., Grant, D., Del Real, G., & Rousseau, M. (2004). Promoting academic literacy with technology: Successful laptop programs in K-12 schools. *System*, 32, 525–537.

## APPENDIX C

# References

- Harcourt Assessment, Inc. (2002). *Stanford Achievement Test series, Tenth Edition technical data report*. San Antonio, TX: Author.
- National Geographic School Publishing (2007). *Adolescent literacy: Best practices & research base for Hampton-Brown Edge*. Carmel, CA: Author.
- Slavin, R.E., Cheung, A., Groff, C., & Lake, C. (2008). Effective reading programs for middle and high schools: A best-evidence synthesis. *Reading Research Quarterly*, 43(3), 290–322.
- What Works Clearinghouse. (2008). *What Works Clearinghouse Procedures and Standards Handbook (Version 2.0)*. Washington, DC: U.S. Department of Education, Institute of Education Sciences.

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