

THE EFFICACY OF *FOUNDATIONS & FRAMEWORKS*  
ON ELEMENTARY STUDENTS' READING ACHIEVEMENT  
IN URBAN CHRISTIAN SCHOOLS

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### Abstract

This study was designed to assess the efficacy of *Foundations & Frameworks* (F&F), an instructional program emphasizing reading comprehension, on fourth and fifth grade students' reading achievement, as measured by the *Stanford Achievement Test* and the *Gates-MacGinitie Reading Test*. Seven urban Christian Schools in Philadelphia, Pennsylvania, participated in the study. A causal-comparative analysis was conducted of reading comprehension and vocabulary achievement between F&F schools and comparison schools. A pre-experimental pretest and posttest analysis of achievement and a comparison of actual growth to expected growth were also conducted in F&F schools. No significant differences in achievement were found between F&F schools and comparison schools. However, pretest and posttest results in F&F schools yielded significant differences, with moderate effect sizes. Results were mixed in the comparisons of actual and expected growth, with no significant differences for fourth grade, but with highly significant differences for fifth grade.

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## Chapter I

### Introduction

Reading literacy can break the bondage that occurs when an individual is dependent on others for essential information that exists in printed form. This bondage can foster an achievement gap in the academic successes and attainments between minority and non-minority students and can persist for a lifetime (Miller, 2004). An abundance of literature documents this achievement gap, which concerns many educators and policymakers. Thernstrom and Thernstrom (2003) reported that the gap is established early, citing a U.S. Department of Education study: “Students without the appropriate . . . reading skills by that [eighth] grade are unlikely to acquire them by the end of high school” (p. 2). Students with reading deficiencies at the end of third grade are unlikely to read well by eighth grade (Felton & Wood, 1992, cited in Kamps et al., 2003), and “[l]ow literacy levels often prevent students from mastering other subjects” (Alliance for Excellent Education as cited by ACT, 2006, ¶ 4).

In *The Nation’s Report Card: Trial Urban District Assessment of Reading 2007*, Lutkus, Grigg, and Donahue (2007) reported that 47 percent of students in large central cities perform at below basic level, as compared to 34 percent of students in the nation who perform at that level. Within these large central cities, or urban districts, the average scores for fourth grade African-American and Hispanic students are at the 26<sup>th</sup> percentile, while average scores for White students are at the 60<sup>th</sup> percentile, an achievement gap of 34 points. Nationally, the gap is similar at 30 points (Lutkus et al., 2007).

Lawmakers have established policies with the intent of diminishing the achievement gap (Thernstrom & Thernstrom, 2003); but according to recent statistics from the National Assessment of Educational Progress, the gap continues (National Center for Educational Statistics [NCES], Trends, n.d.). Reports indicated that the average minority student (African-American or Hispanic) who graduates from high school performs academically at the eighth grade level (Lutkus et al.), which is indicative of a four-year skills gap (Thernstrom & Thernstrom, 2003). Since 1992 the achievement gap in reading between fourth grade White and African-American students widened and then narrowed; however, in 2005 the gap persisted with African-American students scoring, on average, 29 points lower than White students (NCES, Trends, n.d.). According to the report, *Trends in the Achievement Gaps in Reading and Mathematics*, “[T]he gaps in 2005 were not measurably different from those in 1992” (NCES). This disparity in reading achievement continued in 2007 with a 27-point gap between White and African-American students (Lutkus et al., 2007).

Poor reading skills can be observed at an early age and seem to persist, impacting a lifetime, especially in African-American populations (Hammond, Hoover, & McPhail, 2005). Standardized test scores of high school graduates in 2005 indicated that 79 percent of African-American students and 67 percent of Hispanic students fall below the performance benchmark for reading skills that are essential for success on the job or in college (ACT, 2006, ¶ 11).

The Association of Christian Schools International (ACSI) cites the following statistics: “Some 43 percent of minority children attend urban schools. . . . Urban students perform far worse, on average, than children who live outside central cities on virtually

every measure of academic performance” (ACSI, n.d., p. 3), and there are over 12 million students in these urban centers (Gant, 2003). Gant asserted that a generation of youth in urban centers “waits at the threshold of impending disaster. . . . [A]n effective education (historically a way out for at-risk youths) has all but eluded them” (p. 287).

The challenge is to select a reading program that leads to success for students in urban schools with primarily minority populations. This task is particularly challenging because school achievement is linked not only to school factors but to factors that Barton (2004) described as “before and beyond school,” such as “birth weight, lead poisoning, . . . nutrition, reading to young children, television watching, parent availability, student mobility, and parent participation” (p. 10). Barton indicated that statistics based on race/ethnicity and income reveal that these “before and beyond school” factors represent the experiences of many minority students. Among the school-related factors correlating with student achievement are teacher experience and teacher preparation. According to Barton, “Minority . . . students are more likely to be taught by teachers with three or fewer years of experience and to be in schools with higher teacher turnover” and “are much more likely to be taught by out-of-field teachers” (p. 12).

Students in urban schools have not been overlooked. Educators have designed and implemented programs aimed at producing success in reading for students in urban settings. Literacy reform programs such as *Success for All*, *Building Essential Literacy*, and *Literacy Collaborative* have demonstrated positive results in basic word reading and decoding (Tivnan & Hemphill, 2005). These authors applauded these programs, but reported that “outcomes of the early literacy reforms appeared not to be a positive for

reading comprehension . . . and appeared to have especially limited effects on vocabulary knowledge” (p. 436).

The reading program used for this study of reading in urban Christian schools with minority populations is *Foundations & Frameworks* (see Appendix A). *Foundations & Frameworks* (F&F) provides a structure for beginning reading instruction, but its primary focus is on developing the thinking processes associated with complex comprehension and vocabulary. Washburn (2006) stated, “*Foundations and Frameworks* emphasizes teacher knowledge and instructional processes, and research validates its positive effect on student reading comprehension achievement” (p. 101).

#### *Foundations & Frameworks*

*Foundations & Frameworks* was established with the understanding that effective teachers make a positive impact on student learning (Washburn & Blackmon, 2003). Based on his review of multiple studies, Marzano (2003) noted that individual teachers have a dramatic effect on student achievement. He cited a statement by Wright, Horn, and Sanders: “[T]he most important factor affecting student learning is the teacher. . . . [M]ore can be done to improve education by improving the effectiveness of teachers” (p. 72). Williams (2002) pointed out that, “Proficient reading involves . . . a constant, ongoing adaptation of many cognitive processes. To help develop these processes in their students, teachers must be skillful in their instruction” (p. 244). Pressley and Block (2002) hypothesized, “A key to improving student readers’ comprehension is improving the comprehension processing of their teachers . . .” (p. 391). *Foundations & Frameworks* is designed to (a) empower pre- and in-service teachers by providing a professional development experience that may improve their personal comprehension

processes and (b) equip them with the pedagogical knowledge and strategies to teach reading effectively (Washburn & Blackmon).

Components of F&F Basic Training include reading comprehension, visual tools, small groups, vocabulary, assessment, beginning reading, and content area reading (Washburn & Blackmon, 2003). An additional and essential component of F&F Basic Training is the instructional model that provides the structure for unit planning and the guide for daily instruction. *Foundations & Frameworks* is complemented by two instructional design models, *4-MAT*® (McCarthy, 2001) and *Architecture of Learning*® (Washburn, 2006). A participating school may select either model as its F&F structure (Blackmon et al., 2007). In the *Foundations & Frameworks Basic Training Course Book*, Washburn and Blackmon describe the following foundational principles within the major components of F&F:

*Reading Comprehension.* Reading comprehension is a complex process that does not develop automatically once a reader has learned to decode. Comprehension cannot be assumed. It involves thoughtful interaction between a reader and text leading to an understanding of an author's intended message and an action of acceptance, rejection, or adaptation of the message. Comprehension instruction teaches students intentional cognitive processes that should take place while reading assigned texts. Duke and Pearson (2002) described effective comprehension instruction as balanced, including "both explicit instruction in specific comprehension strategies and . . . actual reading, writing, and discussion of text" (p. 207). They recommended comprehension instruction that includes direct instruction in strategies, teacher modeling, and guided practice.

*Visual tools.* Visual tools, which resemble graphic organizers in form, represent a pattern of thinking associated with each comprehension skill and are used by students and teachers to display directed and critical thinking in a non-linear form. Visual tools foster thinking and reflection while reading text, assisting the reader in forming connections between stated and implied ideas and between prior knowledge or experience and new information (Hyerle, 2000). Duke and Pearson (2002) stated, “[V]isual representations . . . allow us to present information again. It is through that active, transformative process that knowledge, comprehension, and memory form a synergistic relationship—whatever improves one of these elements also improves the others” (p. 219).

*Small groups.* Small group instruction occurs daily and enables teachers to know their students well, appropriately adjust instruction to meet individual needs, and promote individual participation. The small group process is delineated, but its effectiveness relies on flexibility and reciprocity between the students and teacher. Small groups are guided by the phrase, “teacher directed, but student dominated.” McEwan (2002) emphasized that high- and low-achieving students benefit from a combination of classroom and small-group instruction, providing opportunity for heterogeneous and homogeneous groupings. In agreement, Fisher and Frey (2007) stated, “The combination of small-group and effective classroom instruction results in higher levels of achievement for students who struggle with literacy” (p. 37).

*Vocabulary.* Vocabulary instruction emphasizes definitional, contextual, and conceptual understanding of words that are carefully chosen from student literature by the teacher. One new word is introduced each day with elaborative instruction. Pressley (2002) recommended specific instruction in word meaning for words frequently

encountered in student texts as a method to improve reading comprehension. McEwan (2002) affirmed that best practice in vocabulary instruction will “ensure that students perform some type of cognitive operation with any new words that are introduced, and . . . talk about new words constantly” (p. 71).

*Assessment.* Assessment is designed to improve student performance, not merely measure it. *Foundations & Frameworks* assessment includes (a) instructive feedback, a specifically designed and intentional formative process that increases instructional effectiveness and (b) summative assessment comprising knowledge of the cognitive processes in comprehension, vocabulary, and task performance. McEwan (2002) suggested that ongoing assessment is essential for planning daily instruction, enabling teachers to respond “directly to what they know with certainty that their students need—not what they *think* their students need” (p. 123). Winograd, Flores-Duenas, & Arrington (2003) characterized effective assessment as an opportunity for the teacher to come alongside a student to encourage “growth, nurturance, and self-evaluation” (p. 206).

#### *Statement of the Problem*

This study will examine the efficacy of F&F in five Christian schools in an urban setting by examining and comparing student achievement on standardized tests. The NCES characterizes the common location of these schools as a “large central city” (NCES, n.d., Search) with a population of more than 250,000. In each of these urban schools, minority populations, primarily African-American, represent 80-100 percent of the total school population (NCES). If a significant increase in student achievement in reading comprehension or vocabulary on standardized tests is observed following F&F instruction, then its efficacy for these schools could be inferred. If a significant positive

difference between student achievement in reading comprehension or vocabulary is demonstrated by students who receive F&F instruction as compared to students in similar schools who do not receive F&F instruction, then one might suggest the efficacy of F&F for students in similar urban schools.

Can the efficacy of F&F reading instruction be observed in urban schools? To answer this question, the researcher collected standardized achievement test data from five urban Christian schools in Philadelphia, Pennsylvania, with fourth and fifth grade students who received F&F instruction and from three similar urban schools with students who did not receive F&F. All representative schools were affiliated with an incorporated Christian school organization serving schools in Philadelphia and wholeheartedly consented to participate in this study.

#### *Null Hypotheses*

To compare the reading comprehension and reading vocabulary achievement of fourth and fifth grade students who received F&F instruction with fourth and fifth grade students who did not receive F&F instruction, the *Stanford Achievement Test, 10<sup>th</sup> Edition* (SAT-10) was used as the pretest and posttest measures of achievement. The following null hypotheses were posed:

1. There is no significant difference in the reading vocabulary achievement of fourth grade students who received F&F instruction and the reading vocabulary achievement of fourth grade students who did not receive F&F instruction as measured by the SAT-10 standardized test while controlling for pretest scores.

2. There is no significant difference in the reading vocabulary achievement of fifth grade students who received F&F instruction and the reading vocabulary achievement of fifth grade students who did not receive F&F instruction as measured by the SAT-10 standardized test while controlling for pretest scores.
3. There is no significant difference in the reading comprehension achievement of fourth grade students who received F&F instruction and the reading comprehension achievement of fourth grade students who did not receive F&F instruction as measured by the SAT-10 standardized test while controlling for pretest scores.
4. There is no significant difference in the reading comprehension achievement of fifth grade students who received F&F instruction and the reading comprehension achievement of fifth grade students who did not receive F&F instruction as measured by the SAT-10 standardized test while controlling for pretest scores.

Although the comparison of posttest achievement scores between students who received F&F instruction and students who did not receive F&F instruction was the critical aspect of this study, the researcher also examined growth in reading comprehension and vocabulary within the group of fourth and fifth grade students who received F&F instruction. Results were available from the *Gates-MacGinitie Reading Test, 4<sup>th</sup> Edition* (GMRT-4), Forms S (pretest) and T (posttest) to examine growth in reading comprehension and vocabulary within the group of fourth and fifth grade students who received F&F instruction. The following null hypotheses were posed:

1. There is no significant difference in the pretest and posttest vocabulary scores of fourth grade students who received F&F reading instruction as measured by the GMRT-4, Forms S and T.
2. There is no significant difference in the pretest and posttest vocabulary scores of fifth grade students who received F&F reading instruction as measured by the GMRT-4, Forms S and T.
3. There is no significant difference in the pretest and posttest reading comprehension scores of fourth grade students who received F&F reading instruction as measured by the GMRT-4, Forms S and T.
4. There is no significant difference in the pretest and posttest reading comprehension scores of fifth grade students who received F&F reading instruction as measured by the GMRT-4, Forms S and T.

In addition, Forms S and T of the GMRT-4 were used to compare the actual reading comprehension and vocabulary growth of F&F students to the expected reading comprehension and vocabulary growth as demonstrated by the norming group. The following null hypotheses were posed:

1. There is no significant difference in the reading comprehension growth of fourth grade students who received F&F reading instruction as compared to expected achievement growth as measured by the GMRT-4.
2. There is no significant difference in the vocabulary growth of fourth grade students who received F&F reading instruction as compared to expected achievement growth as measured by the GMRT-4.

3. There is no significant difference in the reading comprehension growth of fifth grade students who received F&F reading instruction as compared to expected achievement growth as measured by the GMRT-4.
4. There is no significant difference in the vocabulary growth of fifth grade students who received F&F reading instruction as compared to expected achievement growth as measured by the GMRT-4.

### *Professional Significance*

The objective of this study was to evaluate the efficacy of F&F instruction for minority students enrolled in urban Christian schools in Philadelphia. Previous studies of the effectiveness of F&F have been conducted in schools with small minority populations in rural or suburban settings. Although results from this study may only be generalized to a small population of minority students, identifying a method that improves reading instruction and positively impacts the reading proficiency of these students is important. Doubek and Cooper (2007), representing the National Urban Alliance for Effective Education, stated, “[I]t is important to highlight for the educational community those schools that employ successful reading interventions” (p. 413). The ability to read well could dramatically increase the potential of these minority students for further academic, social, and economic success. Success for these students could result in future benefits for a broader minority population as educational efforts continue to target the achievement gap and eliminate cycles of underachievement.

Doubek and Cooper (2007) recommended “program evaluation studies in order for us to comprehend fully the phenomenological effects for students who receive constructive reading instruction and become engaged in learning” (p. 413). They

described school districts in which National Urban Alliance consultants have observed instructional reading strategies, chosen because they entertain rather than deeply engage students in recognizing “relevance, identify[ing] conceptual patterns, and deepen[ing] conceptual reflection—abilities that may transfer to and improve achievement in other disciplines” (p. 414). Flowers (2007) recognized a number of researchers who have contributed to understandings related to African-American students and reading instruction, but he suggested that further “research is needed to support the development of appropriate strategies and dispositions required for African-American students to become proficient readers” (p. 424).

#### *Overview of Methodology*

In this comparative study, the researcher analyzed quantitative results to evaluate the efficacy of F&F instruction in urban Christian schools. A pretest-posttest group design in this causal-comparative study was used to determine if a significant difference exists between achievement in reading comprehension or vocabulary of fourth and fifth grade students who received and those who did not receive F&F instruction. Further study analyzed results in a pre-experimental pretest-posttest design to determine if a significant difference exists in reading comprehension and vocabulary achievement following F&F instruction for 146 fourth and fifth grade students. A comparison was also made of actual growth in reading comprehension and vocabulary to expected growth in reading comprehension and vocabulary.

*Site and Population.* This was a study of students in urban Christian schools in Philadelphia, Pennsylvania. The researcher worked with a Philadelphia-based F&F reading consultant and coach, obtaining permission to use coded school and student data

from administrators in five schools that used the F&F reading program and from three accessible schools similar in demographics that did not use F&F. The F&F group consisted of 146 fourth and fifth grade students; the non-F&F group consisted of 59 students in fourth and fifth grades. One accessible non-F&F school did not administer the SAT-10 in consecutive years for a pretest/posttest comparison; therefore, this school, which included six students, was excluded from the study. Sixteen students in one F&F school had received F&F instruction during the previous year in a pilot program; these students were excluded from the study. Students in both groups who entered school following the administration of the SAT-10 representing the pretest data, or who withdrew before the administration of the SAT-10 representing the posttest data, were excluded. Students in both groups who scored at the post high school level on the pretest were excluded from the study. Two F&F schools did not administer the SAT-10; these schools were excluded from the causal-comparative analysis but were included in the pre-experimental analyses. After exclusions, there were 51 students from non-F&F schools and 52 students from F&F schools who were included in the causal-comparative analysis.

The F&F group with GMRT-4 data used for the pre-experimental pretest-posttest design comprised 146 fourth and fifth grade students in five schools with similar populations that used the F&F reading program in the 2005-2006 school year. Only students who were administered the pretest and posttests, Forms S and T, were included in the study. Students who entered school following the administration of the GMRT-4, Form S, or who withdrew prior to the administration of the GMRT-4, Form T, were excluded. Students with incomplete or chance level scores and students who had received F&F instruction during the previous year in a pilot study were excluded. Students who

scored at the post high school level on the pretest were also excluded. After exclusions, there were 130 students who were included in the pre-experimental comparisons.

*Research methods.* Results from the SAT-10 given in two consecutive years were used to compare the achievement in reading vocabulary and reading comprehension of students who received F&F instruction and students who did not receive F&F instruction. In addition, pretest and posttest results from the GMRT-4, Forms S and T, which were given to students who received F&F reading instruction, were examined.

*Data Collection and Analysis.* Teachers from the five schools whose students comprise the F&F group participated in F&F Basic Training in the summer of 2005 and implemented F&F during the 2005-2006 academic year. Student scores from the SAT-10 and the GMRT-4 were collected and coded with permission from school administrators from F&F and non-F&F schools. Non-excluded data was entered into the SPSS statistical package for analysis.

Results were compared of normal curve equivalents (NCEs) and scaled scores (SSs) from the SAT-10 administered to students in F&F schools and non-F&F schools. Since groups were similar but not matching, a *t* test for independent samples was performed to determine if a significant difference existed in the pretest reading comprehension or vocabulary scores of F&F and non-F&F schools. Though a significant difference in pretest scores was not indicated by the *t* test for independent samples, a difference between the groups was noted. The researcher performed an analysis of covariance (ANCOVA) to statistically equate the non-equivalent groups by controlling for pre-existing differences in pretest scores.

Results of NCEs and ESSs from the GMRT-4 were used in the statistical analysis to compare student achievement levels measured by the GMRT-4 pretests and posttests. Results were examined from fourth and fifth grade students in five schools that implemented F&F during the 2005-2006 academic year. A *t* test for dependent samples using a two-tailed test of significance measured the mean differences between data collected from the GMRT-4 pretests and posttests given to students who received F&F instruction. An additional analysis used a one-sample *t* test to compare the actual growth in vocabulary and reading comprehension of F&F students to expected growth as demonstrated by the GMRT-4 norming group.

#### *Definition of Terms*

The following terms have been defined for the purposes of this study:

1. *Christian school*. A Christian school is an educational institution established to ensure the integration of a biblical worldview with academic content, believing that all knowledge is from God, the Creator, and that redemption is available through His Son, Jesus Christ.
2. *Expected growth*. Expected growth is the increase in achievement scores that should occur following instruction for a specified period of time. The standard for expected growth is typically determined by the increase in achievement scores demonstrated by a representative sample, or norming group.
3. *Extended Scale Score (ESS)*. An extended scale score is a continuous scale used to measure achievement results on the GMRT-4 from kindergarten through Grade 12.

4. *Growth*. Growth is represented by increases in student scores on norm-referenced tests.
5. *Large central city*. A large central city has a population of 250,000 or more.
6. *Minority students*. Minority students primarily represent the African-American and Hispanic communities.
7. *National Assessment of Educational Progress (NAEP)*. The NAEP is a measure of achievement given to a nationally representative sample of students. Results are reported in a document entitled *The Nation's Report Card*. Three levels of achievement are described: Basic, Proficient, and Advanced. "Basic denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at a given grade" (Lutkus, et al., 2007, p. 6).
8. *Normal curve equivalent (NCE)*. Normal curve equivalent scores are interval scores with a range of 1 to 99 and a mean of 50 that demonstrate position relative to a norm group.
9. *Norm-referenced test*. A norm-referenced test is used to compare a student's achievement with the achievement of a representative sample of students at the same grade level. Norm-referenced tests in this study include the GMRT-4 and the SAT-10.
10. *Professional development*. Professional development is training designed to equip teachers with the enabling knowledge, skills, and dispositions to be more effective.
11. *Scaled Score*. A scaled score is a continuous scale used to compare SAT-10 scores over time.

12. *Student achievement.* Student achievement is represented by scores on the GMRT-4 and SAT-10, which are norm-referenced tests designed to measure the reading comprehension skill and vocabulary knowledge acquired by students through instruction.
13. *Urban school.* Urban schools are in large central cities or metropolitan areas. The student population of urban schools is predominantly minority, and many students qualify for free or reduced-price lunches due to persistent poverty and low-income single-parent households.

## Chapter II

### Review of Literature

Urban school districts exist in large central cities and are often predominantly populated with African-American and Hispanic students who may be poor, qualifying for free or reduced-price lunches (Gant, 2003). Gant attributed the development of these urban centers to a 50-year migration, from 1900 to 1950, of 6.5 million African-Americans from the rural South to large cities and to the movement of middle class workers to the suburbs. He labeled the resulting urban culture as “socially and politically disenfranchised” (p. 288) with characteristics suggestive of a former life, including poverty and dependency. He listed crime, teenage pregnancy, and “low educational aspirations” (p. 288) as additional cultural characteristics of the urban district, concluding that “The children are basically inheriting the lifestyles of their parents, who inherited them from their parents” (p. 292).

The correlation between literacy and stable employment at a sustaining income has been well established (Barton, 1998; Roman, 2004). The average income of adults scoring at the lowest level of the National Adult Literacy Survey is less than one-third the average income of adults scoring in the highest levels (Roman). Barton stated, “Seventy percent of welfare recipients are in the two lowest literacy levels, below the levels the National Educational Goals Panel says are necessary to make it in our economy and society” (p. 7). He reported that individuals who live on welfare as teenagers are about six times more likely to continue on welfare as young adults.

The numbers of African-American and Hispanic children who live in impoverished neighborhoods are significant. Approximately 20 percent of African-American children live in neighborhoods where poverty is concentrated, and nearly 50 percent of Hispanic children live in neighborhoods where 20 percent of the residents are poor (Barton, 1998). Children who live in poverty in households with marginalized literacy typically begin school at a disadvantage and continue to lag behind (McEwan, 2002). A student who continues to lag behind peers throughout elementary school and enters junior high school with a failing grade in English has a 75 percent probability of dropping out of high school (Neild, Balfanz, & Herzog, 2007). According to Roman (2004), 50 percent of public assistance recipients have not received a high school diploma.

School dropout rates are also significant among the prison population, which is represented by a disproportionate number of African-American and Hispanic males (NCES, Literacy, 2007). Approximately 30 percent of the inmates in federal prisons, 40 percent of the inmates in state prisons, and 50 percent of the inmates on death row did not graduate from high school (NCES). Over 1,100 inmates from federal and state prisons participated in the 2003 National Assessment of Adult Literacy (NCES). Results from the assessment disclosed that overall literacy skills in the prison population are substantially lower than those in the general population. Hale (2004) referenced the *Richmond Times-Dispatch*, “[T]he local penitentiary predicts with accuracy the number of prison cells to prepare by the number of students in the public schools who are reading below grade level in the 2<sup>nd</sup> grade” (p. 37).

Barton (2004) listed 14 factors that correlate with student achievement and finds that minority and impoverished children are at a disadvantage. He divided the correlates into two categories representing non-school and school-related factors. Among the non-school factors that can be associated with poverty are birth weight, lead poisoning, hunger and nutrition, and student mobility. Barton asserted that exposure to reading is also among the factors related to poverty.

Children whose parents or caregivers read to them when they are young gain a considerable advantage in terms of language acquisition, literacy development, achievement in reading comprehension, and general success in school. Black and Hispanic children are read to much less than white children are, and children in poverty are read to less than children from higher socioeconomic brackets. (p. 10)

This limited exposure to home-based informal reading is one factor that may influence the following statistics: Only 14 percent of poor African-American children read above the basic level (Gant, 2003) and less than half of male Hispanic and African-American students graduate from high school (Gant, 2007).

Gant (2003) asserted that the achievement deficiencies inherent in the majority of urban minority students result from a lack of capital, which is not limited to financial resources but which he describes as any resource used to produce assets. For example, a child's intellectual capital is affected by the educational achievement of his parents and by his pre-school home-based learning experiences. Gant (2007) described the lack of a cognitive structure enabling learning in urban minority students. He suggested that the ability to learn is significantly impaired without a cognitive skills foundation, which is produced through the availability of intellectual capital. Aronson (2004) proposed that

schools and teachers can have a powerful influence in either “magnifying or remedying these early deficits” (p. 18).

*The Literacy Challenge in Philadelphia*

Philadelphia has been characterized as a city with a dropout crisis where 40 percent of the students who begin high school leave before graduating (Neild & Balfanz, 2006). According to Neild and Balfanz of the Center for Social Organization of Schools at Johns Hopkins University, the dropout problem in Philadelphia crosses racial and ethnic groups, but it is highest among Hispanic males, followed by African-American males. During the 2003-2004 school year, more than 8,000 students dropped out of Philadelphia schools and another 5,000 students attended school less than one half of the time. Two thirds of these students left school before completing the tenth grade, and one third left before completing ninth grade, even though the legal age for dropping out of school is 17 years.

Over 14 percent of all dropouts in Philadelphia have experienced juvenile justice placement; 25 percent of male dropouts have been in a juvenile justice facility (Neild & Balfanz, 2006). Of those in juvenile justice facilities, 9 out of 10 dropped out during high school. Students with the highest risk of dropping out are concentrated in middle schools and high schools with the highest-poverty level. At least 75 percent of the student bodies of 24 Philadelphia high schools are classified as low income. These 24 schools serve approximately one half of the city’s high school population, but they contribute 71 percent of the city’s dropouts.

According to Neild and Balfanz (2006), the majority of ninth and tenth grade students who drop out will have scored below average on standardized reading tests

during their eighth grade year. Over 56 percent of the students in Philadelphia who dropped out during the 2003-2004 school year scored below grade level in reading during their eighth grade year. Neild, Balfanz, and Herzog (2007), claiming that students with a high probability of dropping out can be identified before entering high school, recommended intervention that will re-engage students and re-direct them toward a path for graduation. “[T]he price of not intervening—in terms of individual lives that do not reach their potential and the broader social costs of having a class of citizens who lack a basic academic credential—is incalculably greater” [than the costs associated with intervention] (p. 33).

#### *School Reform and the Achievement Gap*

Snipes and Casserly (2004) considered the failure to effectively educate students in urban school districts as the impetus behind the development of school reform programs and recent national policies related to standards, testing, and accountability. They stated, “The movement to reform education in the United States is fundamentally about improving urban public schools. . . . [N]owhere does the national resolve to strengthen its educational system face a tougher test than in our inner cities” (p. 127). Statistics related to an achievement gap between White students and African-American and Hispanic students have fueled reform efforts to improve urban schools. McEwan (2002) stated, “The lower overall reading achievement of low-SES [socioeconomic status] students and ethnic-minority students as compared to their higher-SES counterparts, has been documented, discussed, and dissected for over 30 years” (p. 10). Statistics from the 2007 National Assessment of Educational Progress (NAEP) confirm this continuing achievement gap. Although White, African-American, and Hispanic

student groups made 2-point gains over reading scores reported in 2005, the gap between white students and African-American and Hispanic students remains unchanged. The NAEP 2007 average scale score, with a range of 0-500, for White students was 231; for African-American students, 203; and, for Hispanic students, 205 (Lee, Grigg, & Donahue, 2007). In urban school districts, the average scale score reported for white students was the same, but for African-American and Hispanic students, the average score was 199 (Lutkus, Grigg, & Donahue, 2007).

Hale (2004) suggested, “A discussion of closing the achievement gap should not focus on equalizing outcomes but rather on equalizing learning opportunities” (p. 34). A survey of 41,000 middle and high school students conducted by the Minority Student Achievement Network, with support from the National Science Foundation, reported that African-American and Hispanic students comprehend less from what they read in school than their White counterparts (Alson, 2003). Results from this survey imply that effective instruction in reading comprehension for African-American and Hispanic students would improve academic performance. However, reading comprehension does not fully develop without the foundational skills of phonemic awareness, phonics, and fluency (National Reading Panel [NRP], 2000). Multiple studies have been conducted on students who are at risk for academic failure in urban schools. Their purpose is to evaluate the implementation effects of various literacy reform models that promote the development of these foundational skills. Six literacy reform programs and related research studies are highlighted below:

*Success for All.* This program was developed at Johns Hopkins University in 1987 and continues in its mission to prevent reading failure in students who are disadvantaged

or at risk for academic failure. Munoz and Dossett (2004) evaluated the impact of Success for All (SFA) in urban settings after three years of implementation. They identified three earlier studies resulting in statistically significant achievement differences in SFA treatment and control groups, with positive effects attributed to SFA implementation. Munoz and Dossett described SFA as a “reading curriculum based on research on effective practices” (p. 266). In their study, treatment schools demonstrated greater gains than control schools on the Comprehensive Test of Basic Skills; the effect size was statistically significant ( $p < .05$ ), but small ( $ES = .11$ ). The researchers recommended future study to “address the impact of the program on higher-order skills” (p. 275). Snow (2002) reported that in a 1998 analysis of SFA, the reading comprehension scores of at-risk students who had completed the program were significantly below the national average even though their scores on word-level skills were comparable to the national average.

*Direct Instruction.* This program, which began in 1968 as DISTAR at the University of Illinois and at the University of Oregon, was developed to accelerate student learning with a fast-paced delivery system and explicit, detailed instruction with interactive choral responses by students (Howard, 2000). In a longitudinal study of Direct Instruction (DI) and Success for All (SFA) in an urban district, Ross et al. (2004) found no significant program effects for DI or SFA using a hierarchical linear model (HLM) for achievement estimates. The researchers reported, “Generally, DI effect size estimates were negative and small to moderately large in size. . . . Effect size estimates for SFA were near zero for all grade levels and years” (p. 367). Reading achievement estimates were based on Total Reading scores from the Ohio proficiency tests for Grades 4 and 6

and the *Stanford Achievement Test, 9<sup>th</sup> Ed.*, for Grade 2; results for reading comprehension and vocabulary were not disaggregated. Strickland and Alvermann (2004) stated, “While Direct Instruction has proved very successful in achieving basic skills, there is little evidence to support the claim that it is effective in promoting more complex, rigorous, and nuanced literacy achievement” (p. 74).

*Accelerated Reader/Reading Renaissance.* This program began in 1984 with a combination of behavioral techniques and motivational technology (“Best of ERIC”, 2006). Nunnery, Ross, and McDonald (2006) conducted a “randomized field experiment [which] was designed to gauge program impacts on the reading achievement of 978 urban students in Grades 3 to 6” (p. 2). They noted that some previously conducted pre-experimental and quasi-experimental studies documented gains in reading achievement for students participating in the Accelerated Reader/Reading Renaissance program, while others reported mixed results. In the experimental evaluation, results from the statistical analysis of pre-, mid-, and posttest mean differences between control and treatment groups on the STAR reading test indicate a program effect in third grade of 0.36, which the researchers labeled as strong, an effect in fourth grade of 0.16, and minimal effects in fifth and sixth grades. The researchers described Accelerated Reader/Reading Renaissance as a program that provides increasingly independent reading practice as students develop decoding skills. A student’s reading comprehension is also assessed following the completion of each text by using a “short, literal comprehension quiz on the computer” (p. 3) that is described as brief with multiple choice questions. Teachers learn to monitor achievement on these tests and to “intervene as needed” (p. 3).

*Building Essential Literacy, Developing Literacy First, and Literacy*

*Collaborative.* Tivnan and Hemphill (2005) compared the effects of four literacy reform models, including SFA, on first grade students in a large urban district consisting of high poverty schools with minority populations. Building Essential Literacy was developed at the University of Melbourne, Australia, and serves as a reading and writing reform model; Developing Literacy First was developed by a textbook publisher as an in-service course to accompany its leveled readers; and Literacy Collaborative was developed at Lesley University and Ohio State University to apply literacy principles usually reserved for individual instruction to whole-class instruction. Tivnan and Hemphill revealed that all four programs raised student levels of achievement in word reading and phonemic segmentation, and they resulted in most of the students achieving grade level expectations for word reading and decoding. However, “average vocabulary and reading comprehension abilities, those literacy skills that are related to the construction of meaning, still lagged behind grade-level expectations at the end of first grade” (p. 434). They described the failure to significantly influence vocabulary and reading comprehension as an “unsolved problem for urban schools” (p. 437). Snow (2002) confirmed that not all students who satisfactorily complete a beginning reading program become proficient in comprehension, though she commends recent improvements in the base of knowledge related to beginning reading instruction. She suggested that the primary objective of future literacy research should be to improve reading comprehension outcomes.

### *Reading Comprehension*

Reading comprehension instruction has received limited attention in recent literacy reform models (Duke & Pearson, 2002). In a review of literacy research since the report of the National Reading Panel, Pressley, Billman, Perry, Reffitt, and Reynolds (2007) found few studies documenting an increase in reading comprehension instruction in elementary schools, even though the 2000 report made specific recommendations regarding instructional practices. Their review substantiated the need for specific comprehension instruction and revealed that average and below-average readers benefit from even small amounts of it.

Some researchers recognized that reading comprehension does not automatically develop as a result of beginning reading instruction. Reed, Marchand-Martella, Martella, and Kolts (2007) differentiated between foundational skills (phonemic awareness, phonics, and fluency) and the skills associated with vocabulary knowledge and comprehension. They stressed the importance of explicit instruction in reading comprehension strategies and identified *Reading Success: Level A* as a program designed to teach reading comprehension in 15- to 20-minute systematic and explicit daily lessons, which are supplemental to the adopted reading curriculum. They conducted a pre-experimental study to assess the program effects of *Reading Success: Level A* on the comprehension skills of fourth grade students in an atypical urban school with a small minority population (approximately 3 percent) and only 36 percent qualifying for free or reduced-price lunches. Scores on standardized state tests were already above average in reading and writing prior to implementation of the *Reading Success: Level A* program; however, the study found a statistically significant difference between the treatment

sample and national norms. Though results could not be generalized due to study limitations, Reed et al. concluded that using explicit and systematic instruction for comprehension is likely to increase reading comprehension performance. They stated, “Although there are many different kinds of reading curricula in schools today, very few focus on comprehension skills specifically” (p. 7).

The report of the NRP (2000) described reading comprehension as a complex process involving deliberative thinking and transaction with text, drawing on prior knowledge and experience while relating to an author’s words. The report listed the following eight instructional methods associated with reading comprehension that have a scientific basis for concluding their effectiveness: (a) teaching strategies for personal comprehension monitoring; (b) employing classroom cooperative learning; (c) teaching the use of graphic and semantic organizers; (d) teaching story structure and associating it with plot, time lines, characters, and story events; (e) asking questions and giving feedback; (f) teaching personal question generation; (g) teaching summarization and synthesis of ideas and meanings; and (h) interacting with students using multiple strategies flexibly and naturally. Reed et al. (2007) underscored the effectiveness of these methods and stated that these strategies play a key role in helping students construct meaning from text and in promoting future success in reading.

Snow (2002) identified the socio-cultural environment as an additional factor that should influence reading comprehension instruction since it interacts with the reader and the purposes or tasks associated with reading. Describing the socio-cultural environment as the school, community, economic resources, and family of the reader, she stressed that

educators must expand their understanding of the literacy practices of a variety of cultural groups to ensure success in reading comprehension for all students.

### *A Socio-cultural Perspective*

African-American educators recognized the importance of a socio-cultural perspective in determining appropriate instructional practices. Hammond, Hoover, and McPhail (2005) addressed the critical need to document research-based practices that effectively lead African-American students to a level of comprehension that enables them to synthesize and evaluate information for critical decision-making. They indicated that a common practice among educators is to have low expectations for African-American students and to accept academic failure as inevitable for a majority of African-American students.

African-American educators have described instructional practices and strategies they judge to be effective in contributing to a successful learning environment. Strickland (2005) discussed the benefits and consequences of instructional decisions that were made soon after the identification of an achievement gap in reading between White and African-American learners. She acknowledged the academic benefits of the movement to provide highly structured direct and explicit basic skills instruction, but she expressed discouragement that this limited instruction led to an unintended ceiling on learning. She stated, "When students are repeatedly served a diet of low level, impoverished basics, they accumulate a kind of knowledge that is neither empowering nor self-improving" (p. 151). She elaborated by saying that these students may be able to restate what has been taught but cannot transfer a deep level of understanding to subject matter requiring critical or evaluative thinking and suggested that a reading comprehension curriculum

should be rigorous and learner centered. She summarized five principles regarding improved literacy instruction for African-American students, though she recognized that these principles would benefit all learners:

1. Early literacy programs for African-American children should take advantage of a child's awareness of environmental print, placing value on what a child already knows and has experienced. Family literacy opportunities should be promoted.
2. Literacy programs for African-American children should focus on constructing meaning at all levels of reading instruction. Assigned tasks should be relevant and make sense to the learner.
3. Literacy instruction for African-American children should embrace a cognitive view of knowledge that promotes active involvement and recognizes the impact of life experiences on understanding. Instruction should involve problem-solving opportunities, collaborative discussions, and cooperative learning activities.
4. Teachers and administrators of African-American children should acknowledge the diversity of their students and the unique characteristics of each child. Literature should reflect diverse cultures, and students should learn to value their own heritage and that of others.
5. The classroom environment for African-American children should exhibit the social interaction that positively influences literacy learning. Relationships and a sense of community should be fostered, grouping should be flexible,

and large blocks of time should be devoted to reading and language arts instruction.

Though the practices outlined above provide guidance in fostering improved literacy skills in urban school students, not every practice that results in successful reading achievement for urban school students is specific to literacy. Hoover (2005) studied reports of successful inner-city schools and identified six characteristics common to the schools where students read at grade level: (a) strong leadership, (b) a structured, proven reading method, (c) motivation and high expectations, (d) staff development, (e) achievement monitoring, and (f) time devoted to instruction. Similarly, McPhail (2005) compared the factors that distinguish effective literacy classrooms with the characteristics of successful inner-city schools. In effective classrooms with low-income minority students, the teacher demonstrates characteristics similar to those of successful schools, including strong leadership, an emphasis on reading instruction, and high expectations.

Sadler (2005) recommended strategies for comprehension instruction in classrooms with minority students. She stated that the strategies are effective with all students but are especially effective with African-American students when the delivery and examples used during instruction and modeling are tailored to their specific backgrounds. She recommended strategies such as (a) checking for understanding by asking students to restate or summarize information in their own words; (b) chunking reading assignments into smaller sections; (c) interacting with students during the reading process; (d) fostering cooperative learning; (e) including activities directed toward visual, auditory, and tactile modalities and promoting opportunities for students to learn in all of them; (f) guiding students in determining a purpose for reading; and (g) improving

organization with the use of visual organizers, such as timelines and charts. To increase motivation and self-confidence in African-American students, she suggested that the teacher emphasize the connection between personal experience and comprehension in order for the students to understand that answers are not always provided in the text and that answers may vary due to interpretations based on varied experiences.

### *The Role of Vocabulary*

A strong consensus among researchers and practitioners suggests that vocabulary knowledge significantly influences reading comprehension. It has been identified as an early indicator of future reading success (Graves & Watts-Taffe, 2002). Effective vocabulary instruction poses a challenge in urban schools where students may enter with a deficient academic vocabulary (Tivnan & Hemphill, 2005). Boulware-Gooden, Carreker, Thornhill, and Joshi (2007) described a study indicating that students with below average vocabulary knowledge in third grade would continue this status throughout their academic careers unless they received extensive vocabulary instruction. Snow (2000) reported a complex relationship between vocabulary and comprehension that is “confounded . . . by the complexity of relationships among vocabulary knowledge, conceptual and cultural knowledge, and instructional opportunities” (p. 35). Hollie (2005) addressed the struggle that some African-American students may have with vocabulary knowledge. She distinguished these students as standard English learners and characterized their vocabulary as culturally rich, but limited in vocabulary necessary for school success. Garcia and Jensen (2007) described similar challenges faced by Hispanic students who live in homes where English proficiency is limited and success in school is illusive.

Attaining vocabulary knowledge may be difficult, but it is imperative according to Graves and Watts-Taffe (2002). They indicated that children who grow up in poverty have substantially smaller vocabularies than their more affluent classmates and that attaining an adequate vocabulary is a crucial but challenging task that could prevent school failure. They suggested a four-part program for vocabulary instruction that includes (a) wide reading; (b) teaching individual words by providing definitional and contextual information with active processing of word meanings and multiple encounters; (c) teaching word learning strategies that include context clues, morphology, and dictionary use; and (d) promoting word consciousness in a way that affects motivation for and appreciation of word learning opportunities.

The report of the National Reading Panel provided similar insight into the importance of vocabulary. The Panel examined studies reporting the impact of vocabulary instruction on reading achievement. Though a causal relationship between an increase in vocabulary and an increase in reading comprehension has not been demonstrated, the importance of vocabulary instruction has been established by high correlations between vocabulary knowledge and comprehension. Along with its statement that it is necessary to use multiple methods to teach vocabulary, the Panel included the following recommendations:

1. Use direct and indirect instruction. Direct instruction includes identifying an unfamiliar word and connecting it to a familiar word or phrase. Indirect instruction can occur as students hear or read text.
2. Provide opportunities for multiple exposures to vocabulary words in varied contexts.

3. Restructure vocabulary learning tasks to actively engage students in the learning process while they are learning the meaning of unfamiliar words.

Additional instructional methods for teaching vocabulary were examined by Boulware-Gooden, Carreker, Thornhill, and Joshi (2007). These researchers studied the results of meta-cognitive strategies on the vocabulary achievement of third grade students in two urban elementary schools. Meta-cognitive instruction in the intervention school included direct vocabulary instruction using semantic webs to connect parts of speech, synonyms, antonyms, multiple meanings, and related words. Students in the control school recorded the vocabulary word, memorized the definition, and used the word in a sentence. Following the five-week study and a statistical analysis of pretest and posttest results on a criterion-referenced vocabulary test, results revealed a 40 percent difference in gains between the intervention and control groups. The authors concluded that the mental processing involved in creating semantic maps results in deeper understanding of vocabulary words and increased retention of word meaning.

In an effort to promote mental processing and active engagement in the learning process, Hollie (2005) emphasized the importance of recognizing the cultural-linguistic context that African-American students bring to the classroom and building on the conceptual understanding of vocabulary based on that context. She promoted instruction that fosters connections between what is known and what is new, using culturally rich vocabulary as a bridge to academic vocabulary. She recommended that each student create a personal thesaurus and a dictionary.

Although the National Reading Panel cited vocabulary instruction as an important component of reading instruction, the topic has received little sustained attention in the

past seven years (Halladay et al., 2007). The gap in vocabulary achievement between minority and White students and the 6,000-word gap between the vocabulary of lower socioeconomic status students and their more privileged classmates continues to challenge educators with questions relating to choice of words, the introduction of words, the number of words, and the focus and methodology of instruction (Carlo, August, McLaughlin, Snow, Dressler, Lippman, et al. 2004).

### *Recommended Practices*

Strategic reading comprehension and vocabulary instruction that is grounded on research-based principles, and that affirms the socio-cultural perspectives of diverse students, will benefit students in urban schools. The recommendations of several researchers and practitioners who have focused on reading comprehension and vocabulary instruction in urban schools were identified in previous sections of this manuscript. Tables 2.1 and 2.2 on the following pages provide a summary of these recommendations.

Table 2.1 Practices for Effective Reading Comprehension Instruction in Urban Schools

<b>Recommended Practices for Reading Comprehension Instruction in Urban Schools</b>
<p>To be effective, instruction in reading comprehension should . . .</p> <ol style="list-style-type: none"><li>1. be assigned large blocks of time.</li><li>2. be explicit and systematic, with direct instruction and modeling.</li><li>3. employ multiple instructional strategies, including cooperative learning, collaborative discussion, and flexible grouping.</li><li>4. include questioning, summarizing, and problem-solving techniques.</li><li>5. introduce and promote the use of graphic and semantic organizers.</li><li>6. be culturally relevant and connected to life experiences.</li><li>7. feature learning activities in multiple learning styles and modalities.</li><li>8. promote rigor and foster high expectations for student achievement.</li><li>9. provide opportunities for meaningful feedback and interaction.</li><li>10. provide appropriate assessment of student achievement.</li></ol>

Table 2.2 Practices for Effective Vocabulary Instruction in Urban Schools

<b>Recommended Practices for Vocabulary Instruction in Urban Schools</b>
<p>To be effective, instruction in vocabulary should . . .</p> <ol style="list-style-type: none"> <li>1. provide indirect instruction by encouraging wide reading and word consciousness.</li> <li>2. employ direct instruction that connects a new word to a known word or phrase and that uses culturally rich vocabulary as a bridge to understanding.</li> <li>3. require cognitive engagement and processing of word meaning.</li> <li>4. furnish definitional and contextual information about words.</li> <li>5. provide multiple encounters with targeted words.</li> <li>6. foster the development of word learning strategies using context clues, morphology, and dictionary skills.</li> </ol>

### *A Framework for Reading Comprehension and Vocabulary Instruction*

A list of recommended instructional practices, such as those in Tables 2.1 and 2.2, provides important information for teachers but does not provide a strategic plan for consistently implementing the practices in a classroom. Fisher and Frey (2007) suggested the need for a literacy framework to provide direction for teachers without providing a scripted reading curriculum that promotes one-size-fits-all instruction and limits professional expertise. They described the efforts of a literacy task force at an urban elementary school to identify the school's core beliefs about literacy, develop a school-wide instructional framework for literacy, provide in-house professional development opportunities, and foster professional learning communities. The authors stated that the

process took several years. They submitted that the instructional framework developed by the urban school represented in their study was not transferable to other schools, and they recommended that each school develop its own instructional framework for literacy.

Similarly, recognizing the need for an instructional framework to guide teachers in implementing effective instructional practices, Duke and Pearson (2002) stated the following:

A central question is, How can and should teachers embed all these research-documented practices into a curriculum? It is one thing to demonstrate that if a comprehension strategy is taught systematically . . . students will benefit in terms of strategy acquisition, text comprehension, or even standardized test achievement. It is quite another to figure out how to “curricularize” that strategy, along with all the other research-proven strategies that might present themselves to a teacher . . . for regular inclusion into the reading program. . . .Without finding better ways of bringing effective comprehension instruction to classrooms, continued research refining particular comprehension instruction techniques will provide little or no real value. (p. 233-234)

*Foundations & Frameworks* is founded on research-documented principles related to reading comprehension and is implemented by adhering to a framework based on the cognitive processes essential for learning (Washburn & Blackmon, 2003).

*Foundations & Frameworks* instruction functions in a sequenced structure governed by established foundational principles and instructional practices, stated learning objectives, guided thinking processes, associated visual representations, authentic literature, and rubrics that guide instruction and assessment (Blackmon, Robertson, & Washburn, 2007).

Elements from the recommended practices for reading comprehension and vocabulary instruction in urban schools that are listed in Tables 2.1 and 2.2 are linked to corresponding elements in the F&F reading program (see Appendix B).

### *Summary*

Learning to read with comprehension can be a challenging process, especially for students who live in urban environments associated with low literacy levels (Gant, 2003). Statistical evidence reveals a long-standing achievement gap in reading between White students and minority students (McEwan, 2002; Thernstrom & Thernstrom, 2003). Not only is the gap associated with race and ethnicity but also with school dropout rates, poverty, and incarceration (NCES, 2007; Roman, 2004). The achievement gap has led to reform efforts aimed at improving reading instruction in urban schools, where there is a concentration of minority students from low-income families (Snipes & Casserly, 2004). Much of the effort to improve reading instruction in urban schools has targeted beginning reading skills (Munoz & Dossett, 2004; Nunnery & McDonald, 2006; Ross et al., 2004; Tivnan & Hemphill, 2005). However, the successful completion of a beginning reading program does not ensure adequate reading comprehension skills (Snow, 2002). There were few studies of reading comprehension documented in the report of the National Reading Panel (2000). In its summary, the Panel encouraged direct instruction in reading comprehension and made recommendations regarding instructional practices that would benefit average and below-average readers. However, in 2007 Pressley et al. found little change in the amount of reading comprehension instruction that had taken place in classrooms since the report was published.

Within the context of urban schools, multiple researchers and practitioners have suggested instructional strategies to improve students' comprehension skills (Hammond et al., 2005; Sadler, 2005; Snow, 2002; Strickland, 2005). Snow addressed the need for appropriate instruction for low-achieving students in high-poverty schools and suggested a research agenda that would focus on reading comprehension.

Teachers working in high-poverty schools need guidance on how to combine and prioritize various instructional approaches in the classroom. In particular, they need to learn how to teach comprehension while attending to the often poor word-reading skills their students bring to the middle and later elementary grades.

(p. 45)

Duke and Pearson (2002) concluded that comprehension strategies should be taught through an established instructional framework for consistent inclusion in daily practice.

Vocabulary is an additional concern to educators in urban schools because a strong link exists between vocabulary knowledge and reading comprehension (Graves & Watts-Taffe, 2002; Snow, 2002). Many students in urban schools begin with limited academic vocabulary knowledge (Tivnan & Hemphill, 2005); therefore, vocabulary instruction is essential for these students in order to achieve academic success (Boulware-Gooden et al., 2007). Researchers and practitioners in urban schools recommend that vocabulary instruction be explicit and direct (Boulware-Gooden et al.; Hollie, 2005; NRP, 2000). For students in urban schools, vocabulary instruction should promote mental processing and active engagement in the learning process with recognition of the cultural-linguistic context that students bring to the classroom (Hollie, 2005). Acknowledging that much is known about vocabulary and vocabulary instruction, Graves and Watts-Taffe

implied that an increasing interest in their role in reading comprehension will benefit disadvantaged students.

*Foundations & Frameworks* is an instructional reading program that combines research-based instructional approaches within a guiding structure for teachers (Washburn & Blackmon, 2003). It uses literature that is matched to a student's reading level to teach thinking, which advances comprehension (Boulware-Gooden et al.). It introduces useful vocabulary in a rich context and provides opportunity for student experience to influence contextual understanding. Conducted to assess the efficacy of F&F on elementary students' reading achievement in urban Christian schools in Philadelphia, this study may be a step toward identifying an effective framework for reading comprehension and vocabulary instruction that challenges the achievement gap in reading literacy.

## Chapter III

### Methodology

The purpose of this study was to examine the efficacy of *Foundations & Frameworks* (F&F), an instructional program emphasizing reading comprehension, on elementary students' reading achievement as measured by the *Stanford Achievement Test, 10<sup>th</sup> Edition*, and the *Gates-MacGinitie Reading Test, 4<sup>th</sup> Edition*. Five urban schools that are associated with a Christian school organization in Philadelphia implemented F&F during the 2005-2006 school year. The researcher analyzed student achievement data related to the implementation of F&F instruction in these five schools. This chapter describes the methodology used for a causal-comparative analysis of achievement in F&F and non-F&F schools and a pre-experimental pretest and posttest comparison of achievement results and growth in F&F schools. The chapter describes the background, research design, population, instrumentation, data collection, and data analysis for this study.

#### *Background*

This study was conducted in Philadelphia, which has been described as a challenged district with 85 percent of its population classified as minority or low income (Wilcox, 2006). In 2002, the state of Pennsylvania took over Philadelphia's public school system following years of low academic achievement (Gill, Zimmer, Christman, & Blanc, 2007). An appointed School Reform Commission assigned 45 low-performing schools to nonprofit or for-profit organizations for private management, restructured 21 schools within the system, and increased per-pupil funding for 16 additional schools.

However, in an analysis of test results for the four-year period following the takeover, Gill et al. found that gains over pre-takeover baseline scores for low-quartile students were not distinguishable from similar schools in other Pennsylvania cities. Results from the 2005 Pennsylvania System of Student Assessment revealed that one half of African-American and Hispanic fifth grade students in the Philadelphia school district performed in the lowest quartile of achievement in reading (Pennsylvania Department of Education, n.d.).

Paul Vallas, former CEO of the Philadelphia school district, reported that children in the district's public schools are exposed to violence, disruptive behavior, and disrespect (Snyder, 2004). Bowdre (2006) added low academic achievement to the list and stated, "Parents who elect to send their children to a private religious school in this community have made a deliberate decision to shelter their children from these influences" (p. 4). There are over 100 Christian schools in Philadelphia; 34 are affiliated with the Christian school organization represented by the schools in this study (Bowdre, personal communication, March 2008). These urban Christian schools are populated with students who are similar to those in the local public schools in ethnicity and socioeconomic status.

Five schools that participated in this study were participants in an initiative to implement F&F in urban Christian schools in Philadelphia during the 2005-2006 school year. Administrators in these schools were interested in improving reading instruction and had learned about F&F through their affiliation with the local Christian school organization. During the previous school year, one urban Christian school piloted the F&F program in some classrooms based on the recommendation of the assistant

principal, who had received F&F training and had become certified to train teachers in F&F at her employing school. The assistant principal had been introduced to F&F through an urban Christian school in Birmingham, Alabama, and had observed the program at the founding suburban Christian school. In the summer of 2005, after piloting F&F in the school where she was employed, the assistant principal worked with a co-developer of the F&F program to train teachers from five urban Christian schools in Philadelphia to use F&F. The researcher became interested in these five urban schools after serving as trainer and consultant in the implementation of F&F at two urban Christian schools in Birmingham, where an administrator stated that implementation of F&F significantly impacted student achievement and motivation to read (C. Lynne, personal communication, March 3, 2008).

At the 2007 Christian school convocation, this researcher was introduced to administrators from urban Christian schools that did not implement F&F. These administrators expressed interest in the efficacy of F&F and agreed to participate in this study as non-F&F participants. Three administrators agreed to participate, but data from only two schools were compatible with data used for the study.

Previous studies of the efficacy of F&F have been conducted in suburban Christian and rural public schools (Albee, 2004; Robertson, 2003; Washburn, 2006) and within one urban school (Bowdre, 2006); however, this was the first study of F&F in multiple urban Christian schools with a comparison group of students from similar schools that did not use F&F.

### *Null Hypotheses*

To compare the reading comprehension and reading vocabulary achievement of fourth and fifth grade students who received F&F instruction with fourth and fifth grade students who did not receive F&F instruction, the *Stanford Achievement Test, 10<sup>th</sup> Edition* (SAT-10) was used as the pretest and posttest measures of achievement. The following null hypotheses were posed:

1. There is no significant difference in the reading vocabulary achievement of fourth grade students who received F&F instruction and the reading vocabulary achievement of fourth grade students who did not receive F&F instruction as measured by the SAT-10 standardized test while controlling for pretest scores.
2. There is no significant difference in the reading vocabulary achievement of fifth grade students who received F&F instruction and the reading vocabulary achievement of fifth grade students who did not receive F&F instruction as measured by the SAT-10 standardized test while controlling for pretest scores.
3. There is no significant difference in the reading comprehension achievement of fourth grade students who received F&F instruction and the reading comprehension achievement of fourth grade students who did not receive F&F instruction as measured by the SAT-10 standardized test while controlling for pretest scores.
4. There is no significant difference in the reading comprehension achievement of fifth grade students who received F&F instruction and the reading comprehension achievement of fifth grade students who did not receive F&F

instruction as measured by the SAT-10 standardized test while controlling for pretest scores.

Although the comparison of posttest achievement scores between students who received F&F instruction and students who did not receive F&F instruction was the critical aspect of this study, the researcher chose to examine growth in reading comprehension and vocabulary within the group of fourth and fifth grade students who received F&F instruction. Results were available from the *Gates-MacGinitie Reading Test, 4<sup>th</sup> Edition* (GMRT-4), Forms S (pretest) and T (posttest), to examine growth in reading comprehension and vocabulary within the group of fourth and fifth grade students who received F&F instruction. The following null hypotheses were posed:

1. There is no significant difference in the pretest and posttest vocabulary scores of fourth grade students who received F&F reading instruction as measured by the GMRT-4, Forms S and T.
2. There is no significant difference in the pretest and posttest vocabulary scores of fifth grade students who received F&F reading instruction as measured by the GMRT-4, Forms S and T.
3. There is no significant difference in the pretest and posttest reading comprehension scores of fourth grade students who received F&F reading instruction as measured by the GMRT-4, Forms S and T.
4. There is no significant difference in the pretest and posttest reading comprehension scores of fifth grade students who received F&F reading instruction as measured by the GMRT-4, Forms S and T.

In addition, Forms S and T of the GMRT-4 were used to compare the actual reading comprehension and vocabulary growth of F&F students to the expected reading comprehension and vocabulary growth as demonstrated by the GMRT-4 norming group.

The following null hypotheses were posed:

1. There is no significant difference in the reading comprehension growth of fourth grade students who received F&F reading instruction as compared to expected achievement growth as measured by the GMRT-4.
2. There is no significant difference in the vocabulary growth of fourth grade students who received F&F reading instruction as compared to expected achievement growth as measured by the GMRT-4.
3. There is no significant difference in the reading comprehension growth of fifth grade students who received F&F reading instruction as compared to expected achievement growth as measured by the GMRT-4.
4. There is no significant difference in the vocabulary growth of fifth grade students who received F&F reading instruction as compared to expected achievement growth as measured by the GMRT-4.

### *Research Design*

A causal-comparative posttest only non-equivalent group design was used to determine if a significant difference existed between the reading comprehension and vocabulary achievement of fourth and fifth grade students who received F&F instruction and fourth and fifth grade students who did not receive F&F instruction. The students comprised intact classrooms in five urban schools with very similar populations. Three schools that implemented F&F formed the treatment group; two schools that did not use

F&F formed the control group. A *t* test for independent samples was performed to determine if the pretest scores of fourth graders in each group and fifth graders in each group were significantly different. Though a significant difference in pretest scores was not indicated by the *t* test for independent samples, a difference between the groups was noted. The researcher performed an analysis of covariance (ANCOVA) to statistically equate the non-equivalent groups by controlling for pre-existing differences in pretest scores.

For an analysis that was secondary to the study, a pretest-posttest pre-experimental design was used to determine if a significant difference existed between the reading comprehension and vocabulary achievement of fourth and fifth grade students as measured by the GMRT-4. The pretest was administered before students received F&F instruction. The posttest was administered after students received seven months of F&F instruction. A *t* test for dependent samples was performed to determine if there was a significant difference between pretest and posttest results.

Since there was no control group in the pretest-posttest pre-experimental one-group design, the researcher also used expected growth data from the GMRT-4 norms in a static-group comparison to answer the additional questions, “Is there a difference in the actual vocabulary growth of F&F students in the study as compared to the expected vocabulary growth?” and “Is there a difference in the actual reading comprehension growth of F&F students in the study as compared to the expected reading comprehension growth?” A one-sample *t* test was used to determine whether significant differences existed between the actual growth of the F&F groups and the expected growth as demonstrated by the GMRT-4 norming group.

For this study, SAT-10 results were obtained from three schools using F&F and two schools not using F&F. Other schools whose administrators agreed to participate in the study used different achievement tests, the *TerraNova* and the *Metropolitan Achievement Test, 8<sup>th</sup> Edition*, with results that could not be compared to the SAT-10; therefore, these schools were excluded from the study. GMRT-4 scores were obtained from the five schools that used F&F reading instruction. Appropriate permission to use coded student data was obtained from each school administrator.

### *Population*

The population consisted of 276 fourth and fifth grade students who attended the seven urban Christian schools in Philadelphia that were represented in this study. Specific data related to race and ethnicity within each school was not available. Of these students, 199 were enrolled for two consecutive school years. Eighty-six students took the SAT-10 and the GMRT-4. Fifty-three students took only the SAT-10, and 60 students took only the GMRT-4. Sixteen students from one F&F school were excluded because they were receiving a second year of F&F instruction. Reading comprehension and vocabulary pretest scores affected by the measurement ceiling were excluded from analysis. This included three reading comprehension scores and five vocabulary scores on the GMRT-4 and one reading comprehension score and three vocabulary scores on the SAT-10. All five F&F urban schools affiliated with the Christian school organization in Philadelphia agreed to participate in this study. The two non-F&F urban schools were an accessible sample because they were associated with the same organization, and their administrators agreed to participate. The researcher chose to study both fourth and fifth grades due to the

limited sample size represented by either grade level. There was one class per grade level at each school, and all classes in the study were single-grade intact classrooms.

### *Instrumentation*

The *Stanford Achievement Test, 10<sup>th</sup> Edition* (SAT-10), is a battery of tests designed to measure student achievement in reading, language, spelling, mathematics, science, social studies, listening, and thinking skills. According to the *Mental Measurement Yearbook*, the SAT-10 may be useful for determining longitudinal progress and for making decisions regarding adequate instruction (Morse, 2004). Based on information in the SAT-10 supplemental resource, *Guide for Organizational Planning*, results may help administrators in answering “[q]uestions about longitudinal growth and change [and] . . . evaluating specific programs and policies” (Harcourt, 2003, p. 9). The SAT-10 reports student achievement with several types of scores. For the purpose of this study, scaled scores (SS) and normal curve equivalents (NCEs) were used to measure growth. Scaled scores are continuous for any given subtest and show growth over time, such as kindergarten through twelfth grade. Normal curve equivalents, based on percentiles that have been converted statistically into an equal-units scale, demonstrate position relative to a norming group. “NCEs have become the preferred, and for some funding agencies the required, mode for measuring change” (Harcourt, p. 38).

In the *Guide for Organizational Planning* it is suggested that if the SAT-10 is used to evaluate an experimental program, “a control group should be selected from the same population and both groups should be pretested and posttested. The pre/post difference for the control group would define normal growth. The performance of the experimental group could then be compared to that baseline” (p. 39). The *Guide* also

suggests that group averages should be used when evaluating programs. This eliminates a potential reliability problem created when “two highly reliable tests can still yield a difference score that is far less reliable. . . . The difference score for group averages does not suffer from the same degree of unreliability because errors in measurement for individuals tend to cancel each other out” (p. 40). In his review of the SAT-10, Carney (2004) described the development of the SAT-10 and recognized an adequate effort to screen test items and minimize bias in appropriate categories. He indicated that the test exhibits satisfactory internal consistency reliability levels in the mid-.80s to .90s and that evidence for validity also appears to be satisfactory.

The *Gates-MacGinitie Reading Tests, 4<sup>th</sup> Edition*, is a test series developed to measure student achievement in reading. The series measures “the students’ knowledge of concepts related to reading, their knowledge of decoding skills and word meanings, and their understanding of what they read” (MacGinitie, MacGinitie, Maria, Dreyer, 2002, p. 64). Each test level consists of subtests based on key literacy skills that are appropriate for each level. For pretesting and posttesting, alternate forms of the test are provided (Forms S and T). Student achievement is reported through five types of scores: normal curve equivalent (NCE), percentile rank, stanine, grade equivalent, and extended scale score (ESS). For the purpose of this study, ESSs were used to evaluate growth. Extended scale scores “measure reading achievement in equal units” and “are suitable for computing averages” (MacGinitie et al., p. 27). The test authors described efforts to minimize cultural bias through the use of differential item functioning (DIF) analysis and minority consultants. They stated, “In the attempt to make sure that the GMRT is as free of bias as possible, questions were eliminated whenever there was strong statistical

evidence of DIF, even when the authors and minority consultants could locate no basis for bias in the question” (p. 31). Johnson (2004, Technical section, ¶ 1) reported “strong total test and subtest internal consistency levels with coefficient values at or above .90” for the test levels included in this study. Alternate form correlations for total scores (Vocabulary and Reading Comprehension) are also at or above .90 at all levels relevant to this study (McCabe, 2004). In their reviews of the GMRT-4, both Johnson and McCabe affirmed strong evidence for test validity.

#### *Data Collection*

Approval was obtained from the Institutional Review Board at Liberty University and written permission was granted from the administrator of each school for the use of archived data. The data consisted of SAT-10 reading comprehension and vocabulary scores for students in the third, fourth, and fifth grades in the spring of 2005 and spring of 2006. Also collected were GMRT-4 reading comprehension and vocabulary scores for students in the fourth and fifth grades in the fall of 2005 and the spring of 2006. The researcher was not present during F&F instruction or during the administration of tests. Test data were provided by each school administrator. The data, which were used to track individual data entries, were coded with a unique identification number for each student and each school. These were entered into a Microsoft Excel spreadsheet and transferred to SPSS 12.0 for analysis.

#### *Data Analysis*

An analysis of covariance (ANCOVA) was performed on results from the SAT-10 to determine if there was a significant difference between the posttest SSs and

NCEs in reading comprehension and vocabulary for fourth grade students and for fifth grade students in F&F and non-F&F schools.

In a secondary analysis, a *t* test for dependent samples was performed on data from the GMRT-4 to determine if there was a significant difference between pretest and posttest scaled scores and pretest and posttest NCE scores for each grade level for reading comprehension and vocabulary. In addition, due to the absence of a control group for comparing data, growth in reading comprehension and vocabulary achievement was compared to expected growth as demonstrated by the GMRT-4 norming group. A benchmark from which to calculate expected growth was established by the pretest ESS mean of the F&F group. Each ESS has a corresponding grade-equivalent score that is reported in the *Gates-MacGinitie Reading Tests Manual for Scoring and Interpretation, 4<sup>th</sup> Edition*. Normal growth over seven months of instructional time (the difference between the pretest and posttest administration dates) is expected to be +0.7 in grade equivalency. (An achievement gain representing one year of growth, from one month of a school year to the same month of the following year, is +1.0.) The expected ESS score, which is associated with seven months of growth from the benchmark ESS, was identified in the GMRT-4 scoring and interpretation manual and was used for comparison with actual ESS scores. The researcher used an Excel program to calculate actual growth in reading comprehension and vocabulary by subtracting the pretest ESS scores from the posttest ESS scores. Using one-sample *t* tests, actual growth in reading comprehension and actual growth in vocabulary for the F&F group were compared to the expected growth in reading comprehension and the expected growth in vocabulary as demonstrated by the GMRT-4 norming group.

*Summary*

The researcher examined the efficacy of F&F on the achievement of fourth and fifth grade students in reading comprehension and vocabulary by comparing data from F&F and non-F&F schools, by comparing student achievement prior to instruction and following instruction, and by comparing actual growth in achievement to expected growth in achievement following seven months of instruction. The researcher used archived data from seven schools in a study of the efficacy of F&F on elementary students' reading achievement in urban Christian schools in Philadelphia. Achievement test data relating to reading comprehension and vocabulary as measured by the SAT-10 and the GMRT-4 were collected and coded. Statistical analyses employed *t* tests of independent samples, analysis of covariance (ANCOVA), *t* tests of paired samples, and one-sample *t* tests. Using the standard measure of significance ( $p < 0.05$ ), the researcher formed conclusions regarding the hypotheses. Results from the analysis of data and the acceptance or rejection of null hypotheses are communicated in the following chapter.

## Chapter IV

### Results of the Study

This chapter presents the findings from a study designed to investigate the efficacy of *Foundations & Frameworks* on elementary students' reading achievement in urban Christian schools in Philadelphia. The analyses of data related to the null hypotheses are organized into three groups as described in Chapter 1. The first analysis tested the first four null hypotheses to answer the question, "Is there a difference between the reading comprehension and vocabulary growth of fourth and fifth grade students who received F&F instruction and fourth and fifth grade students who did not receive F&F instruction?" The next analysis tested the second group of null hypotheses to answer the question, "Did the fourth and fifth grade students who received F&F instruction for seven months experience growth in reading comprehension and vocabulary?" The final analysis tested the last group of hypotheses to answer the question, "Is there a difference in the actual reading comprehension and vocabulary growth of F&F students in the study, as compared to the expected growth?"

#### *Hypotheses Related to the Causal-Comparative Analyses*

The causal-comparative analyses to test the first group of hypotheses compared achievement between the treatment group of three schools that implemented F&F and a control group of two schools that did not implement F&F. The statistical analyses of these hypotheses began with a *t* test for independent samples to determine if the pretest scores of fourth graders in each group and fifth graders in each group were significantly different. Though a significant difference in pretest scores was not indicated by the *t* test

for independent samples, a difference between the groups was noted. The researcher performed an analysis of covariance (ANCOVA) to statistically equate the non-equivalent groups by controlling for pre-existing differences in pretest scores.

Achievement was measured in scaled scores (SSs) and normal curve equivalents (NCEs).

*Null Hypothesis 1: There is no significant difference in the reading vocabulary achievement of fourth grade students who received F&F instruction and the reading vocabulary achievement of fourth grade students who did not receive F&F instruction, as measured by the SAT-10 standardized test while controlling for pretest scores.* A pretest mean difference of 19.74 SS points existed between F&F and non-F&F scores; however, the results of the *t* test for independent samples revealed no significant difference in pretest scores (see Table 4.1). Due to the difference that was noted between pretest scores, the researcher performed an ANCOVA to control for this pretest difference. In this analysis, posttest means and means adjusted for pretest differences did not vary (see Table 4.2). Though the posttest mean score for F&F students was greater than the posttest mean score for non-F&F students, the ANCOVA revealed no significant difference in the results (see Table 4.3). Therefore, the null hypothesis was accepted.

Table 4.1

*Vocabulary Pretest Scores of Fourth Grade Students*

Score	Group	<i>N</i>	<i>M</i>	<i>SD</i>	Difference	<i>t</i>	<i>p</i>
SS	F&F	30	618.30	49.81	19.74	1.70	.10
	Non-F&F	25	598.56	32.80			
NCE	F&F	30	51.54	21.73	7.11	1.38	.173
	Non-F&F	25	44.43	15.06			

Table 4.2

*Vocabulary Pretest and Posttest Means and Adjusted Means for Fourth Grade Students*

Score	Group	Pretest	Posttest	Adjusted Posttest
SS	F&F	618.30	633.20	633.20
	Non-F&F	598.56	619.68	619.68
NCE	F&F	51.54	49.84	49.84
	Non-F&F	44.43	45.02	45.02

Table 4.3

*Vocabulary Posttest Scores of Fourth Grade Students*

Score	Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>
SS	F&F	30	633.20	55.47	1	.00	.98
	Non-F&F	25	619.68	35.74			
NCE	F&F	30	49.84	22.32	1	.01	.93
	Non-F&F	25	45.02	13.69			

*Null Hypothesis 2: There is no significant difference in the reading vocabulary achievement of fifth grade students who received F&F instruction and the reading vocabulary achievement of fifth grade students who did not receive F&F instruction, as measured by the SAT-10 standardized test while controlling for pretest scores.* A pretest mean difference of 9.04 SS points existed between F&F and non-F&F scores; however, the results of the *t* test for independent samples revealed no significant difference in pretest scores (see Table 4.4). Due to the difference that was noted between pretest scores, the researcher performed an ANCOVA to control for this pretest difference. In this analysis, posttest means and means adjusted for pretest differences did not vary (see Table 4.5). Though the posttest mean score for F&F students was slightly greater than the posttest mean score for non-F&F students, the ANCOVA revealed no significant difference in the results (see Table 4.6). Therefore, the null hypothesis was accepted.

Table 4.4

*Vocabulary Pretest Scores of Fifth Grade Students*

Score	Group	<i>N</i>	<i>M</i>	<i>SD</i>	Difference	<i>t</i>	<i>p</i>
SS	F&F	22	630.77	29.95	-9.04	-1.09	.28
	Non-F&F	26	639.81	27.28			
NCE	F&F	22	49.39	11.31	-1.94	-.60	.55
	Non-F&F	26	51.32	10.87			

Table 4.5

*Vocabulary Pretest and Posttest Means and Adjusted Means for Fifth Grade Students*

Score	Group	Pretest	Posttest	Adjusted Posttest
SS	F&F	630.77	656.36	656.36
	Non-F&F	639.81	656.19	656.19
NCE	F&F	49.39	53.62	53.62
	Non-F&F	51.32	53.26	53.26

Table 4.6  
*Vocabulary Posttest Scores of Fifth Grade Students*

Score	Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>
SS	F&F	22	656.36	23.69	.1	.42	.52
	Non-F&F	26	656.19	29.64			
NCE	F&F	22	53.62	11.48	.1	.21	.65
	Non-F&F	26	53.26	14.24			

*Null Hypothesis 3: There is no significant difference in the reading comprehension achievement of fourth grade students who received F&F instruction and the reading comprehension achievement of fourth grade students who did not receive F&F instruction, as measured by the SAT-10 standardized test while controlling for pretest scores.* A pretest mean difference of 14.77 SS points existed between F&F and non-F&F scores; however, the results of the *t* test for independent samples revealed no significant difference in pretest scores (see Table 4.7). Due to the difference that was noted between pretest scores, the researcher performed an ANCOVA to control for this pretest difference. In this analysis, posttest means and means adjusted for pretest differences did not vary (see Table 4.8). Though the posttest mean score for F&F students was greater than the posttest mean score for non-F&F students, the ANCOVA revealed no significant difference in the results (see Table 4.9). Therefore, the null hypothesis was accepted.

Table 4.7

*Reading Comprehension Pretest Scores of Fourth Grade Students*

Score	Group	<i>N</i>	<i>M</i>	<i>SD</i>	Difference	<i>t</i>	<i>p</i>
SS	F&F	30	623.33	31.89	14.77	1.69	.10
	Non-F&F	25	608.56	32.86			
NCE	F&F	30	51.00	15.55	6.20	1.47	.15
	Non-F&F	25	44.80	15.51			

Table 4.8

*Reading Comprehension Pretest and Posttest Means and Adjusted Means for Fourth Grade Students*

Score	Group	Pretest	Posttest	Adjusted Posttest
SS	F&F	623.33	632.37	632.37
	Non-F&F	608.56	617.64	617.64
NCE	F&F	51.00	50.54	50.54
	Non-F&F	44.80	43.45	43.45

Table 4.9

*Reading Comprehension Posttest Scores of Fourth Grade Students*

Score	Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>
SS	F&F	30	632.37	37.90	1	.28	.60
	Non-F&F	25	617.64	29.75			
NCE	F&F	30	50.54	18.45	1	.53	.47
	Non-F&F	25	43.45	14.90			

*Hypothesis 4: There is no significant difference in the reading comprehension achievement of fifth grade students who received F&F instruction and the reading comprehension achievement of fifth grade students who did not receive F&F instruction, as measured by the SAT-10 standardized test while controlling for pretest scores.* A small pretest mean difference of .661 SS points existed between F&F and non-F&F scores; the results of the *t* test for independent samples revealed no significant difference in pretest scores (see Table 4.10). However, due to the difference that was noted between pretest scores, the researcher performed an ANCOVA to control for this pretest difference. In this analysis, posttest means and means adjusted for pretest differences did not vary (see Table 4.11). Though the posttest mean score for non-F&F students was greater than the posttest mean score for F&F students, the ANCOVA revealed no significant difference in the results (see Table 4.12). Therefore, the null hypothesis was accepted.

Table 4.10

*Reading Comprehension Pretest Scores for Fifth Grade Students*

Score	Group	<i>N</i>	<i>M</i>	<i>SD</i>	Difference	<i>t</i>	<i>p</i>
SS	F&F	22	633.45	30.36	-.661	-.08	.93
	Non-F&F	26	634.12	22.95			
NCE	F&F	22	51.23	11.18	-.85	-.22	.83
	Non-F&F	26	50.39	14.87			

Table 4.11

*Reading Comprehension Pretest and Posttest Means and Adjusted Means for Fifth Grade Students*

Score	Group	Pretest	Posttest	Adjusted Posttest
SS	F&F	633.34	647.77	647.77
	Non-F&F	634.12	650.65	650.65
NCE	F&F	51.23	52.64	52.64
	Non-F&F	50.39	54.05	54.05

Table 4.12

*Reading Comprehension Posttest Scores of Fifth Grade Students*

Score	Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p</i>
SS	F&F	22	647.77	24.88	1	.20	.65
	Non-F&F	26	650.65	26.40			
NCE	F&F	22	52.64	13.11	1	.52	.48
	Non-F&F	26	54.05	13.91			

*Hypotheses Related to the Pre-experimental Analysis*

The pretest-posttest pre-experimental analyses to test the second group of hypotheses compared fourth and fifth grade achievement in five schools before and after implementing F&F instruction. The pretest was administered in October 2005 prior to seven months of F&F instruction; the posttest was administered in May 2006. A *t* test for dependent samples was performed to test each of the hypotheses. Growth was measured in SSs and NCEs. A highly significant correlation between pretest and posttest scores of the paired samples indicated that students would score similarly on both tests.

*Hypothesis 1: There is no significant difference in the pre- and posttest vocabulary scores of fourth grade students who received F&F reading instruction, as measured by the GMRT-4, Forms S and T.* The mean ESS gain for fourth grade students was 17.75, with a range of 114 points and a standard deviation of 19.94. The minimum ESS lost 22 points from pretest to posttest; the maximum ESS gained 92 points. The

mean gain reported as NCE was 4.37. Using  $p < 0.05$  as the indicator of statistical significance, the results of the  $t$  test for dependent samples revealed a highly significant difference in pretest and posttest NCEs ( $p = .00$ ) and ESSs ( $p = .00$ ) for fourth grade students in vocabulary (see Table 4.9). The null hypothesis was rejected.

*Hypothesis 2: There is no significant difference in the pre- and posttest vocabulary scores of fifth grade students who received F&F reading instruction, as measured by the GMRT-4, Forms S and T.* The mean ESS gain for fifth grade students was 18.06, with a range of 111 points and a standard deviation of 20.67. The minimum ESS lost 29 points from pretest to posttest; the maximum ESS gained 82 points. The mean gain reported as NCE was 6.19. Using  $p < 0.05$  as the indicator of statistical significance, the results of the  $t$  test for dependent samples revealed a highly significant difference in pretest and posttest NCEs ( $p = .00$ ) and ESSs ( $p = .00$ ) for fifth grade students in vocabulary (see Table 4.9). The null hypothesis was rejected.

Table 4.13

*Pretest and Posttest Vocabulary Scores of Fourth and Fifth Grade Students Who Received F&F Instruction*

Grade	<i>N</i>	Pretest	Posttest	Difference	<i>SD</i>	<i>t</i>	<i>p</i>
4 <sup>th</sup> Grade	60						
ESS		474.93	492.68	17.75	19.94	6.89*	.00
NCE		46.32	50.68	4.37	10.27	3.30*	.00
5 <sup>th</sup> Grade	70						
ESS		497.66	515.71	18.06	20.67	7.31*	.00
NCE		48.41	54.60	6.19	11.00	4.70*	.00

\*Significance at  $p < 0.05$

*Hypothesis 3: There is no significant difference in the pre- and posttest reading comprehension scores of fourth grade students who received F&F reading instruction, as measured by the GMRT-4, Forms S and T. The mean ESS gain for fourth grade students was 13.33, with a range of 87 points and a standard deviation of 21.13. The minimum ESS lost 22 points from pretest to posttest; the maximum ESS gained 65 points. The mean gain reported as NCE was 2.35. Using  $p < 0.05$  as the indicator of statistical significance, the results of the *t* test for dependent samples reveal mixed results by types of scores. Though growth was demonstrated through the difference in pretest and posttest NCEs, the gain in reading comprehension for fourth grade students was not significant ( $p = .12$ ). The difference in pretest and posttest ESSs ( $p = .00$ ) for fourth grade students in*

reading comprehension was highly significant (see Table 4.10). The null hypothesis was accepted for NCE scores; however, the null hypothesis was rejected for ESSs.

*Hypothesis 4: There is no significant difference in the pre- and posttest reading comprehension scores of fifth grade students who received F&F reading instruction, as measured by the GMRT-4, Forms S and T.* The mean ESS gain for fifth grade students was 16.6, with a range of 117 and a standard deviation of 17.62. The minimum ESS lost 25 points from pretest to posttest; the maximum ESS gained 62 points. The mean gain reported as NCE was 5.29. Using  $p < .05$  as the indicator of statistical significance, the results of the  $t$  test for dependent samples revealed a highly significant difference in pretest and posttest NCE ( $p = .00$ ) and ESS ( $p = .00$ ) for fifth grade students in reading comprehension (see Table 4.10). The null hypothesis was rejected.

Table 4.14

*Pretest and Posttest Reading Comprehension Scores of Fourth and Fifth Grade Students Who Received F&F Instruction*

Grade Score	<i>N</i>	Pretest	Posttest	Difference	<i>SD</i>	<i>t</i>	<i>p</i>
4 <sup>th</sup> Grade	60						
SS		468.43	481.77	13.33	21.13	4.89*	.00
NCE		41.00	43.35	2.35	11.50	1.58	.12
5 <sup>th</sup> Grade	70						
SS		491.59	508.19	16.60	17.62	7.88*	.00
NCE		44.67	49.96	5.29	9.90	4.47*	.00

\*Significance at  $p < 0.05$

### *Hypotheses Related to the Comparison of Actual to Expected Growth*

In the absence of a control group for comparison of vocabulary and reading comprehension scores on the GMRT-4, the researcher posed the following question: Is there a difference in the actual vocabulary and reading comprehension growth of F&F students in the study as compared to expected growth? Form S of the GMRT-4 was administered in October 2005 as a pretest prior to seven months of F&F instruction. The mean ESS from Form S was established as an initial benchmark for the F&F group and the GMRT-4 norming group. Form T was administered in May 2006 following seven months of F&F instruction. The mean ESS from Form T was used to compare actual growth to expected growth from the established benchmark as demonstrated by the GMRT-4 normative group. A one-sample *t* test was performed to test each of the hypotheses. Growth was measured in ESSs.

*Hypothesis 1: There is no significant difference in the reading comprehension growth of fourth grade students who received F&F reading instruction, as compared to the expected reading comprehension growth as measured by the GMRT-4.* Fourth grade students did not achieve the level of expected growth (14.57 ESS points) in reading comprehension with a mean ESS difference of -1.23 points. Using  $p < 0.05$  as the indicator of significance, the results of the one-sample *t* test revealed no significant difference between actual growth and expected growth in reading comprehension for fourth grade students (see Table 4.11). The null hypothesis was accepted.

*Hypothesis 2: There is no significant difference in the vocabulary growth of fourth grade students who received F&F reading instruction, as compared to expected the vocabulary growth as measured by the GMRT-4.* Fourth grade students did surpass

the level of expected growth (13.07) in vocabulary with a mean difference of 4.68.

However, using  $p < 0.05$  as the indicator of significance, the results of the one-sample  $t$  test revealed no statistically significant difference between actual growth and expected growth in vocabulary for fourth grade students (see Table 4.11). The null hypothesis was accepted.

Table 4.15

*Comparison of Actual Growth to Expected Growth in Reading Comprehension and Vocabulary for Fourth Grade Students*

Subtest								
Grade	<i>N</i>	Pretest	Posttest	Posttest	Expected	Actual		
Score		<i>M</i>	Expected	Actual	Growth	Growth	<i>t</i>	<i>p</i>
Reading Comprehension								
4 <sup>th</sup> Grade	60							
SS		468.43	483.00	481.77	14.57	13.34	-.45	.65
Vocabulary								
4 <sup>th</sup> Grade	60							
SS		474.93	488.00	492.68	13.07	17.75	1.82	.07

*Hypothesis 3: There is no significant difference in the reading comprehension growth of fifth grade students who received F&F reading instruction, as compared to the expected reading comprehension growth as measured by the GMRT-4. Fifth grade students surpassed the level of expected growth (10.41) in reading comprehension, with a mean difference of 6.19. Using  $p < 0.05$  as the indicator of significance, the results of the*

one-sample  $t$  test reveal a highly significant difference between actual growth and expected growth in reading comprehension for fifth grade students (see Table 4.12). The null hypothesis was rejected.

*Hypothesis 4: There is no significant difference in the vocabulary growth of fifth grade students who received F&F reading instruction, as compared to the expected vocabulary growth as measured by the GMRT-4.* Fifth grade students surpassed the level of expected growth (10.41) in vocabulary with a mean difference of 8.71. Using  $p < 0.05$  as the indicator of significance, the results of the one-sample  $t$  test revealed a highly significant difference between actual growth and expected growth in vocabulary achievement for fifth grade students (see Table 4.12). The null hypothesis was rejected.

Table 4.16

*Comparison of Actual Growth to Expected Growth in Reading Comprehension and Vocabulary for Fifth Grade Students*

Subtest								
Grade	<i>N</i>	Pretest	Posttest	Posttest	Expected	Actual		
Score		<i>M</i>	Expected	Actual	Growth	Growth	<i>t</i>	<i>p</i>
Reading Comprehension								
5 <sup>th</sup> Grade	70							
SS		491.59	502.00	508.19	10.41	16.60	2.94*	.00
Vocabulary								
5 <sup>th</sup> Grade	70							
SS		497.66	507.00	515.71	9.34	18.05	3.53*	.00

Significance at  $p < 0.05$

### *Summary*

For this study, three groups of hypotheses were evaluated. Results related to the first group of hypotheses are of primary interest. For this first group of hypotheses, analysis of covariance (ANCOVA) was used to compare the achievement in reading comprehension and reading vocabulary of students who had received F&F reading instruction with the achievement of students who had not received F&F instruction. There were no statistically significant differences in posttest scores within this group of hypotheses; therefore, the null hypotheses were accepted.

For the second group of hypotheses, which were of secondary interest in this study, *t* tests for dependent samples were used to compare reading comprehension and vocabulary pretest and posttest scores of students who received F&F instruction. Statistically significant differences were noted between pretest and posttest scores in each analysis; therefore, the null hypotheses were rejected.

For the third group of hypotheses, which were also of secondary interest in this study, one-sample *t* tests were used to examine differences between expected growth and actual growth in reading comprehension and vocabulary following seven months of F&F instruction. Results were mixed. There were no significant differences between expected and actual growth for fourth grade students. In contrast, there were highly significant differences between expected and actual growth for fifth grade students. The null hypotheses were accepted for fourth grade students, but they were rejected for fifth grade students.

In the following chapter, the researcher will provide a discussion of the findings and will make recommendations for additional research.

## Chapter V

### Summary and Discussion

The process of learning to read is affected not only by the classroom context, but also by the expanded socio-cultural environment that surrounds the student (Snow, 2002). Snow suggested further research to examine the relationship between membership in defined socio-cultural groups and reading comprehension. The researcher purposed to assess the efficacy of *Foundations & Frameworks* on elementary students' reading achievement in urban Christian schools in Philadelphia. This final chapter provides a review of the research problem, the methodology, and the results. It also offers a discussion of the findings and recommendations for additional research.

#### *Review of the Problem*

The achievement gap between White and minority students continues. To reduce this gap, educators incorporate practices that seem promising based on research and experience. Programs have been developed that positively impact the beginning reading skills of minority students; however, finding a successful reading program that targets reading comprehension for these students remains a challenge. *Foundations & Frameworks* is an instructional program focused on the development of reading comprehension skills. It is characterized by components that have been successful in a variety of socio-cultural environments. This research study began with the question, "Can the efficacy of F&F reading instruction be observed in urban schools?"

To answer this question a study was conducted of seven urban Christian schools in Philadelphia. Five of these schools implemented F&F instruction during the 2005-2006

school year. Null hypotheses were formed for the following research questions: (a) Is there a difference between the reading comprehension and vocabulary growth of fourth and fifth grade students who received F&F instruction and fourth and fifth grade students who did not receive F&F instruction? (b) Did the fourth and fifth grade students who received F&F instruction for seven months experience significant growth in reading comprehension and vocabulary? (c) Is there a difference in the actual reading comprehension and vocabulary growth of fourth and fifth grade F&F students as compared to expected achievement growth?

#### *Review of the Methodology*

Of primary interest to this study, causal-comparative analyses were conducted to compare the achievement scores of three schools that implemented F&F and two schools that did not implement F&F. Descriptive and inferential statistical data were collected. Data from the SAT-10 given in the spring prior to implementation provided pretest scores, and data from the SAT-10 given in the spring following implementation provided posttest scores. Scores were analyzed using analysis of covariance (ANCOVA) to compare achievement in reading comprehension and vocabulary for students in fourth and fifth grades. Posttest results from F&F and non-F&F groups were compared.

Pretest-posttest pre-experimental analyses were conducted for fourth and fifth grade students in five F&F schools to compare student achievement in reading comprehension and vocabulary prior to implementing F&F and following seven months of F&F instruction. Data from the GMRT-4 given in the fall prior to implementation provided pretest scores, and data from the GMRT-4 given in the spring following

implementation provided posttest scores. Scores were analyzed using *t* tests for dependent samples to compare pretest and posttest means.

Comparisons of actual growth to expected growth in reading comprehension and vocabulary achievement were conducted for each grade level using one-sample *t* tests. Data from the GMRT-4 given in the fall prior to implementation were used to establish a benchmark from which to measure growth. Actual growth in achievement after seven months was compared to a standard of expected growth established by the GMRT-4 norming group.

### *Summary of the Results*

Results from the causal-comparative analyses using analysis of covariance revealed no significant differences in the reading vocabulary or reading comprehension achievement of fourth and fifth grade students in F&F and non-F&F schools. Although pretest and posttest mean scores in reading vocabulary for the non-F&F schools were lower than pretest and posttest mean scores for the F&F schools, the non-F&F schools demonstrated greater growth between the pretest and posttest; however, no statistical significance was found. In contrast, F&F fifth grade students demonstrated greater growth than non-F&F students in vocabulary mean scores from pretest to posttest; however, no statistical significance was found. In the comparison of mean scores for fourth grade reading comprehension, growth between pretest and posttest scores was nearly identical for F&F and non-F&F students. For fifth grade students, the comparison of pretest and posttest mean scores in reading comprehension revealed greater growth for non-F&F students; however, the difference was not statistically significant.

Results from the pretest-posttest pre-experimental analyses of F&F students using *t* tests for dependent samples revealed statistically significant differences, with moderate effect sizes in vocabulary and reading comprehension achievement for fourth and fifth grade students. In the pretest-posttest comparison of vocabulary achievement, fourth and fifth grade students' gains were statistically significant, with moderate effect sizes of  $d = .60$  and  $d = .62$ , respectively. In the pretest-posttest comparison of reading comprehension, both fourth and fifth grade students achieved statistically significant gains with moderate effect sizes of  $d = .55$  and  $d = .64$ , respectively.

There were mixed results from the comparison of actual growth to expected growth using one-sample *t* tests. Comparisons of fourth grade reading comprehension scores revealed no significant differences, and students did not reach the expected benchmark. In vocabulary, fourth grade students scored above the expected benchmark, and the difference approached significance ( $p = .07$ ). In contrast, comparisons of fifth grade scores revealed statistically significant differences in reading comprehension ( $p = .00$ ) and vocabulary ( $p = .00$ ).

### *Discussion of the Results*

The results of the comparison of F&F schools to non-F&F schools should be encouraging to F&F school teachers and administrators even though the comparison of posttest scores yielded no significant difference. Results are encouraging because students in F&F schools exhibited comparable growth during the initial implementation of a program that requires a paradigm shift for teachers who have been accustomed to a commercially-produced basal reading series. Basal reading series provide lesson plans, student workbook pages, and tests, which teachers typically perceive as beneficial and

timesaving. In contrast, F&F provides a structured approach for teachers to employ in creating their own lesson plans, student assignments, and assessments.

The results of the pretest-posttest analysis of student performance within F&F schools on the GMRT-4 indicate that fourth and fifth grade students progressed significantly over seven months of instruction. In addition, the following observations can be made based on an analysis of descriptive statistics:

1. The range of student ability in vocabulary and reading comprehension for both grade levels before F&F instruction extends across several grade levels. For fourth grade vocabulary, the grade equivalent range extended from 2.3 to 7.6; for fourth grade reading comprehension, the range extended from 2.0 to 7.4. For fifth grade vocabulary, the grade equivalent range extended from 2.9 to 11.7; for fifth grade reading comprehension, the range extended from 2.4 to 10.0. This wide variance in student ability poses a tremendous challenge to a classroom teacher when planning to meet the needs of individual learners.
2. For fourth and fifth grade students, the mean score in both vocabulary and reading comprehension increased significantly from pretest to posttest. However, the lower grade equivalent in the range of scores changed little, while the upper grade equivalent in the range of scores demonstrated a notable increase. For fourth grade vocabulary on the posttest, the maximum grade equivalent increased from 7.6 to 11.2; for fourth grade comprehension, from 7.4 to 8.7. For fifth grade vocabulary on the posttest, the maximum grade equivalent increased from 11.7 to PHS; for fifth grade comprehension, from 10.0 to 11.2. This contrast between

achievement gains could have implications in favor of supplementary intervention for students whose pretest scores are in the lower range.

In comparisons of actual growth to expected growth in reading comprehension and vocabulary, fifth grade students achieved a difference that was highly significant. In contrast, fourth grade students achieved slightly less than expected in reading comprehension. This group advanced more than expected in vocabulary achievement, but the difference was not statistically significant. It could be suggested that the fifth grade students adapted more readily to the changes inherent in the implementation of F&F. This could have implications related to choice of grade level for schools that desire to pilot F&F for an in-school comparison.

Following the analysis of results related to the stated research questions and null hypotheses posed by this study, the researcher conducted a one-way analysis of variance (ANOVA) to compare differences among F&F schools on vocabulary and reading comprehension pretests and to compare differences among schools in growth on vocabulary and reading comprehension tests at the fourth and fifth grade levels. Observations were made using Tukey's highly significant difference (HSD) test for pairwise comparisons. The following observations could have implications related to the quality of F&F implementation at each school:

1. At the fifth grade level, no significant difference was found between schools on the vocabulary pretest; however, an analysis of the growth in vocabulary revealed a significant difference between schools, with ANOVA results showing  $F(4, 65) = 14.36, p = .00$ . The post hoc test using Tukey's HSD found a highly significant

difference ( $p = .00$ ) between vocabulary growth in School 3 and the other four schools with  $M = 48.00$ ,  $SD = 20.92$  and  $M = 11.86$ ,  $SD = 14.32$ , respectively.

2. At the fifth grade level, a significant difference was found between Schools 1 and 5 on the reading comprehension pretest, with  $MD = 30.62$ ,  $p = .048$ , favoring School 1. An analysis of growth in reading comprehension revealed no significant difference between schools, with ANOVA results showing  $F(4, 65) = .53$ ,  $p = .72$ . Tukey's HSD indicated that School 1 grew less than every other school, although the difference is not significant. This is atypical because School 1 began with the highest pretest score.
3. At the fourth grade level, no significant difference was found between schools on the vocabulary pretest. An analysis of growth in vocabulary between schools revealed a highly significant difference, with ANOVA results showing  $F(4, 55)$ ,  $p = .00$ . The post hoc analysis using Tukey's HSD found significant differences (ranging from  $p = .026$  to  $p = .00$ ) in vocabulary growth between School 2 and the other four schools, with  $M = 39.00$ ,  $SD = 22.66$  and  $M = 12.44$ ,  $SD = 15.33$ , respectively.
4. At the fourth grade level, no significant difference was found between schools on the reading comprehension pretest. An analysis of growth in reading comprehension between schools revealed a significant difference, with ANOVA results showing  $F(4, 55) = 3.71$ ,  $p = .01$ . The post hoc analysis using Tukey's HSD found a significant difference in reading comprehension growth between School 2 and School 5, favoring School 2 ( $MD = 27.15$ ,  $p = .01$ ). Although differences in growth were not significant, School 2 also demonstrated the most

growth in reading comprehension in comparison to the other four schools, with  $M = 26.42$ ,  $SD = 20.04$  and  $M = 10.06$ ,  $SD = 20.29$ , respectively.

The researcher reported results based on standardized achievement tests, a frequently-used measure for evaluating student performance. However, Walberg (2007) suggested, “[S]uch tests do not represent the sum of students’ knowledge, attitudes, and skills or capture a host of other outcomes expected from education” (p. 16). One recommendation for additional research is based on comments received from administrators of F&F urban schools, such as, “Students are exceptionally motivated” (Bowdre, personal communication, June 2006), and “It [F&F] has positively increased their [student] academic drive in other classes” (Lynn, personal communication, March 2008).

#### *Limitations*

The following limitations in this study are recognized:

1. The study population represented a convenience sample that was limited in number.
2. The study population was represented by African-American and Hispanic students in a limited number of small Christian schools in one metropolitan area.
3. The diversity of the research population was limited in ethnicity and economics and ethnicity was aggregated.
4. The study population represents a convenience sample that was similar but not matching.
5. The level of implementation of F&F instruction was not controlled and could have varied among the schools.

6. Results from the study were limited to seven months of F&F implementation. Most researchers would agree that longitudinal data would provide a better representation of implementation results (Bargen, personal communication, February 18, 2007). This study could form the basis for a longitudinal study.
7. As co-developer of the reading program, it could be argued that this researcher had special interest in the results of the study.

*Recommendations for Additional Research*

1. Conduct a longitudinal study of F&F and non-F&F schools to compare student growth in reading comprehension and vocabulary scores.
2. Conduct a study of F&F and non-F&F urban schools to compare growth in critical thinking ability as measured by the *Cornell Critical Thinking Skills Test*.
3. Conduct a longitudinal study of program results to assess the effect of F&F on the range of scores following three to five years of F&F instruction.
4. Examine growth within performance quartiles to observe the effect of F&F instruction for students within each performance quartile.
5. Repeat the study with disaggregated racial and ethnic group data.
6. Examine initial F&F implementation results at other schools to determine whether similar differences between fourth grade and fifth grade scores were observed and results could be generalized to an expanded population.
7. Conduct a qualitative analysis of the level and quality of F&F implementation within each grade level and at each school.
8. Conduct a qualitative study of F&F instruction using data gathered from students, parents, teachers, and administrators.

*Conclusion*

This research study began with the question, “Can the efficacy of F&F reading instruction be observed in urban schools?” Based on the analysis of results from the causal-comparative study of F&F schools and non-F&F schools, the researcher states that for urban Christian schools in Philadelphia, no significant difference was observed in the achievement of students that received *Foundations & Frameworks* instruction and the achievement of students in schools in Philadelphia that used a commercially-produced basal reading series.

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## Appendix A

### The Development and Expansion of Foundations & Frameworks

*Foundations & Frameworks* (F&F) was developed at a large, well-established suburban Christian school in central Alabama following a study of the cognitive processes that stimulate learning, recommendations from historical and contemporary reading research, the instructional practices of successful reading teachers, and instructional design. Findings from this study were disseminated to faculty at the developing school through scheduled professional development sessions, classroom demonstrations and modeling, and individualized coaching by program developers, which included this researcher. Faculty provided feedback to aid in defining a structured reading program that could be presented to new faculty members at an intensive two-week summer professional development institute. Following this initial F&F summer institute, which was attended by nine new faculty members, professional development materials were created and published, including participant course books, a teacher handbook for instruction, and presentation slides with lecture notes. As teachers implemented F&F practices, support for the new reading program grew.

The program expanded as teachers and administrators from Christian and public schools observed F&F instruction at the developing school and attended the second summer institute as outside participants. Multiple F&F Basic Training institutes are now held each summer. Foundations & Frameworks Advanced Training, which was developed to certify F&F teachers from other schools to lead the Basic Training at their

school, is held each winter. *Frameworks & Frameworks* is currently used in 80 schools in 21 states and in Canada, Uganda, and Kazakhstan.

## Appendix B

### Linking F&F Instruction to Recommended Practices

*Foundations & Frameworks* (F&F) connects recommended practices for reading comprehension and vocabulary instruction to a transferable framework and affords opportunity for school context to influence instruction with a socio-cultural perspective. *Foundations & Frameworks* is transferred through a ten-day professional development program that leads teachers through the cognitive-based learning structure they will use in their classrooms and through published materials that provide direction for the development of F&F instructional units. The purpose of this ten-day program is to equip teachers with the knowledge, skill, and capacity to provide F&F instruction in their classrooms (Washburn & Blackmon, 2006).

#### *Foundations & Frameworks Comprehension Instruction*

*Large blocks of time.* F&F reading instruction should take priority in an elementary school day (Washburn & Blackmon, 2003). Daily schedules should be adjusted to provide 90 minutes for reading instruction, providing at least 75 uninterrupted minutes. It is recommended that reading be scheduled first in the day.

*Explicit and systematic direct instruction and modeling.* F&F reading instruction is guided by a progressive scope and sequence of comprehension skills (Washburn & Blackmon, 2003). The content of comprehension instruction comprises the processes of thinking that enable reading comprehension. These thinking processes are taught through questions readers ask themselves while reading. For example, the following questions form the initial basis for thinking about sequence of events in a story:

1. What happened first?
2. What happened next?

To teach these questions, the teacher displays the list of questions associated with the targeted comprehension skill and thinks aloud about the questions while reading aloud an illustrated book. The selected book is appropriate for modeling the thinking processes and for engaging the particular student population.

*Multiple instructional strategies. Frameworks & Frameworks* reading instruction includes opportunities for cooperative learning when students work in groups to (a) synthesize their understanding of vocabulary terms and (b) develop a project that synthesizes and displays student thinking. Working cooperatively on the project affords opportunity for focused peer interaction as students review (a) elements of the comprehension skill, (b) the significance of the skill in relationship to assigned literature, (c) connections of the skill to story events or plot, and (d) the author's intended message (Washburn & Blackmon, 2003).

Collaborative discussion also occurs in small groups that meet daily with the teacher. These small group discussions are teacher-guided, but student-dominated, and are characterized by reciprocity among group members, including the teacher (Washburn & Blackmon, 2003). Flexible grouping is another component of F&F instruction (Washburn & Blackmon, 2003). Small reading groups are refreshed every three weeks with new literature and varied participants. Students are assigned to these small groups based on student literature choice and teacher knowledge of student interests and abilities. Alternative small groups may be temporarily assembled to address the needs of

students who struggle with a particular concept or who need to expand their understanding. Finally, cooperative groups of students representing each literature group may be formed for special assignments or for vocabulary work. Small-group situations enable teachers to know each student well in order to tailor instruction, form relationships, and communicate meaningfully with parents.

*Questioning, problem-solving, and summarizing techniques.* Questioning, problem-solving, and summarizing are three comprehension skills included in the F&F scope and sequence of instruction (Washburn & Blackmon, 2006). The processes of thinking required to develop these skills become increasingly complex as students advance in grade level.

*Graphic and semantic organizers.* Graphic and semantic organizers in F&F are called visual tools (Washburn & Blackmon, 2003). Their purpose is to display student thinking associated with each comprehension skill in a non-linear way. The processes of thinking that are guided by questions related to specific comprehension skills are also guided by the development of an associated visual tool while reading. Visual tools are used to engage student minds and encourage student response to reading.

*Culturally relevant and connected to life experiences.* Each F&F instructional unit begins with an experience, or reference point, that is related to the pattern of thinking required to develop a reading comprehension skill (Washburn & Blackmon, 2006). The reference point aids in forming meaningful connections between new information and prior knowledge and experiences. This reference point, determined by the teacher who is planning F&F instruction, should be appropriate for the particular student population in a given classroom. The reference point common to urban school students may be different

than the reference point for students in suburban or rural schools. For example, in establishing the pattern of thinking for sequence of events, a teacher in an urban school might ask students to recall the sequenced process of using public transportation to travel to school each day; a teacher in a suburban school might ask students to recall the sequence associated with carpooling to school each day. Additionally, teachers ask students, “Where else do we see this in our lives? Why is this important?” These questions provide an opportunity for students to respond with their own personal experiences related to the comprehension skill being introduced.

Another culturally relevant connection can be formed through the literature that is selected for teacher modeling and student assignments. The literature plays a key role in the assignments and in the small-group conversation, which provide opportunities to consider interpersonal and intrapersonal questions about the characters in the book as well as the students. Daily assignments also include “My Link,” “Author Chat,” and “To Think On” opportunities for students to implement in connecting personal experience with the author or a story element. For example, in “Author Chat,” a student might pose a question to the author that could lead to a small-group discussion enhanced by the perspectives of the group or a letter to the author. This establishes the actuality of a person behind the words on the page. If the author has a culturally relevant connection to the urban school students, it serves as an example of cultural achievement and a model for the students.

*Multiple learning styles and modalities.* The instructional flow of F&F encompasses social, analytical, practical, and reflective learning styles (Washburn & Blackmon, 2003). Every student participates in all aspects of instruction associated with

each learning style. For example, all students engage in discussion and problem-solving with peers during daily small groups and in the development of synthesis projects.

Analysis is employed as students ask themselves questions, process their thoughts, and create an appropriate visual tool during reading. Practical learners benefit from the non-linear display of thinking that provides direction for group discussion and personal writing and from the connections that are made between prior knowledge and new information. Reflection plays a role in every F&F learning activity as students process new understandings and prepare to connect them to varied contexts.

Visual, auditory, and kinesthetic learning modalities are also included in the F&F instructional flow, with every student using each modality during the learning process (Washburn & Blackmon, 2003). The visual learning modality is employed when visual tools are used to display individual and collective thoughts and when the teacher develops a display during the lecture which serves as a model for the thinking process associated with a comprehension skill. The auditory learning modality is stimulated as teachers share their thinking aloud while they read and model the thinking processes associated with a comprehension skill, as students participate in small-group discussions, and as students develop the synthesis project at the end of each F&F comprehension skill unit. The kinesthetic learning modality is represented by the preparation of large-scale displays that represent the synthesis projects, the physical repositioning that occurs in small groups, and the individual development of visual tools.

*Rigor and high expectations.* In F&F instruction, assignments related to the comprehension skills, thinking processes, and visual tools are the same for every student in a grade level regardless of reading ability (Washburn & Blackmon, 2003).

Differentiation occurs through an appropriate choice of literature that matches student with text and in the provision of a rubric that describes the following levels of performance: Not Yet, Meets the Objective, Proficient, or Exemplary. Explicit and direct instruction is provided, along with instructional feedback, so that every student is challenged on a daily basis to meet the exemplary objective. For assessment purposes, grade level text is provided in order to assess student performance on grade level materials; however, for daily assignments, students are given text at the instructional level in order to develop reading ability and devote the “mind space” necessary for deep thought while reading, leading to comprehension.

*Meaningful feedback and interaction.* Formative assessment with instructional feedback plays an integral role in F&F instruction (Washburn & Blackmon, 2006). Rubrics provide a description of the standards that guide instruction, feedback, and assessment. Each student receives frequent feedback from the teacher through a structured process that engages the student in comparing his or her depth of thinking with the levels described on the rubric. In addition to receiving meaningful individual feedback, students interact with each other and the teacher in daily small-group discussions. These small-group discussions are guided by the teacher but are expanded by the students in a skill review including elaborative discussion that connects the comprehension skill with the text that each student has independently read prior to the group meeting. Meaningful feedback and interaction provide the foundation for appropriate assessment in F&F instruction.

*Appropriate Assessment.* Summative assessment in F&F takes place at the end of every three-week unit. However, formative assessment with instructive feedback is

essential during the learning process and occurs in some form on a daily basis (Washburn & Blackmon, 2006). There are four formative assessment opportunities, in addition to the daily opportunities for instructive feedback. The first opportunity, following the teacher's direct instruction and modeling of the comprehension skill, occurs when the teacher prompts each student to tell another student what was learned from the presentation. The teacher listens carefully as each pair restates the information that was presented. The next opportunity for formative assessment occurs when every student receives a short reading passage on which to apply the processing questions and visual tool that were explained, modeled, and reviewed. As students work independently, the teacher monitors and provides instructive feedback. Another formative assessment opportunity is a structured phase that takes place over two weeks in which students read and practice daily the comprehension process and associated visual tool, as described earlier in the section related to meaningful feedback and interaction. Finally, formative assessment occurs when students work in groups to synthesize and connect information related to the text, the comprehension skill, and the visual tool. This final formative assessment opportunity occurs before the three summative assessments of comprehension skill knowledge, vocabulary, and performance. The performance task is the most significant summative assessment piece. In this assessment, students demonstrate their ability to read a fresh grade-level text and apply the thinking processes and visual tool they have practiced for the previous two weeks. The rubric that has been used throughout the unit for formative assessment and instructive feedback is used to evaluate student performance on this final task.

*Foundations & Frameworks Vocabulary Instruction*

*Wide reading and word consciousness.* A student who receives F&F instruction for a school year will read a minimum of twelve instructional reading texts. The majority of F&F texts are fiction novels; however, the scope of instruction for each grade level also includes non-fiction topical texts and biographies or autobiographies. Four levels of literature are available at each grade level and students are matched to a text they can decode without frustration. In addition to instructional literature, students are required to read books that are independently chosen; and time is devoted during the school day to read student-chosen texts. Although F&F literature is primarily used as a tool through which to teach thinking or comprehension, an acute awareness of words and the significance they play in the comprehension process are promoted through the wide reading, the careful selection of vocabulary words from the instructional texts, the engaging assignments related to vocabulary, and the emphasis placed on full comprehension (Washburn & Blackmon, 2003).

*Connecting the new to the known as a bridge to understanding.* *Foundations & Frameworks* instruction includes the use of student-friendly definitions that are furnished by the teacher (Washburn & Blackmon, 2003). When a vocabulary word is introduced, it is presented in the context of the literature from which it was chosen. Students receive direct instruction in using context to suggest a word's meaning, and they learn to use dictionaries to find a suitable word or phrase that is helpful in determining a word's meaning. In addition, students receive a teacher-developed definition that can be linked to a culturally rich word or phrase that forms a bridge to understanding. The teacher also

uses the word in a sentence that reveals its meaning. This teacher-developed sentence provides an additional opportunity to link a cultural context to the meaning of a word.

*Cognitive engagement and processing of word meaning.* Cognitive engagement is the goal of every assignment in F&F instruction (Washburn & Blackmon, 2003). During vocabulary instruction, students are asked to compose a sentence that demonstrates the meaning of a new vocabulary word and to draw a picture that demonstrates a conceptual understanding of the new word. The independent vocabulary assignment may also include using a thesaurus to determine synonyms and antonyms, categorizing words in relation to other words, creating non-examples or analogies, developing bubble maps of related words and concepts, and forming word associations based on personal experience. For any assignment, a student must be able to explain his or her reasoning.

*Definitional and contextual information.* Definitional and contextual opportunities for relating an unknown word to known words or phrases are two elements of F&F vocabulary instruction (Washburn & Blackmon, 2003). Definitional opportunities traditionally involve a dictionary or thesaurus; however, F&F instruction fosters mental processing within these opportunities by promoting discussion about the nuance of word meaning and an author's choice to use a particular word rather than its synonym in a certain context. *Foundations & Frameworks* instruction also guides students in a structured method of analyzing context that can lead to a useful interpretation of a word's meaning. A contextual assignment could have students establish a personal connection between experience and the new word, stating why that connection was formed; or it could assign a context for word usage and ask students to write about the context using a combination of new vocabulary words.

*Multiple encounters.* In F&F instruction, students study one new word each day. Three or four words are chosen from each piece of literature that is used for a comprehension skill unit; therefore, the list of words chosen for an instructional unit is the same for the entire class. The carefully chosen words are words that students could encounter in many contexts and would use in speaking and writing (Washburn & Blackmon, 2003). For example, the word *scramble* may be a word commonly found in fourth grade texts, both fiction and nonfiction; however, it is not a word that is already known and used frequently by fourth grade students. Because it has potential to become a word regularly used by fourth grade students if they knew it well enough, this word would be an appropriate choice for an F&F vocabulary word in fourth grade. Students are challenged in small-group discussions to use vocabulary words from other texts as they discuss the book they are currently reading. Vocabulary words are displayed in the classroom for an extended time to encourage usage in speaking and writing, and they are written on index cards and stored in personal bags to use in a variety of activities designed to multiply word encounters.

*Context clues, morphology, and dictionary skills.* Each vocabulary word in F&F instruction is introduced in context (Washburn & Blackmon, 2003). First, the teacher introduces the word in the context of the piece of literature from which it was selected. Then the context is analyzed by considering the general message of the text, the sentence structure surrounding the word, and its part of speech. A limited understanding of the word may be derived through contextual analysis. Next, the root word is determined, affixes are discussed, and forms and derivatives of the word can be named. Finally, students work independently with the word using a dictionary and thesaurus for

additional information that leads them to develop a meaningful sentence and to sketch a picture that demonstrates a thorough understanding of the word. When students return to small group on the following day, the information about the word is reviewed and the word is set before the students as one that should be used increasingly in conversation in the small group and in writing.