**Reading Progress Data for Students With Disabilities**
**The North Carolina State Improvement Project**
**North Carolina Department of Public Instruction**
2008-2009

**Introduction**

The North Carolina State Improvement Project (NCSIP), an Office of Special Education Programs (OSEP) in the U.S. Department of Education, has collected reading progress data from 2002 through 2009. The general purpose of these efforts is to measure the progress of students with disabilities with severe reading difficulties who are receiving research-based instruction provided by the NCSIP II project. Other purposes for this report include (1) the types of data collected, (2) how these data are collected, (3) how these data are used to evaluate the effectiveness of the specialized instruction and (4) how these data can be used to improve the reading progress of students with disabilities.

**Research-Based Reading Instruction**

Early on, the NCSIP adopted the *Teaching Students with Persistent Reading Problems* staff reading instruction staff development program developed by Rebecca Felton and David Lillie in partnership with the Guilford County School System in North Carolina. Since the initiation of the NCSIP in 2000 the *Teaching Students with Persistent Reading Problems* staff development program has been revised updated and is now the *NCSIP II Foundation Training in Reading Instruction*.

The *NCSIP II Foundation Training in Reading Instruction Program* is designed to develop teachers' knowledge and skills that are needed to provide effective instruction for students with persistent reading difficulties. An extensive body of reading instruction research involving students with reading difficulties supports the instructional principles in the program. A summary of the supporting research, conducted at the beginning of the NCSIP can be found at <http://www.ncsip.org> in the Evidence Based Instruction section of the NCSIP II website.

A major resource for use in the identifying research-based instruction for use with students with disabilities and other struggling readers is the National Institute of Child Health and Human Development (2000) Report of the National Reading Panel. Teaching children to read: an evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups (NIH Publication No. 00-4754). Washington, DC: U.S. Government Printing Office.

The reading instruction provided by NCSIP II includes the following instructional content and procedures:

• Direct, explicit, systematic and sequential instruction
• Development of phonological awareness skills
• Development of decoding (word attack) skills
• Progression from the simplest to most difficult tasks

• Word structure instruction (e.g., phonics, syllables, patterns, etc.
• Development of encoding (spelling) skills
• Teaching irregular words for both reading and spelling
• Specific training in fluency
• Instruction in vocabulary and reading comprehension
• Instruction in syntax
• Integration with written language instruction
• Use of multi-sensory strategies
• Reduced size of instructional group

**Data Collection and Analysis Procedures**

The assessment content and procedures developed and implemented by the Accountability Services Division in the North Carolina Department of Public Instruction are used by the NCSIP project to measure student progress in reading. End-of- grade reading assessments are annually administered to all students statewide in the spring of each year. The assessment results are used by NCSIP II to compare the annual reading progress of three groups of students; (1) students with disabilities receiving NCSIP instruction, (2) students with disabilities statewide, and (3) all non-disabled students in the North Carolina schools.

Each of the NCSIP II reading instruction sites designate an Evaluation Coordinator to complete the data collection forms for the project using the data generated by the annual assessments. The NCSIP data collection forms can be found at <http://www.ncsip.org> in the Evaluation and Accountability section under *Evaluation Resources.*

The NCSIP initiated the data collection procedures measuring student progress in reading performance in the 2002-2003 school year. The NCSIP evaluation process is designed to measure the extent to which the project's goals and objectives are achieved. One of the major goals of the project is to improve reading skills for students with disabilities. Each year gains in the percentage of students demonstrating reading abilities at or above grade level (%AAGL) are used to compare the reading progress across the three groups of students participating in the evaluation. As mentioned above these groups are NCSIP students, all students with disabilities statewide, and all non-disabled students statewide. These comparisons were made using the 3$^{rd}$ grade through 8$^{th}$ grade composite reading performance of students. Data analyses are conducted using the SAS JMP program.

**Limitations of the NCSIP Evaluation Process**

The NCSIP evaluation system does not employ a controlled research design. Students are not randomly assigned to specific instructional treatment groups and the project does not control for differences in the three groups of students being compared. For example, many students with disabilities participating in the statewide assessment do not demonstrate serious reading difficulties. Students receiving reading instruction in NCSIP projects are selected to participate in the projects because they are seriously below grade level in reading skills. Also, the project assumes that each of the LEA reading sites participating in the evaluation accurately transfers the student progress data to the NCSIP data collection forms.

**Results**

In this section two types of data will be presented and briefly discussed.  These are (1) Data demonstrating the extent to which the project goal of improving basic skills performance for students with disabilities has been met and (2) data that can be used for making decisions to improve the effectiveness of the reading instruction interventions employed by the NCSIP project. The number of students included in each of the data analyses below may vary from one analysis to another analysis across the Tables below.  This is due to missing data in some of the spreadsheet columns reported by the local projects.

**Evidence To Support Reading Performance Improvement For Students With Disabilities**

As can be seen in Table 1 below students with disabilities receiving reading instruction in NCSIP reading instruction sites during 2008-2009 students demonstrated a larger percentage of reading gains in the percentage of students performing at or above grade level. These results represent a gain in reading of fifteen percentage points for NCSIP students.  Students with disabilities statewide and non-disabled students demonstrated reading gains of eleven and twelve percentage point gains.

The number of NCSIP students participating in this analysis (2344 in 2008 and 2344 in 2009) is very impressive and supports the reliability of these data and results.  The students were virtually matched from 2008 to 2009.  There is only a difference of six students from 2008 to 2009, virtually the same NCSIP students in each year.

Table 1
Comparison of Grade Level Reading Ability of Students Receiving Reading
Instruction in NC SIP projects, All Students with Disabilities in
North Carolina, and All Non-Disabled Students In North Carolina
2008-2009

| Group | N | % AAGL* 2008 | % AAGL* 2009 | Reading Gains |
|---|---|---|---|---|
| NCSIP | 2344 *** | 14 | 29 | 15 |
| All SWD | 86059** | 27 | 38 | 11 |
| All Non-Disabled Students | 586495** | 60 | 72 | 12 |

* Percent At or Above Grade Level     ** Number of students for 2009
*** Virtually the same students participating in instruction and assessments
in 2008-2009

The consistent higher percentage point gains of the NCSIP students performing at or above grade provides evidence that the research-based instruction provided by the NCSIP project is making a difference in the reading performance of students with disabilities and/or reading difficulties. These data support the conclusion that the NCSIP project is meeting the goal to improve the reading skills of students with disabilities.

**Reading Gains Across Student and Instructional Demographic Variables**

Another important use of data generated by the NCSIP project is to provide information to support modifications to improve the instructional procedures employed by the project. Below Tables 2 through 14 present the gains of students reading at or above grade level in reading ability of NCSIP students across several important demographic variables that may impact on student gains. The student variables addressed include type of disability, gender and ethnicity. Instructional variables addressed include grade level, instructional model, instructional group size, and instructional setting.

**Type of Disability and Reading Progress**

Table 2 presents the percentage of NCSIP II students performing at or above grade level across the categories of disability and demonstrating the percentage point gain in the percentage point gain in the percentage point increase from 2008 through 2009.

Table 2
NCSIP Student Gains in Reading By Disabilities
2008-2009

| Disability | N | %AAGL* 08 | %AAGL* 09 | Gain |
|---|---|---|---|---|
| BED | 62 | 11 | 29 | 18 |
| EMD | 310 | 10 | 21 | 11 |
| SLD | 1326 | 21 | 30 | 9 |
| OHI | 415 | 17 | 30 | 13 |
| Other | 177 | 19 | 32 | 13 |

* Percentage of students at or above grade level

Table 2 above presents data on the progress of students with disabilities for the 2008-2009 school year across five disability categories plus a category of "Other" areas of students that were provided NCSIP II reading instruction. As can be seen there was a range of gains from nine percentage points for students with Specific Learning Disabilities (SLD) to thirteen percentage points gains for students with Other Health Impairments (OHI). Also, there was a gain of thirteen percentage points for students with "Other" types of disabilities that did not fit into any of the specific categories addressed above.

**Gender and Reading Progress**

Table 3 below presents the reading progress of female and male students receiving NCSIP instruction in the 2008-2009 school year.

Table 3
Gains in Reading By Gender
2008-2009

| Gender | N | %AAGL* 2008 | %AAGL* 2009 | Gain |
|--------|------|-------------|-------------|------|
| Female | 782 | 12 | 28 | 16 |
| Male | 1552 | 14 | 29 | 15 |

* % At or Above Grade Level

As can be seen in Table 3 above the percentage of Female and Male students performing at or above grade level is very similar. Female students gained 16 percentage points and Male students gained 15 percentage points during the year. These gains compare very favorably to the gain of 11 percentage points made by all students with disabilities across North Carolina.

**Ethnicity and Reading Progress**

As shown in Table 4 below greater gains during the 2008-2009 were found for Multi-Racial and White students when compared to African American and Hispanic students. However, when comparing the NCSIP ethnic group gains, with the exception of Hispanics, the gains for the other three ethnic groups are at least twice the amount of the gain made by all students with disabilities in North Carolina.

Table 4
NCSIP Reading Gains By Ethnicity
2008-2009

| Ethnicity | N | %AAGL* 2008 | %AAGL 2009 | Gain |
|-----------|-----|-------------|------------|------|
| Asian | 12 | 8 | 25 | 17 |
| African American | 545 | 31 | 34 | 3 |
| Hispanic | 71 | 35 | 34 | -1 |
| Multi-Racial | 19 | 37 | 53 | 16 |
| White | 682 | 42 | 57 | 15 |

* It should be noted that the number of Asian, American Indian, and Other are less than ten and not reported.

**Grade Level and Reading Progress**

Gains in reading by grade level are presented in Table 5. As can be seen, third grade students gained 22 percentage points in the percentage of students performing at or above grade level. These results support the general belief that the earlier instruction is initiated the better the results. However, the high gain from 2008 to 2009 of 19 percentage points for 8th grade students supports the use of teachers that are trained to use direct instruction protocols with struggling

middle school students.  Moderate to good gains in the percentage of students at or above grade level were also demonstrated by 4th grade through the 6th grades students.

Table 5
NCSIP Student Reading Gains By Grade Level
2008-2009

| Grade Level | N** | %AAGL** 2008 | %AAGL** 2009 | Gain |
|---|---|---|---|---|
| 3rd Grade | 340 | 6 | 28 | 22 |
| 4th Grade | 694 | 16 | 31 | 15 |
| 5th Grade | 599 | 13 | 29 | 16 |
| 6th Grade | 282 | 18 | 31 | 13 |
| 7th Grade | 284 | 11 | 19 | 7 |
| 8th Grade | 139 | 21 | 40 | 19 |

* % of students At or Above Grade Level
**Virtually the same students were included in 2008 and 2009

**Instructional Model Used and Reading Progress**

Table 6 presents the gains made by students receiving reading instruction in one of four different model instruction protocols primarily used by NC SIP II. The table also reports data collected on students receiving instruction using an "Other" instructional model. Projects using the "Other" instructional model(s) did not identify the instructional models used.

Table 6
NCSIP Student Reading Gains By Instructional Model
2008-2009

| Reading Instruction Model | N** | %AAGL* 2008 | %AAGL* 2009 | Gain |
|---|---|---|---|---|
| Corrective Reading/ Reading Mastery | 3176 | 11 | 28 | 17 |
| Language! | 555 | 15 | 27 | 12 |
| Wilson Reading System | 261 | 20 | 38 | 18 |
| Hill Center | 33 | 3 | 27 | 24 |
| Other | 58 | 34 | 52 | 18 |

* % At or Above Grade Level    **Virtually the same students were included in 2008 and 2009

All four models reported are considered to be effective research-based reading instruction models for struggling students, particularly high-incidence students with disabilities.   As can be seen the Corrective Reading/ Reading Mastery model programs served the largest number of students followed by the Language! model reading program and the Wilson Reading System.

As can be seen in Table 6 students receiving the Hill Center instruction gained 24 percentage points.  Students receiving the Wilson Reading System or using an "Other" instructional protocol

gained 18 percentage points.  Projects conducting reading instruction using the Corrective Reading/Reading Mastery instructional protocol gained 17 percentage points.

**Instructional Group Size and Reading Progress**

Table 7 compares the percentage points gained by NCSIP students across instructional group size.  In general, there appears to be no clear trend in the relationship between group size and the percentage of students reading at or above grade level – up to twelve students.  The results indicate high gains in the percentage of students at or above grade level for small instructional groups of three and four.  Also there are relatively high gains for instructional groups of ten and eleven which are small groups of students when compared to class sizes of twenty or more.

Table 7
NCSIP Student Gains in Reading By Group Size
2008-2009

| Group Size | N** | %AAGL* 2008 | %AAGL* 2009 | Gain |
|---|---|---|---|---|
| 1 | 84 | 26 | 35 | 9 |
| 2 | 117 | 9 | 20 | 11 |
| 3 | 266 | 11 | 29 | 18 |
| 4 | 311 | 9 | 29 | 20 |
| 5 | 395 | 13 | 27 | 14 |
| 6 | 325 | 12 | 22 | 10 |
| 7 | 204 | 16 | 24 | 8 |
| 8 | 191 | 14 | 30 | 16 |
| 9 | 105 | 13 | 40 | 27 |
| 10 | 170 | 18 | 39 | 21 |
| 11 | 53 | 23 | 42 | 19 |
| 12 | 40 | 8 | 8 | 0 |

* % At or Above Grade Level  ** Virtually the same students receiving assessments in 2008 and 2009

**Instructional Setting and Reading Progress**

As can be seen in Table 8 below a large majority of students received reading instruction in Resource/Pull Out classrooms.  In addition students receiving reading instruction in a Resource/Pull Out setting or in a Regular Class/Sub-Group setting made the largest gains.  Students receiving reading instruction in a Regular Class/Whole Group system made no gains from 2008 to 2009.  Students placed in a Regular Class/Whole Group instructional setting, as a group, made little or no gains in reading instruction. Students placed in Self Contained classrooms demonstrated a low to moderate gain in the percentage of students performing at or above grade level from 2008- to 2009.

Table 8
NCSIP Student Reading Gains By Instructional Setting
2008-2009

| Instructional Setting | N** | %AAGL 2008* | %AAGL 2009* | Gain |
|---|---|---|---|---|
| Self Contained | 233 | 22 | 30 | 8 |
| Resource/Pull Out | 1764 | 11 | 28 | 17 |
| Regular Class/Sub-Group | 229 | 21 | 37 | 16 |
| Regular Class/Whole Group | 89 | 22 | 22 | 0 |

* % At or Above Grade Level   ** Virtually the same students
receiving assessments in 2008 and 2009

**Summary**

• NCSIP students made a reading gain of 15 percent of the students  at or above grade level from 2008 to 2009.   These results support the conclusion that research-based instruction provided by the NCSIP project is making a difference in the reading performance of students with disabilities.

• The progress of students with disabilities across five disability categories plus a category of "Other" areas of students that were provided NCSIP II reading instruction. There was a range of gains from a nine percentage point gain for students with Specific Learning Disabilities (SLD) to thirteen percentage points gains for students with Other Health Impairments (OHI).

• The percentage of Female and Male students performing at or above grade level was very similar.  Female students gained 16 percentage points of students at or above grade level and Male students gained 15 percentage points. These gains compare very favorably to the gain of 11 percentage points made by all students with disabilities across North Carolina.

• When comparing the NCSIP ethnic group gains thee are at least twice the amount of the gain made by all students with disabilities (SWD) in North Carolina.

• Gains in reading by grade level resulted with third grade NCSIP students gaining 22 percentage points of the students performing at or above grade level.  These results support the general belief that the earlier instruction is initiated the better the results.

• Students receiving the Hill Center instruction gained 24 percentage points.  Students receiving the Wilson Reading System or using an "Other" instructional protocol gained 18 percentage points.  Projects conducting reading instruction using the Corrective Reading/Reading Mastery instructional protocol gained 17 percentage points.

• In general, there appears to be no clear trend in the relationship between group size and the percentage of students reading at or above grade level – up to twelve students.  The results indicate high gains in the percentage of students at or above grade level for small instructional

groups of three and four.  Also there are relatively high gains for instructional groups of ten and eleven which are small groups of students when compared to class sizes of twenty or more.

• A large majority of students received reading instruction in Resource/Pull Out classrooms. Students receiving reading instruction in a Resource/Pull Out setting or in a Regular Class/Sub-Group setting made the largest gains.  Students receiving reading instruction in a Regular Class/Whole Group system made no gains from 2008 to 2009.  Students placed in a Regular Class/Whole Group instructional setting, as a group, made little or no gains in reading skills. Students placed in Self Contained classrooms demonstrated a low to moderate gain in the percentage of students performing at or above grade level from 2008- to 2009.