Impact of Instructional Assistance 1998-99: Accountability Report

Wake County Public School System
Department of Evaluation and Research
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IMPACT OF INSTRUCTIONAL ASSISTANCE 1998-99 ACCOUNTABILITY REPORT

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EXECUTIVE SUMMARY

Background

The Wake County Public School System (WCPSS) has had efforts in place to support low achieving students for many years. However, about 20% of our students do not score high enough to be considered "on grade level" on the End-Of-Grade (EOG) tests given across North Carolina in grades 3-8. WCPSS and the community have adopted the goal that 95% of our students will score on grade level in grades 3 and 8 by 2003.

Staff recognized that the 95% achievement goal could not be accomplished unless we tried new ways to help low achieving students and provided additional resources to schools. For the 1998-99 school year, previously funded efforts such as special education, Title I, English as a Second Language, and Student Support Teams continued, but approximately $5 million in additional funds (some grant and some local) were also allocated to schools to support low achieving students. This report focuses on whether the additional funds made a difference in the progress of low achieving students and what techniques seemed to make the most positive difference for students.

Results

Level of Support
The additional funds resulted in more low achieving students receiving help than in previous years, and higher levels of support for some students than they would have received with out the additional funds. Overall, 90% of the 12,100 low achieving students in grades 1-8 received some assistance, with 35% served *only* through new funds.

Overall Positive Impact
The extra allocations provided to schools in 1998-99 to support low achieving students had a small positive impact. The percentage of Levels I and II students able to reach grade level on the EOG (Levels III-IV) from spring 1998 to 1999 was slightly higher (38% in reading and 41% in math) than between spring 1997 and 1998 (36% in reading and 36% in math). WCPSS gains for Levels I-II students were rated as exemplary based on state ABC criteria. However, even greater growth will be necessary to reach the 95% achievement goal by 2003.

New Versus Continuing Sources of Help
Groups of students served through new, reallocated, or continuing sources of support all showed gains on classroom assessments and EOG. Those served through new or reallocated sources of funds showed greater gains as a group than those served through continuing sources or a combination of both.

Successful Practices Systemwide
Within the new approaches, elementary students tended to show the greatest growth when:
- New forms of help were provided outside of the school day (reading and math) or during and outside of the school day (math only).
- More general enrichment was provided at the early grades in reading.

At the middle school level, no statistical differences were found between the effectiveness of help provided during or outside the day. Tutoring was more effective at grades 7-8 in reading, and enrichment was more helpful in grade 8 mathematics.

The number of hours of help provided did not relate to the gains seen for students. This may be because many of the hours were provided during the day, a service model which replaces rather than adds to the number of hours of instruction and may result in a lack of continuity for students' instructional experience. Generally, use of technology to support interventions also did not show a significant impact. We did not collect data on the specific types of software used by school and therefore, we do not know if some software was effective.

Successful School Practices
The elementary and middle schools with the strongest gains tended to provide:
- ongoing assistance targeted to students' specific needs,
- reduced group size for the support sessions,
- help during and outside of the instructional day, and
- close links between instruction and assessment.

INTRODUCTION

Background

WCPSS made a special effort to find new ways and new funds to support students who needed additional assistance during the 1998-99 school year. Nearly $1 million in summer school funds were converted to allocations for each school. Later, after the community 95% achievement goal was set, $916,293 and 102 teacher and teacher assistant positions were allocated to those schools with the greatest concentration of low achieving students and needs through Equity for Challenged Schools funds. Evaluation and Research (E&R) and Curriculum and Instruction staff anticipated questions about how these changes impacted student achievement as soon as the summer school change was made, and therefore designed a form to collect information on who was helped and how during the 1998-99 school year.   The focus of this report will be to provide answers to two basic questions:

- Did the reallocated and new resource allocations result in greater gains in achievement for our low achieving students than we saw previously?
- Which type of interventions were most effective in improving student achievement?

Procedures

We provided scan forms to schools in the fall for all students considered to be low achieving as evidenced by EOG scores in Level 1 or 2 in reading or math, plus students who scored below set cut-offs in literacy in grades 1-2. The actual form used to collect information on instructional support provided is included as Attachment 1. (The web version of the report does not include the form; contact E&R for a copy if desired.) We asked schools to return this information in April; reminders were sent in May and June. While all schools returned forms, some forms for individual students were not returned, primarily because students changed schools or forms were lost during the year. Procedures have been changed for the 1999-2000 school year in an effort to reduce these problems.

To determine whether adding and reallocating funds resulted in greater gains for students, we reviewed systemwide data and conducted some new analyses in the following areas.

- First, systemwide trends for students scoring at each level.
- Second, the percent of Level I-II students able to move to grade level in a single year, for the last two cohorts of test takers.
- Third, a review of ABC analyses for students at each achievement level to determine whether gains met or exceeded state expectations.

To determine which sources and types of intervention were most effective in improving achievement, we conducted additional analyses.

- Descriptive analyses to determine how students were helped through the new, reallocated, and continuing sources of help (using the mainframe database for program service through Title I, ESL, and Special Education).
- Regression analysis, stepwise regression analysis and analysis of covariance to determine whether the new/reallocated funds resulted in greater achievement score gains than the continuing types of help traditionally used.
- Stepwise regression analyses and analysis of covariance to determine what aspects of the new/reallocated funds had the greatest impact on student growth based upon an increase in EOG scores.
- Logistic regression and generalized linear modeling to determine what aspects of the new/reallocated funds had the most impact on the percentage of level I and II students able to move to grade level.
- ABC regression analyses to determine which schools were most effective with the subgroups of students who must improve in order to meet the district achievement goal.

For grades 1-2, we examined growth using literacy assessment results, specifically students' reading level based on running records taken at the end of the year. For grade 1, we compared reading levels from the spring of kindergarten and 1st grade. For grade 2, we compared reading levels from the spring of grades 1 and 2. For grades 3-8, we used End-of-Grade (EOG) results in reading and math separately for the spring of 1998 and 1999 (except at grade 3 where fall and spring data were compared). Further detail on these analyses is included in the appropriate attachments at the end of this report.

All schools were also asked by the Associate Superintendent for Instructional Services to turn in more general descriptions of the type of approaches they used to meet the needs of their low achieving students. E&R compiled this information into charts, asked schools to verify information received, and followed up to secure a higher return rate. For the schools with the highest gains for particular subgroups of students, E&R conducted telephone interviews with the principals or their designee to determine what components, factors, or activities they considered critical to their success.

Cautions

Some cautions must be kept in mind as we interpret these findings.

- The pattern of results may change with the initiation of the Accelerated Learning Program (ALP) this year. For example, as schools provide more Special Education and Title I students with additional help outside rather than during the instructional day, this may help those programs' effectiveness as well.

- Ratings and scores from the grades 1 and 2 classroom assessments and the third grade pretest have lower statistical reliability than EOG scores. The classroom assessments are relatively new, and are more subjective in nature than standardized tests. Cut-offs defining "grade level" are also subject to change, because the instruments are in the early stages of implementation.

- In our systemwide analyses, approaches and practices cited as significantly better than others indicate what works best for the majority of students; the needs of individual students must always be considered. Students served through continuing programs, for example, may have additional needs which affect their rate of learning compared to other students scoring in Levels I and II. Specific schools also need to explore their patterns of results to see if they mirror system trends.

- Practices at schools with strong gains may also be present at other schools in whole or in part. The overall school climate, organization, and implementation are all critical in determining overall success.

IMPROVEMENT IN WCPSS ACHIEVEMENT OVERALL

## Movement from Levels I and II to Levels III and IV

Systemwide, 77-88% of WCPSS students in grades 3-8 score at Level III or IV on the statewide EOG tests in spring 1999 (E&R Pub. # 99.30). Thus, 12-23% scored at Level I or II in reading or math (considered below grade level). High rates of growth are therefore critical for our Levels I and II students to enable them not only to maintain, but to increase, their level scores.

- On a positive note, our system as a whole and also the group of students scoring at each level, if treated as schools, showed exemplary progress on the state's ABC formulas. In addition, growth for our Levels I and II students was even stronger than for our Levels III and IV students (see Attachment 3).
- However, projections based on past rates of improvement suggest that WCPSS will not meet the 95% achievement goal unless the percentage of students able to move from Levels I and II to Levels III and IV increases at a greater annual rate in the future (E&R Pub. # 99.32).

We compared the percentage of students who were able to move from scoring below grade level to at or above grade level between spring of 1997 and 1998 (before the additional funds were allocated) and the same data from the spring of 1998 and 1999 (with the additional funds).

- In general, the additional funds had a slight positive impact on student performance, with slightly higher percentages of students moving from below to above grade level at grades 3-8 between 1998 and 1999 (38% in reading and 41% in math) than between 1997 and 1998 (36% in both reading and math). (See graph on next page.)

- However, the 2% increase in reading and 5% increase in math improvement rates will not be sufficient to allow the system to reach the 95% achievement goal by 2003. While it is likely that it will take some students more than one year to reach Level III or IV, the percentage able to move up each year must increase to accomplish the goal.

Movement to Grade Level at Grades 3-8: EOG '98 to '99 Compared to '97 to '98
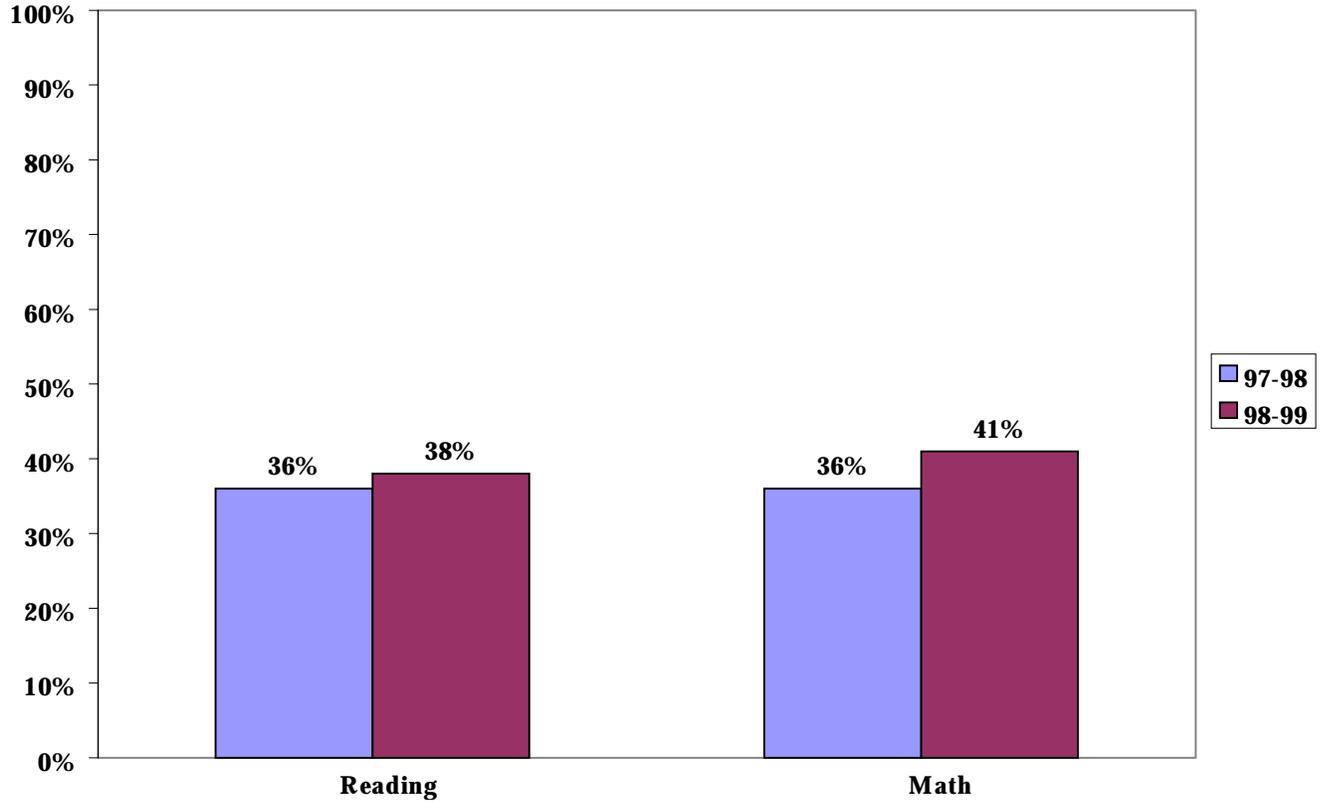
Growth in Reading at the Primary Grades

We also checked the progress made by students who scored low on classroom literacy assessments at the end of kindergarten and first grade since these grades will influence the accomplishment of the 95% goal at third grade. Trends are illustrated in the graph on the next page.

Movement to Grade Level Spring 1998 to 1999: K to 1 and 1 to 2

% on grade level Spg. 99

47%	36%	54%
All N = 2704	**Gr 1** N = 1086	**Gr 2** N = 1618
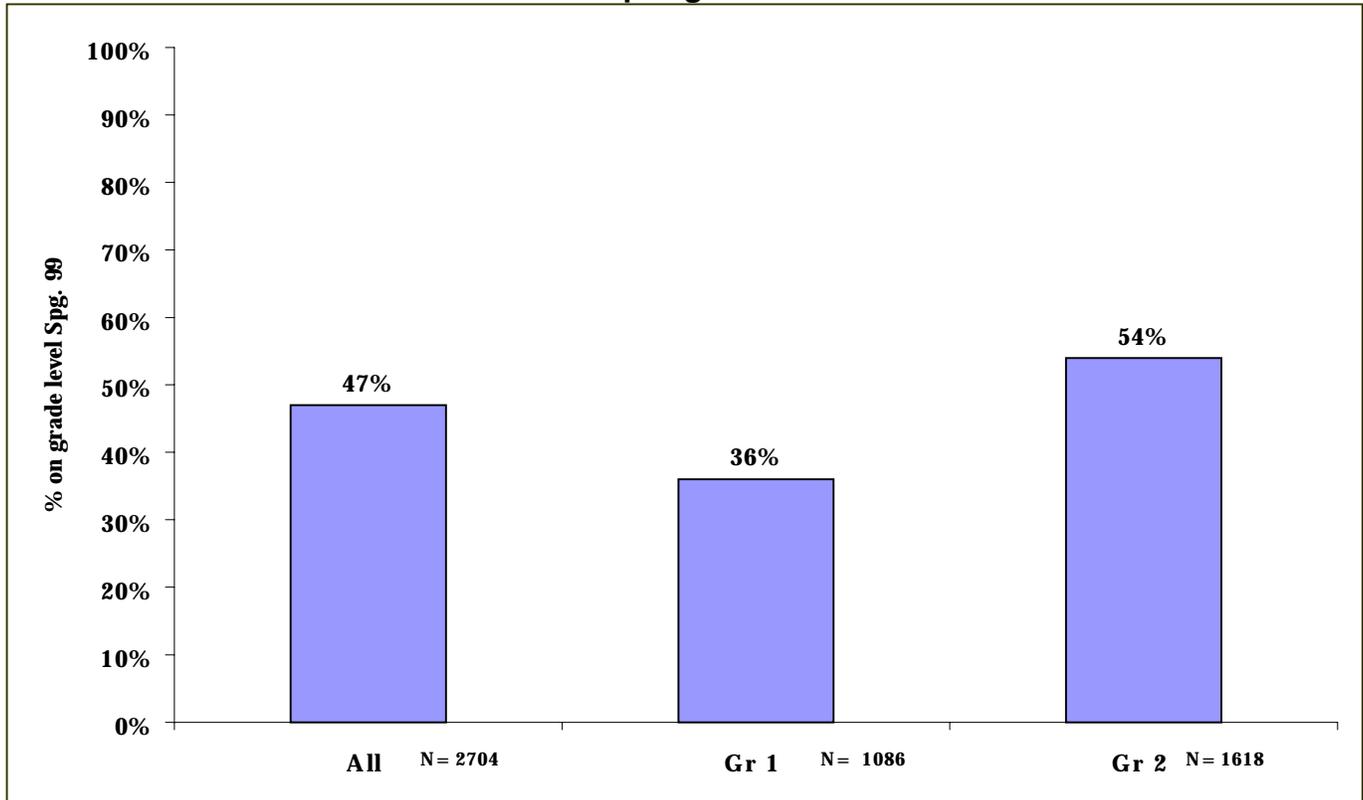
- Between spring 1998 and spring 1999, almost half (47%) of the students who fell below the grade level cutoffs set for the literacy assessments in kindergarten and first grade were able to show enough growth to be above the cutoffs set for grades 1 and 2. While this percentage is encouraging, even higher percentages of students will need to show this type of progress to reach the third grade system achievement goal.

- The 1997-98 school year was the first complete year of implementation for the classroom literacy assessment, so it was not possible to compare gains to those of a previous cohort of students.

This general look at achievement does not indicate what specifically made a difference for those students who showed the strongest gains. We therefore examined:

1) the type of assistance that seemed to make the most positive impact systemwide, and

2) the schools that showed the strongest growth for the subgroups with the greatest needs.

ASSISTANCE PROVIDED TO WCPSS LOW ACHIEVING STUDENTS IN 1998-99

Source of Funding

WCPSS has had efforts in place to support low achieving students for many years. The chart below shows the sources of funds we considered as "New or Redirected" versus "Continuing." Attachment 2 provides a listing of assistance funds provided to each school in 1998-99.

Source	Dates funds were available	Allocations ($ or positions)
New or Redirected Funds		
Instructional Support/Remediation (formerly summer school)	All year	$848,324
Equity for challenged schools	Some schools had all year, some Dec. - June	$916,293 +110 FTEs (+ 20 T +90 TA) Approximately T+TA:$2,001,640
State Pilot: Additional Teachers for Level I Students in Gr. 6	Feb.-June	7 FTEs Approximately $249,214
Magnet Grant	Sept.-June	$3,063,131 (for all students)
Continuing Funds		
Title I	All year	$4,376,266
English as a Second Language (ESL)	All year	59.6 T/22.5 TA
Special Education/504	All year	$43,049,686*
Language Arts Resource Teachers (LARTS)	All year	15 T
Student Support Team (SST)	All year	$423,955
New or Continuing		
Individual School Grants	Varied	Varied

Key: T = Teacher   TA = Teacher Assistant   FTE = Full time equivalent
*All students served through these funds are not tested on EOG

Overall, approximately $5 million was allocated beyond the traditional sources in 1998-99. This was estimated based on all new or redirected funds. For FTE allotments, we used an average teacher salary of $35,602 and an average TA salary of $14,440. For the magnet grant, which impacted selected campuses overall, we estimated that services to low achieving students represented one third of the total or $1,020,022. Some sources were not available to schools for the full year, so some new interventions did not start until mid-year.

Funding Sources of Instructional Assistance Provided (Unduplicated)

None (N=1,374)
11%

New Only
(N=4,214)
35%

Both
(N=4,080)
34%

Continuing Only
(N=2,432)
20%

N=12,100
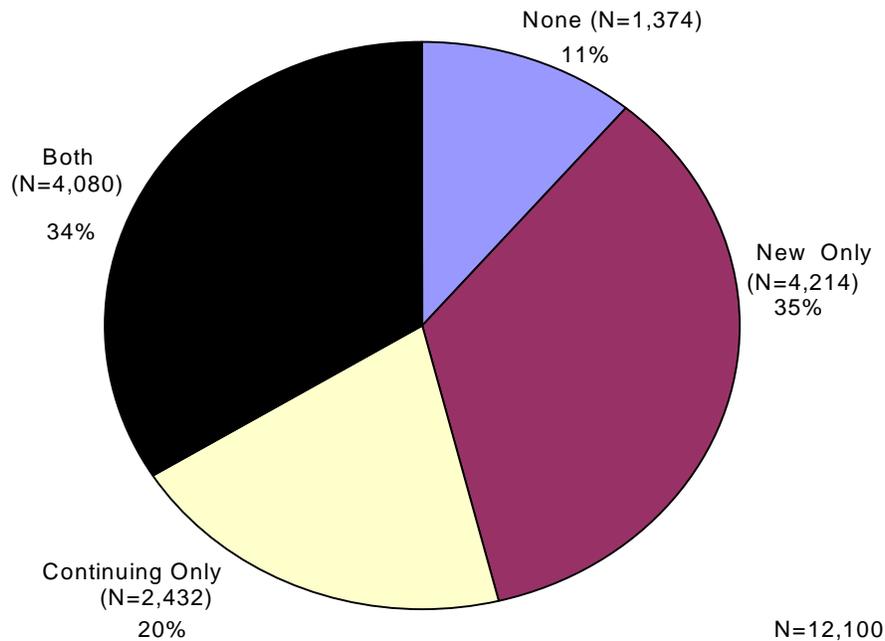
More low achieving students received assistance in 1998-99 than in previous years, because some funds were redirected and other funds were added. Nearly 90% of all low achieving students received some service.

❑ Continuing sources reached 55% of the low achievers overall, with only 20% served through continuing sources alone.
❑ New sources reached 69% of the low achievers, with 35% served only through new sources.

The amount of service received also increased for some students, with over 4,000 students (one third of the total) receiving help through both new and continuing programs.

It appears 11% of low achieving students received no service. Forms were not returned for half of these students and nothing was marked as received for the rest. It may be that some students who received no service actually did not need assistance by the beginning of the fall semester, because of outside summer help or an artificially low spring assessment score.

Types of Assistance

The graphs below illustrate the types of help received by students within the new and continuing sources of assistance. Students who received more than one type of help are included in more than one bar.

Types of Assistance to Low Achieving Students from Continuing Sources (Duplicated)*
Students = 12,100

*Duplicated Counts of Students: Total Percentage w ill exceed 100% because some students received more than one service.

Types of Assistance to Low Achieving Students from New Sources (Duplicated)*
Students = 12,100

*Duplicated Counts of Students: Total percentage w ill exceed 100% because some students received more than one service.

Within the continuing sources of help, special education (35%) was the most common type of assistance, followed by Title I (11%), English as a Second Language (ESL), Save Our Students (SOS), and Communities in Schools (CIS). Other types of assistance accounted for 10% of the services provided. Again, some students received more than one type of assistance.

❑ Special education served students both within and outside regular classrooms in a variety of subjects. Special education instruction often replaced instruction from the regular teacher in the subject area(s) of service. The instructional methods and amount of service received varied by students.

❑ Title I, a federally funded program, also served students both within and outside regular classrooms, with nearly all service in reading. Most service was to students in the primary grades, and service always supplemented the instruction of the regular classroom teacher in the subject. However, students often missed instruction in another subject to participate. The instructional methods used varied, although much of the help provided outside the classroom was in the form of individual or small group tutoring. Students generally received about 45 minutes of service per day four or five days a week.

Within the new sources of assistance, tutoring was the most common type of help (59%) followed by enrichment (33%). Some students received both types or another form of help.

❑ Tutoring was defined as working with students one-on-one or in small groups focusing on specific skills with which students were having difficulty.

❑ Enrichment was defined as an intervention which provides more general or accelerated instruction in students' areas of need.

If we consider tutoring, enrichment, Special Education, Title I, SOS or CIS, and other types of help as individual services, nearly half of the 12,000 students identified as low achieving in grades 1-8 received more than one type of service during the 1998-99 school year. Overall, 16% received three of more types of service, which could be particularly disruptive to the continuity of students' instructional days. It is important to remember, however, that some types of service may not have been provided at the same time of the school year (especially if students switched schools during the year).

Number of Services	Number of Students	Percentage of Students
0	1374	11.36
1	4807	39.83
2	3928	32.46
3	1671	13.81
4	290	2.40
5	30	.25

DIFFERENCES IN IMPROVEMENT BY SOURCE OF FUNDING

We first examined the impact of new sources of help versus continuing ones on students' growth in achievement. Students served through either new or continuing sources showed reasonable gains (see Attachment 4). Regression and analysis of covariance results, which statistically adjust for any difference in pretest levels, revealed that:

- Assistance provided through new/redirected funds tended to result in greater improvement for students than support from continuing sources. Generally, students served through both new and continuing funds also showed lower gains than those served by new sources alone. (See the grade 6 graph on the next page for a typical pattern in results.)

- Significant differences were found in student gains between new sources and Special Education and Title I. No significant differences were found between new sources and ESL, CIS, or SOS (although it should be noted that the number of students in these programs was considerably smaller, which makes statistical significance a less likely standard to be reached).
  - ➢ Compared to Title I, which focuses mainly on reading in WCPSS, students served through new sources showed greater gains in reading at grades 1, 2, and 3, but not grades 4 and 5.
  - ➢ Compared to Special Education, students served through new sources alone for reading showed greater growth at all grades from 1-8, except grade 6. Compared to students served through Special Education alone, math gains were greater for students served through new sources alone at grades 4 through 8 and through both Special Education plus new sources at grades 5 and 7.

- The one exception was that continuing sources of help were more effective for students who had been retained in grades 1 and 3 than new efforts.

**EOG Growth for Low Achievers Served through
New & Continuing Sources
Grade 6**
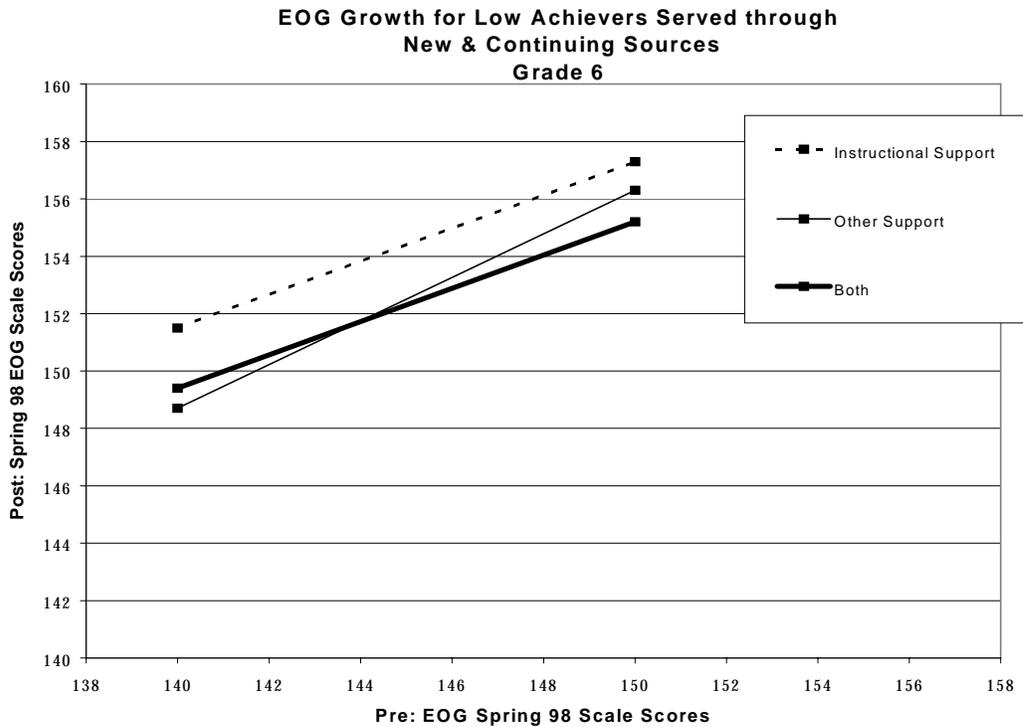
These findings appear to have implications for our continuing efforts, as well as our new efforts. This study was not designed to evaluate the effectiveness of Special Education and Title I per se, but does suggest that either something different about the students served or the way in which they are served may be impacting gains in a negative way. Those students in continuing programs, especially Special Education, may have additional factors affecting their rate of learning. However, the highly significant differences between the new approaches and continuing programs (such as Special Education and Title I), may also be due, at least in part, to the way in which Title I and Special Education are implemented.

While program configurations vary by child and school, most models for both programs in 1998-99 pulled the students from regular classes to receive the special service. In such a model instructional hours are replaced, not extended, and the continuity of children's instructional day may be lost. In addition, in the case of Special Education, reading or math instruction from the Special Education teachers takes the place of that from the regular teachers. While instruction may be more individualized, missing the instruction from the regular teacher may cause the child to fall further behind if expectations are lowered in the process and instructional hours are not increased. Coordination with the regular teacher is also sometimes difficult.

We encourage schools to examine the gains of students in programs such as Special Education and Title I and see if they met or exceeded gains of those served in other ways. If not, schools might consider whether the programs are set up in a way to optimize growth (e.g., avoiding disruptions to students' instructional day, truly providing additional instruction in the relevant subjects, and coordinating efforts with the regular teacher).

DIFFERENCES IN IMPROVEMENT <u>WITHIN</u> NEW OR REDIRECTED SOURCES OF FUNDING

Within the new approaches, we analyzed what worked best to try to determine why new approaches resulted in higher gains than our continuing efforts.

Type Of Approach

We explored whether tutoring, enrichment, or a combination of the two impacted the size of student gains between spring 1998 and spring, 1999.

- Tutoring was defined as working with students one-on-one or in small groups focusing on skills that a student is having difficulty with.
- Enrichment was defined as an education intervention, which provides more general or accelerated instruction in a student's area of need.

Reading

- *General enrichment tended to be most effective in the early grades, while tutoring was more helpful at the middle grades. Not all differences were statistically significant. (See Attachment 5.)*
  - •Enrichment was significantly more effective at grade 1.
  - •A combination of enrichment and tutoring was significantly more effective at grade 4.
  - •Tutoring was most effective at grades 7-8.

These results seem logical in that first graders, who are just beginning to acquire reading skills, may need more general assistance than students at the higher grades who may have more specific needs.

Math

- Enrichment, tutoring, or a combination of both approaches were equally effective for mathematics.
- The one exception was for grade 8, in which enrichment was most effective followed by tutoring. Combining both approaches was least effective.

Time of Day for Assistance

- Less than 20% of the students received all of their assistance from new sources outside of the regular instructional day (see figures on next page). "Outside" help most commonly occurred after school, with some limited help during intercessions (at year-round schools), on Saturdays, before school, or at lunch hour.
- Most students received help from new sources either only during the school day or during *and* outside the school day. (Recall that one third also received help from continuing programs during the day as well.) Help during and outside the instructional day was more common at the elementary level while help only during the day was more common at the middle school level. Middle schools often offered a specialized elective for students who scored in Level I or II.

Time of Day for Assistance

Elementary

Outside Only 18.4%

During and Outside 43.5%

During Only 39.1%

N=4,595

Middle

Outside Only 15.7%

During and Outside 37.2%

During Only 46.3%
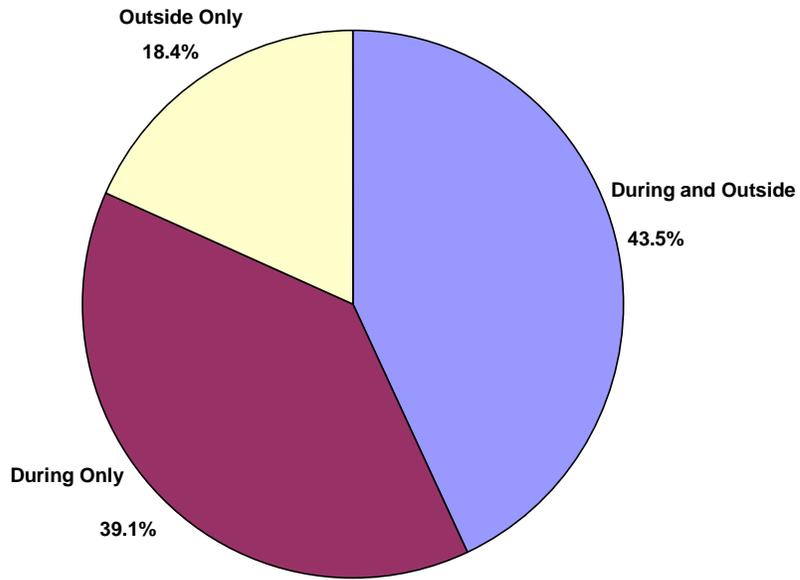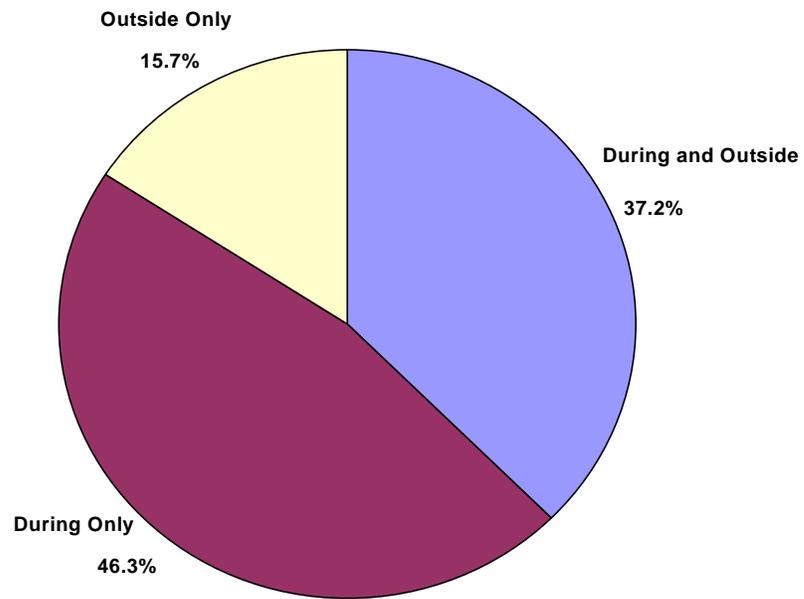
N=3,246

In reading, students were most likely to reach grade level when:

- Elementary school help was provided outside of the school day.
- Middle school help was provided anytime (no differences were found between during, outside, or both).

In math, students were most likely to reach grade level when new forms of help was provided:

- Elementary school help was provided outside the school day or both during and outside the school day.
- Middle school help was provided during or outside the school day.

Hours of Assistance to Students

Hours of Assistance Received by Students

Percentage by Hour Categories
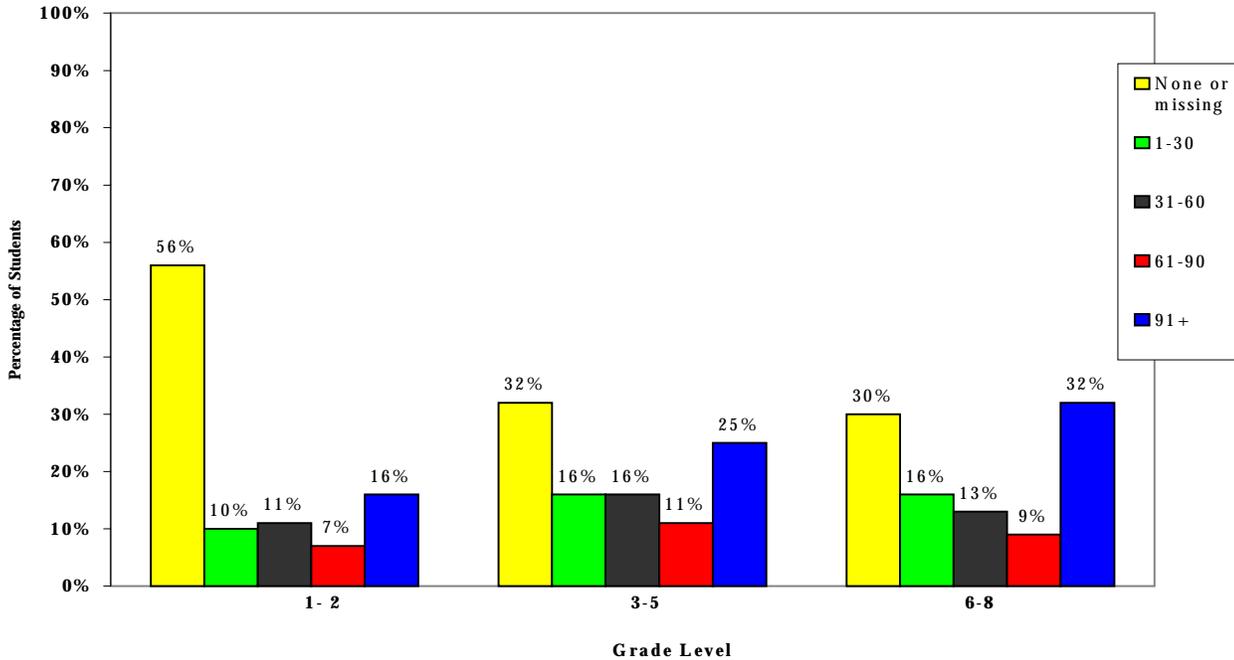
- In WCPSS, our elementary low achievers received a range of hours of assistance from 0 to over 100 from new sources. (Remember, over one third also received help from Title I, Special Education, or another continuing source.)
- Research is fairly clear that more total hours of instruction for students is likely to promote higher achievement.
- However, we found the hours of help provided through new sources in WCPSS did not significantly relate to gains at most grades. This may be because most help was provided during the school day, which replaced hours of instruction rather than adding to the total hours provided.
- Students in grades 1-2 were most likely to receive no hours of help; those in grades 6-8 were most likely to receive over 90 hours.
- Across grades, about one third of the students received 60 hours or more of assistance.

Use of Technology

Teachers reported technology of some kind (generally computers) supported their interventions about one third of the time (36%). Technology was used to support enrichment slightly more than tutoring (40% vs. 30%). Respondents were not asked how much or how technology was used.

- Generally, use of technology did not have a significant impact on reading or mathematics gains.

- This analysis was very general, and may mask the impact of particular approaches.

Percentage of Time

Technology was used with Instructional Support Efforts
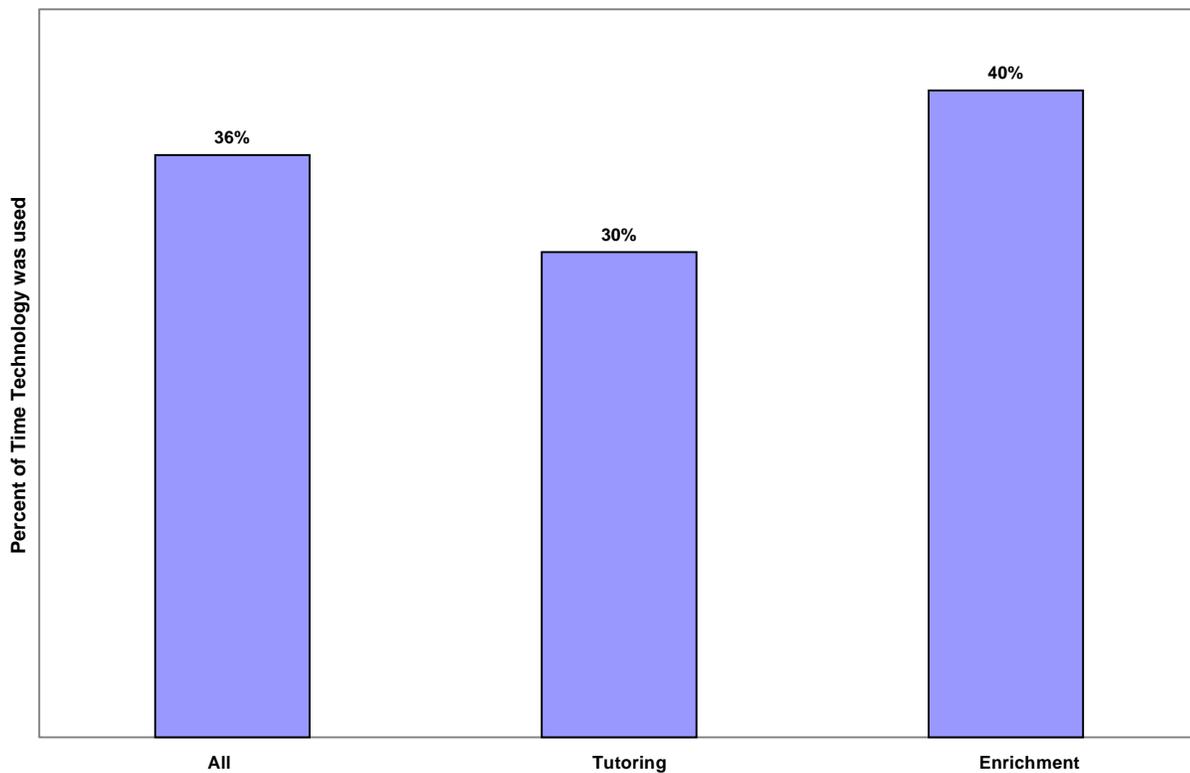
DIFFERENCES IN IMPROVEMENT BY SCHOOL

One question of interest was whether schools could be identified which did particularly well in raising the achievement of students which present the greatest challenge to WCPSS.

At grades 3-8, we identified the top five schools for growth based on ABC formulas for several high need subgroups between spring 1998 and 1999: Levels I and II students, Free and Reduced-Price Lunch students (low income), and Black males. While WCPSS shows exemplary growth for its Levels I and II students, we will have to show even stronger growth by reaching a larger percentage of low achieving students to reach the 95% achievement goal. WCPSS did not meet even *expected* growth as a system based on ABC formulas for Free and Reduced-Price Lunch students (low income), and Black males.

 Figure 1 identifies the top schools in each category among the elementary and middle schools based on exemplary growth. When determining top schools, we excluded any schools that had less than 10 students in a group.

One note of caution at the middle school level is that *none* of the schools showed exemplary growth for Free and Reduced-Price Lunch Students. Thus, although these schools showed the strongest growth, even they will need to continue to search for ways to optimize growth for this group.

At grades 1-2, we identified schools with the highest mean reading level growth and those which had the highest percentage of students moving from below to at or above grade level (see Figure 2). Results are based on teacher ratings of students' reading levels on end-of-year running records in which 94% reading accuracy and adequate retelling of the story are required. Results for K-1 and 1-2 were combined for more reliable sample sizes. Strong growth at the early grades will be necessary to reach the 95% goal at grade 3.

Common approaches found in the strongest elementary and middle schools are shown in Figure 3. Schools have received summaries of the efforts made at each of these schools in order to consider strategies which may work for them. Top schools at both the elementary and middle school levels provided:

• Ongoing targeted assistance

• Help outside and during the school day

• Links between assessment and instruction

• Reduced group size (1:1, small group, or 1:15).

FIGURE 1

TOP FIVE SCHOOLS FOR ABC GROWTH COMPOSITE FOR LI AND LII, FREE REDUCED- PRICED LUNCH, AND BLACK MALE STUDENTS

Elem. School		L I-II Students				Free Reduced Priced Lunch				Black Males		
	Rank	N	Exemplary Growth Composite	Strong Grades	Rank	N	Exemplary Growth Composite	Strong Grades	Rank	N	Exemplary Growth Composite	Strong Grades
Kingswood	1	40	15.40	R:5,3 M:5,4,3	1	21	7.70	R:5,3 M:5,4,3	1	11	12.90	R: 5,3 M: 5,4,3
Morrisville	2	45	15.30	R:3,5 M:3,5,4								
Wilburn	3	65	9.60	R:5,4,3 M:4,5,3								
Timber Drive	4	55	9.40	R:3,5 M:5,3,4	2	38	6.20	R:3,5 M:5,3,4				
North Ridge	5	85	9.10	R:5,3,4 M:4,5	3	71	5.20	R:3,4,5 M:4,5	3	36	5.10	R: 5,4,3 M: 4,5
Brassfield					4	54	2.00	R:3,4 M:4				
Douglas					5	58	1.90	R:4,3 M:4				
Adams									2	87	7.50	R: 4,5,6 M: 4,6,5
Olds									4	28	5.00	R: 3,4 M: 4
Vandora Springs									5	37	3.90	R: 5 M: 4,5

Middle Schools	Students	L I-II Students				Free Reduced Priced Lunch				Black Males		
	Rank	N	Exemplary Growth Composite	Strong Grades	Rank	N	Exemplary Growth Composite	Strong Grades	Rank	N	Exemplary Growth Composite	Strong Grades
Westlake	1	175	5.3	R:7,8 M:8,6,7	3	59	-0.3	R:7 M:8,6	4	71	0.1	R: 7 M: 8
Carroll	2	150	4.0	R:7,8,6 M:8,6	1	158	0.0	R:7,8,6	1	104	2.7	R: 7,8 M: 8,7
Durant Rd	3	195	3.8	R:7,8,6 M:6	1	134	0.0	R:7 M:8				
Davis Drive	4	110	3.6	R:6,8,7 M:6	5	70	-1.8	R:6	2	40	0.4	R: 6,7 M:
Apex	5	213	2.5	R:7,6 M:6		129	-2.4	R:7				
E. Garner					4	157	-1.6	R:7	5	127	0.0	R: 7 M:
Carnage									2	206	0.4	R: M:7

Note: "strong" grades are those above .0 on exemplary standard growth. Grades listed from highest to lowest above .0.

FIGURE 2

TOP FIVE SCHOOLS ON GRADES 1-2 LITERACY ASSESSMENT GROWTH

School Name	# Students Below Cutoff	Mean Growth in Instructional Reading Level		% Moving from Below to Above Grade Level Cutoffs	
		Rank	Mean Growth in Reading Level *	Rank	% Moving Up
Powell	65	1	14.2		
Holly Springs	60	2	13.5		
Hodge Road	61	3	13.4		
Davis Drive Elem.	27	4	13.2	1	85%
Wiley	19	5	13.1		
Green	27		11.2	2	71%
Jones Dairy	23		9.7	3	65%
Brassfield	37		10.4	4	65%
Wilburn	48		12.4	5	65%

* Student score was based on mid-point of ranges reported (e.g., reading level 1-2 was made equal to 1.5).

FIGURE 3 (2 pages)
Strong Schools: Keys to Success
17 Strongest Elementary Schools

This chart represents trends in responses to the open-ended question: "What was key to your success?" Elements listed were considered very important by at least 9 of the 17 elementary schools that showed the most exemplary growth with: Levels I and II students, Free or Reduced-Price Lunch students, and/or Black males. The number of schools listed should be considered approximate because school contacts expressed their opinions in different ways which influenced counts.

Elements	Comments	# Schools
Ongoing assistance targeted to students' specific needs	Help provided on an ongoing basis Flexible grouping. Differentiation in instruction through main curriculum materials or supplemental materials (e.g., SRA, leveled book rooms). Teaming (e.g., across classes within a grade). Assistance was most often provided through teachers or other professional staff but sometimes also through trained volunteers (e.g., parents) or other staff who were trained (e.g., TAs, all school staff, business volunteers).	17
Help outside and/or during school day	After school, intercessions, or Saturdays, before school Specific help during the day.	16 13
Understanding expectations of curriculum and assessments	Training or collaborative review and planning. Curriculum mapping and pacing guides were mentioned. Curriculum compacting; reduced redundancy in instruction. Mentioned strong focus on WCPSS Literacy program. Review of test results in general and specific ways (EOG plus classroom literacy and math profiles). Some reviewed released forms and/or used testlets. One really worked to standardize ratings across teachers on literacy and math assessments.	13
Tight links of instruction and assessment	Frequent assessment to inform instruction. Help with test-taking skills for targeted students or through use of test formats and/or vocabulary in classroom assessments for all students. Use of supplemental materials tied to NC curriculum which provided reteaching and assessments (e.g., Blast Off).	11
Teamwork, commitment, and follow-through by staff.	Importance of everyone working together—exact staff varied by school. Within grade and across grade collaboration. Collaboration and communication had to be ongoing. Administrators took active leadership in setting importance of improved achievement as a priority and helping to shape strategies. Some administrators also mentioned actively monitored implementation of initiatives or setting interim reporting dates to assure certain activities took place.	10
Reduced group size (all day or when individualized help was given).	Smaller classes or providing small group or 1:1 assistance. Additional staff or help was mentioned as critical specifically by 7 of the 18 schools. Some had extra "new" money; some did not (e.g., one traded 4-5 positions to increase number of teachers; one put neediest students in smaller classes).	10
High expectations for students	All students can learn with appropriate targeted instruction. Two mentioned never teaching below grade level.	9

FIGURE 3
Strong Schools: Keys to Success
7 Strongest Middle Schools

Elements listed were considered very important by at least 4 of the 7 middle schools.

Elements	Comments	# Schools
Ongoing basic skills assistance to targeted students	Help provided on an ongoing basis. Special electives, advisory time, extended team time Use of supplemental materials. Assistance was most often provided through teachers or other professional staff. Provided students with a variety of opportunities to get help. Some schools had contracts or other ways to commit students to work to help themselves.	7
Other ongoing support	Parent communication, parent commitments, support groups, study skills, organizational skills, social/emotional support.	4
Help outside and/or during school day	After school, Saturdays, before school, during lunch. Specific help during the day.	4 7
Linking instruction and assessment	Review of EOG results to determine needs. Early and frequent assessment to inform instruction.	7
Reduced group size (when individualized help was given) Extra staff devoted to remediation	Smaller classes for electives or other times when students were getting targeted help. Additional staff allowed more focus on helping low achieving students. Some schools had extra "new" money; some did not.	5

IMPLICATIONS

Our results support the rationale for ALP, especially at the elementary level. Results suggest it is helpful to provide extra assistance to students outside of the regular school day, especially for elementary students (coordinated with help during the day). They also suggest that the new efforts in 1998-99 may have been more successful than continuing programs because they were less disruptive to the students' regular instructional day.

General Implications, Grades 1-8

- Look to the practices of the strongest schools for ways to be even more effective.
    - Provide assistance that is ongoing during the year, with opportunities for help both during and outside the school day.
    - Make sure staff understand the expectations of assessments and the curriculum, and use frequent informal assessments to gauge student progress.
    - Reduce group size, at least for the time extra assistance is provided.
    - Use teachers to provide the assistance whenever feasible, and be sure others who help have training.
- Use technology only in ways that clearly support individual students' needs.
- Increase overall instructional time provided for these students; do not just replace regular hours of instruction with other hours of instruction.
- Provide assistance that is ongoing during the year.

Implications: Elementary Reading

- Provide as much supplemental help as possible outside of the school day.
- For help that is provided during the school day, minimize disruption of the instructional day and maximize coordination of efforts across teachers or other providers (perhaps through inclusion models or other methods that do not pull the students from class).
- Avoid providing low achievers with two forms of assistance beyond regular instruction during the school day (especially if both involve a large number of hours).
- Provide general enrichment at grade 1, with a gradual move towards enrichment combined with more specific tutoring at the higher grades.

Implications: Elementary Math

- Assist students outside of the school day or both during and outside of the school day.
- Use general enrichment or tutoring approaches that fit the students' particular needs.
- Increase hours of help provided outside the school day or look for other ways to improve effectiveness for a larger percentage of students.

Implications: Middle School Reading and Math

- Tutor students in reading, especially at grades 7 and 8. Tailor any electives needed to students' individual needs.
- Provide tutoring or enrichment in math at grades 6 and 7. At grade 8, enrichment may be more successful with the majority of students.
- To maintain current levels of progress, it appears help can be provided during or outside of the school day (e.g., through a tailored elective or ALP).
- To accelerate progress, especially for low income students, try an approach provided both during and outside the regular school day that is well coordinated, ongoing, and links instruction and assessment.

References

Evaluation and Research Department. (1999). Progress Toward the 95% Goal. (Evaluation and Research Report No. 99.32) Raleigh, NC: Wake County Public School System.

Dulaney, C. & Speas, C. (1999). 1998-99 ABCs Results (Evaluation and Research Report No. 00.02). Raleigh, NC: Wake County Public School System.

Attachments
1—Instructional Support Form
2—Funds for Instructional Assistance by School

3—Spring 1998 to Spring 1999 gains on End-of-Grade Testing in WCPSS.

4—Analysis of Covariance (ANCOVA): Continuing Only vs. New Only vs. Both

5—New Forms of Instructional Support – Impact on Reading and Math Score Gains

6—Extra Analyses for Title I and Special Education

INSTRUCTIONAL SUPPORT FORM

The web version of the report does not include this form; contact Evaluation & Research Department for a copy if desired.

Funds for Instructional Assistance in 1998-99 by School

School	New or Redirected Funds				Continuing Funds		
Elementary	Instructional Support	Equity (all year)	Challenged (Dec-June)	New Magnet	Title 1	ESL (all grades)	Other
Adams	$18,255				$188,320 (Gr 1-3)	1 TCHR	• Special Education (all schools)
Apex	$4,260						
Aversboro	$10,305		TAs=6 FTEs		$79,200 (Gr 1-3)		
Baileywick	$5,175					2 TCHR	• Language Arts Resource Teachers (15 elementary)
Baucom	$2,490						
Brassfield	$5,520					1 TCHR/1 TA	
Brentwood	$6,330		TAs=6 FTEs		$97,680 (Gr1-3)		
Briarcliff	$9,690				$99,000 (Gr 1-3)	1 TCHR	• State 6th grade Pilot positions (13 middle schools, 7 positions)
Brooks	$5,520				$70,840 (Gr 1-5)		
Bugg	$5,580						
Carver	$9,345	$83,298 (Gr 3-5)			$118,800 (Gr 2)	.4 TCHR/1 TA	
Cary	$14,535		TAs=6 FTEs		$136,840 (Gr 1-3)	1 TCHR/1 TA	• School grants
Combs	$4,080					2 TCHR	
Conn	$10,225			$246,082 (Gr1-5)	$82,720		• Collaboratives with community
Creech	$13,305	Ts=4 FTEs			$147,840 (Gr1-2, 4)		• Volunteers
Davis Drive	$3,165					2 TCHR/1 TA	
Douglas	$6,915	$83,298			$80,080 (Gr1-5)	1.5 TCHR	
Durant Road	$8,690						(applies to all pages)
Farmington	$11,070		TAs=6 FTEs		$110,440 (Gr 1-3)	2.4 TCHR/1 TA	
Fox Road	$13,095		TAs=6 FTEs (Gr 3-5)		$129,800 (Gr 1-3)		
Fuller	$6,480			$215,656 (Gr K-5)			

CBALC$=$571,923 funded two Curriculum Based Academic Learning Centers to serve three schools. Teachers also assisted at the three schools between intersessions.

NOTE: Funds provided to serve students showing below grade level performance or who had other special needs.

School	New or Redirected Funds				Continuing Funds		
Elementary	**Instructional Support**	**Equity (all year)**	**Challenged (Dec-June)**	**New Magnet**	**Title 1**	**ESL (all grades)**	**Other**
Fuquay	$15,135				$120,560 (Gr 2-5)		See page 1
Green	$13,790			CBALC$ (Gr K-5)			
Hilburn Drive	$5,025						
Hodge Road	$10,620	$23,000			$107,800 (Gr 1-3)	1.4 TCHR/.5 TA	
Holly Springs	$9,240		TAs=6 FTEs (Gr 3-5)		$103,400 (Gr 1-5)		
Hunter	$12,590						
Jeffreys Grove	$8,025				$87,120 (Gr K-2)	1 TCHR/1 TA	
Jones Dairy	$8,417						
Joyner	$6,930						
Kingswood	$3,415					.4 TCHR	
Knightdale	$9,750	$83,298			$93,280 (Gr 1-3)		
Lacy	$7,590		TAs=6 FTEs (Gr 2-4)		$81,840 (Gr 1-3)		
Lead Mine Road	$6,570					1.2 TCHR	
Leesville	$7,125						
Lincoln Heights	$10,155		TAs=6 FTEs		$67,760 (Gr. 1-2)		
Lockhart	$13,920	$83,298			$111,760 (Gr. 1-5)	1 TCHR/1 TA	
Lynn Road	$5,955						
Millbrook	$7,095		TAs=6 FTEs		$86,240 (Gr.1-3)		
Morrisville	$15,065						
North Ridge	$8,595		TAs=6 FTEs		$73,920 (Gr 1-2)	.8 TCHR	
Northwoods	$5,850					2 TCHR	
Oak Grove	$4,005						
Olds	$2,970						
Olive Chapel	$4,140					2 TCHR	
Penny Road	$9,660				$100,760 (Gr 2-5)		

School	New or Redirected Funds				Continuing Funds		
Elementary	**Instructional Support**	**Equity (all year)**	**Challenged (Dec-June)**	**New Magnet**	**Title 1**	**ESL (all grades)**	**Other**
Pleasant Union	$1,995						See page 1
Poe	$2,025				$55,000 (Gr 1)		
Powell	$2,730				$62,480 (Gr 1-2)		
Rand Road	$10,800		TAs=6 FTEs		$121,440 (Gr 1-2,4)		
Rolesville	$9,210				$83,600 (Gr 1-3)	1 TCHR/1 TA	
Root	$6,030				$60,720 (Gr 1-2)		
Smith	$7,785	$83,298			$113,960 (Gr 1-3)	1 TCHR/1 TA	
Stough	$5,790				$74,800 (Gr 1-5)	1 TCHR/ 1 TA	
Swift Creek	$11,505						
Timber Drive	$14,417			$CBALC (Gr K-5)			
Underwood	$4,905						
Vance	$8,430		TAs=6 FTEs		$106,480 (Gr1-3)	1 TCHR	
Vandora Springs	$10,680	Ts=2 FTEs			$113,080 (Gr 1-3)	1 TCHR/1 TA	
Wake Forest	$15,525		TAs=6 FTEs		$156,200 (Gr 1-3)		
Washington	$8,100				$88,880 (Gr 1-5)		
Weatherstone	$9,105					1 TCHR	
Wendell	$10,275	$83,298 (Gr 3-5)			$111,320 (Gr 1-3)		
West Lake	$13,215			$CBALC (Gr K-5)			
Wilburn	$11,085		TAs=6 FTEs (Gr 3-5)		$122,320 (Gr 1-2)	1 TCHR/1 TA	
Wiley	$6,495		TAs=6 FTEs		$63,360 (Gr 1)	2 TCHR	
Willow Springs	$12,075				$99,880 (Gr 1-5)	1.4 TCHR	
York	$6,240					.6 TCHR/1 TA	
Zebulon	$12,765	$83,298 (Gr 3-5)			$187,000 (Gr 1-3)		

Middle	Instructional Support	Equity (all year)	Challenged (Dec-June)	New Magnet	Title 1	ESL (all grades)	Special Ed.
Apex	$19,320					3 TCHR	See page 1
Carnage	$25,800			$457,184 (Gr 6-8)			
Carroll	$14,190		Ts=2 FTEs		$77,112 (Gr 6-8)		
Daniels	$20,910		Ts=2 FTEs			3.1 TCHR	
Davis Drive	$10,650					1 TCHR/1 TA	
East Garner	$18,570	$55,532					
East Millbrook	$18,795			$408,440 (Gr 6-8)			
East Wake	$22,440	$55,532			$105,570 (Gr 6-8)		
Fuquay-Varina	$24,225	$55,532					
North Garner	$29,625	$55,532			$116,586 (Gr 6-8)	1 TCHR/1 TA	
WF/Rolesville	$22,080		Ts=2 FTEs				
West Millbrook	$15,540					2 TCHR/2 TA	
Zebulon	$19,335	Ts=2 FTEs		$20,000	$$80,478 (Gr 6-8)		
High	Instructional Support	Equity (all year)	Challenged (Dec-June)	New Magnet	Title 1	ESL (all grades)	Special Ed.
Apex						2 TCHR	See page 1
Athens Drive						2 TCHR/1 TA	
Broughton						1.4 TCHR	
Cary						2 TCHR/1 TA	
East Wake		$55,531					
Fuquay-Varina		$55,532				1 TCHR/l TA	
Garner			Ts=2 FTEs			1 TCHR/1 TA	
Millbrook			Ts=2 FTEs			2 TCHR	
Sanderson						3 TCHR/1 TA	
WF/Rolesville			Ts=2 FTEs				
TOTAL		$916,293		$3,063,131	$4,376,266		

Spring 1998 to Spring 1999 Gains on End-of-Grade Testing in WCPSS

Reading

Grade 98/99	L1	L2	L3	L4	L1&2>3&4?
3	10.29	10.47	9.22	6.25	Yes
4	9.17	5.65	4.09	2.60	Yes
5	10.95	7.62	5.15	2.52	Yes
6	7.26	4.15	2.93	1.89	Yes
7	9.97	6.17	4.25	1.93	Yes
8	7.40	4.50	3.16	1.73	Yes

Math

Grade 98/99	L1	L2	L3	L4	L1&2>3&4?
3	13.77	11.77	12.48	12.88	No
4	16.33	12.30	9.94	7.72	Yes
5	13.45	10.41	8.21	6.44	Yes
6	10.58	7.71	7.06	7.33	Yes
7	11.85	8.75	7.32	6.25	Yes
8	8.01	5.22	4.22	4.89	Yes

Spring 1997 to Spring 1998 Gains

Reading

Grade 98/99	L1	L2	L3	L4	L1&2>3&4?	98-99>97-98?
3	9.74	9.93	8.44	5.72	Yes	1 2 3 4
4	9.53	6.39	5.67	4.02	Yes	
5	10.34	7.48	6.04	3.83	Yes	1 2
6	7.42	3.73	3.02	2.26	Yes	2
7	8.86	5.12	3.22	1.15	Yes	1 2 3 4
8	7.50	5.19	3.67	2.13	Yes	

Math

Grade 98/99	L1	L2	L3	L4	L1&2>3&4?	98-99>97-98?
3	13.33	11.53	12.31	12.81	No	1 2 3 4
4	15.25	10.49	8.63	7.16	Yes	1 2 3 4
5	13.55	9.70	7.62	6.64	Yes	2 3
6	10.91	7.94	6.80	6.77	Yes	3 4
7	11.38	8.92	7.23	5.83	Yes	1 3 4
8	9.00	6.35	5.65	4.53	Yes	4

Analysis of Covariance (ANCOVA): Continuing Only vs. New Only vs. Both

Q: Did help provided through new or continuing sources of funding result in different gains in achievement test scores? This analyzed the size of the gains seen by grade and subject.

Reading

Grade 98/99	Group	N	Unadjusted PreMean	Postmean	Significance Group	Pre*Group	New vs Cont.	New vs Both
1	New Only	248	1.6	12.8	0.0001	0.0120	0.0016	0.0001
	Cont. Only	192	1.2	10.8				
	Both	361	0.9	9.2				
2	New Only	281	10.4	22.7	0.0001	0.0001	0.0001	0.0001
	Cont. Only	379	8.4	18.8				
	Both	526	7.6	17.7				
3	New Only	176	128.6	138.1	0.0441	0.0341	0.0002	0.0001
	Cont. Only	114	128.3	134.6				
	Both	346	128.1	134.5				
4	New Only	517	135.0	141.6	0.0031	0.7289	0.0013	0.0350
	Cont. Only	151	133.8	139.1				
	Both	484	132.8	139.5				
5	New Only	527	139.0	147.8	0.0001	0.2854	0.0001	0.0021
	Cont. Only	115	137.2	144.5				
	Both	423	136.5	145.1				
6	New Only	447	143.5	148.8	0.0008	0.2888	0.1104	0.0002
	Cont. Only	97	141.1	146.1				
	Both	436	141.8	146.2				
7	New Only	484	146.9	154.1	0.0001	0.1935	0.0001	0.0007
	Cont. Only	127	142.9	149.4				
	Both	411	144.6	151.5				
8	New Only	427	149.8	155.7	0.0001	0.7443	0.0001	0.0001
	Cont. Only	118	147.6	152.0				
	Both	343	147.5	151.9				

Math

Grade 98/99	Group	N	Unadjusted PreMean	Postmean	Significance Group	Pre*Group	New vs Cont.	New vs Both
3	New Only	140	120.7	132.0	0.1120	0.1925	0.0502	0.0939
	Cont. Only	109	121.4	130.3				
	Both	279	120.5	130.4				
4	New Only	697	131.0	144.4	0.0001	0.5448	0.0001	0.0003
	Cont. Only	146	128.7	140.4				
	Both	496	129.0	141.9				
5	New Only	426	137.7	148.9	0.0090	0.2888	0.0029	0.1081
	Cont. Only	87	135.3	145.3				
	Both	329	135.3	146.6				
6	New Only	449	145.1	153.8	0.0015	0.4474	0.0046	0.0025
	Cont. Only	102	142.6	150.4				
	Both	419	143.7	151.7				
7	New Only	363	150.9	161.0	0.0001	0.3242	0.0001	0.0001
	Cont. Only	99	148.1	156.1				
	Both	332	149.0	157.6				
8	New Only	320	155.6	163.1	0.0001	0.6987	0.0001	0.0001
	Cont. Only	102	154.1	157.7				
	Both	295	153.9	158.7				

New Forms of Instructional Support - Impact on Math Score Gains

Q: Did methods used, time of day, hours provided, or technology use impact achievement gains seen for those receiving new forms of help?

Based on Stepwise Regression followed by Analysis of Covariance (ANCOVA)

Stepwise: Variables which entered the stepwise regression equation are included in the chart:

      1=Most Effective, 2=Next Effective, 3=Least Effective

The ANCOVA shows where the significance between groups lies:

      Shows significance: 1>>2=1, 1>>3=1 *, 2>>3=2* If no number, then not significant

Grade	Method	N	When	N	Hours	N	Technology	N
3					More 2			
					Less 1 *			
4			O3	226			Used 1	375
			D2	465			Not Used 2	808
			B1*	492				
5	E3	74	O1 *	165			Used 2	301
	T2	432	D3	244			Not Used 1	453
	B1	248	B2	345				
6	E3	112			More 2		Used 2	361
	T1	341			Less 1*		Not Used 1	497
	B2	405						
7							Used 2	257
							Not Used 1	438
8	E1 *	122			More 2			
	T2*	236			Less 1*			
	B3	254						

The number of students in each category of hours is given when time is significant

Hours median	Category	Grade 3		Grade 6		Grade 8	
		N	PCT	N	PCT	N	PCT
8	1 to 15	33	7.9	128	14.9	42	6.9
23	16 to 30	41	9.8	62	7.2	73	11.9
38	31 to 45	55	13.2	47	5.5	88	14.4
53	46 to 60	36	8.6	70	8.2	34	5.6
68	61 to 75	45	10.8	95	11.1	81	13.2
83	75 to 90	20	4.8	47	5.5	46	7.5
98	90 to 105	45	10.8	71	8.3	72	11.8
106	106+	142	34.1	338	39.4	176	28.8

New Forms of Instructional Support -- Impact Reading Score Gains

Based on Stepwise Regression followed by Analysis of Covariance (ANCOVA)

(blank squares mean nothing entered the model as significant after the pretest)

Stepwise: Variables which entered the stepwise regression equation are included in the chart:

      1=Most Effective, 2=Next Effective, 3=Least Effective

The ANCOVA shows where the significance between groups lies:

      Shows significance: 1>>2=1, 1>>3=1 *, 2>>3=2*

Grade	Method	N	When	N	Hours	N	Technology	N	Comments
1	E1**	63	O1 *	76					Interaction of Method & When
	T2	225	D3	236					For tutoring alone, During is as good
	B3	304	B2	280					as outside. Otherwise, outside is best.
2			O1 *	116	More 2				Interaction of When & Hours.
			D3	374	Less 1*				For outside only, more hours
			B2	290					is better. Otherwise, less is better.
3									No significant effects found.
4	E2	82	O1	197					Slight Method*Time interaction
	T3	667	D3	395					For tutoring alone, during is
	B1 *	243	B2	400					best. Otherwise, outside is best.
5	E3	83	O1	191	More 2				
	T2	556	D3	311	Less 1*				
	B1	304	B2	441					
6	E3	97							
	T2	353							
	B1	421							
7	E2	188							
	T1 *	408							
	B3	299							
8	E2	144							
	T1 *	275							
	B3	347							

Method: E=Enrichment T=Tutoring B=Both

When: O=Outside school day D=During B=Both

Technology: Yes or No on whether it was used at all

Hours: The number of students in each category of hours is listed below for the grades in which time was significant.

Hours Median	Category	Grade 2 N	PCT	Grade 5 N	PCT
8	1 to 15	55	7.1	99	10.5
23	16 to 30	108	13.8	152	16.1
38	31 to 45	109	14	130	13.8
53	46 to 60	69	8.8	81	8.6
68	61 to 75	168	21.5	139	14.7
83	75 to 90	42	5.4	70	7.4
98	90 to 105	31	4	96	10.2
106	106+	198	25.4	176	18.7

Results from Logistic Regression followed by Generalized Linear Modeling (Genmod)
Q: Which variables (within new approaches) affected students' ability <u>to reach grade level</u> (Levels III-IV)?

Reading

Grades	Method	Time	Hours	Technology
1-2	E1(.41)(.01) T2(.01) B3	O1(<.01)(<.01) D2(.29) B3	Generally, fewer is better	Positive impact when used
3-5	E1(.60)(.61) T2(.98) B3(ns)	O1(.051)(.039) D3 B2(.81)		
6-8	E2(.45) T1(.01)(<.01) B3	O1(.83)(.43) D2(.42) B3 (ns)	More better for level 1	

Math

Grades	Method	Time	Hours	Technology
3-5	E3 T2(.04) B1(.64)(.02) Logistic was ns if time is in model	O2(.03) D3 B1(.62)(<.01)		
6-8	E2(<.01) T1(.95)(<.01) B3	O2(.65) D1(.59)(.17) B3 (ns)		

Abbreviations: Method E=Enrichment Only; T=Tutoring Only; B=Both Tutoring and Enrichment
           Time O=Outside Only; D=During Only; B=Both Outside and During

The numbers following each letter gives the order of effectiveness (1=most effective, 3=least effective).
The numbers in parentheses are p-values.
After the most effective category are 2 p-values, 1 vs. 2 and 1 vs. 3.
After the 2nd most effective category is the p-value for 2 vs. 3.
ns p=values were not significant.

The reason for the note in Math grades 3-5 Method is that only time came into the model (after pretest) when a stepwise logistic regression was performed. However, when Method was tested separately (not controlling for anything but pretest) in GENMOD, the significance showed up.

The reason for the note in Reading grades 1-2 Method is that Method did not enter the Stepwise logistic regression model. However, when Method was tested separately (not controlling for anything but pretest) in GENMOD, the significance showed up.

EXTRA ANALYSIS FOR TITLE I: Reading Ancova

Grade	Group Does intervention source matter?	T1 only vs New only	T1 only vs T1+*	SpEd onlyvs T1+SpEd+/-**
1	.0001	.001 New+	**ns**	.04 SpEd+
2	.0001 also interaction. .0001	.0001 New+		
3	.02 also interaction .01	.001 New+		
4	.007			
5				

EXTRA ANALYSIS FOR SPECIAL EDUCATION: Math Ancova

Grade	Group	SpEd only vs New only	SpEd only vs SpEd +*	T1 only vs SpEd + T1 +/-**
3	.026			
4	.001	.0007 New+	.08ns	
5	.0002	<.0001 New+	.004SpEd+	
6	<.0001	.0003 New+		
7	.047.sig.interaction	<.0001 New+	.02 SpEd+	
8	<.0001	<.0001 New+	.07ns	

EXTRA ANALYSIS FOR SPECIAL EDUCATION: Reading Ancova

Grade	Group/Interaction	SpEd only vs New only	SpEd only vs SpEd +*	T1 only vs SpEd + T1 +/-**
1	.0001	.0019 New+	ns	ns
2	.0001	.0001 New+		.03 TI+
3	.01 (interaction 01 too)	.0017 New+		.08ns
4	.017ns.	.0055 New+		.07 (ns)
5	.0001	<.0001 New+	.0034 sp +higher	
6	.0091	.06ns		NA
7	<.0001	<.0001 New+	.0691 ns	
8	<.0001	.0016 New+	.6410 ns	

Note: Interaction shown only when significant

Blanks = not significant

ns = (not significant shown only if significance approaches .09 or less)

NA = not applicable

+ = significantly higher

*+ = means with some other service (not special education or Title I), usually new.

** +/- = means may or may not include some additional service other than Title I and Special Education.

The groups in the chart is the most effective.

IMPACT OF INSTRUCTIONAL ASSISTANCE 1998-99
ACCOUNTABILITY REPORT

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