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ABSTRACT

North Carolina is implementing a new accountability model, the ABCs (Accountability, Basics, and local Control) model. As a beginning examination of the implementation of this model, the Department of Public Instruction studied 11 high-poverty schools that demonstrated success in moving students up the state's Achievement Levels on the end-of-grade tests. An index was derived as the measure of improvement. In the schools selected, at least one cohort had demonstrated exemplary growth in both reading and mathematics over 1 year, or exemplary growth in one subject over 2 years. The chosen schools were visited by two-person observation teams who interviewed the principals and teachers who had contributed to the academic growth of students. The following characteristics were found in at least several of the schools studied: (1) high expectations are universal; (2) care and respect are clearly evident; (3) the environment is orderly and safe; (4) reform is teacher driven; (5) the principal leads and supports teamwork; (6) assessment is important and is used; (7) the school focuses on the state's Standard Course of Study; (8) instruction is both didactic and hands-on; (9) extra help and early intervention are provided; and (10) schools and educators are willing to experiment. Six appendixes list members of the evaluation team and present five tables of study data. (SLD)

Improving Schools Study:

May 1997

Another Way to Look at Raising Student Achievement

a preliminary study

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(A Preliminary Study)

May 1997

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Acknowledgments

This study was initiated and led by the Evaluation Section, Division of Accountability Services in the Department of Public Instruction. Dr. Carolyn Cobb directed the study and was the primary author of the report. Delores (Dee) Brewer developed the case study procedures and assisted in editing and revising the report. Other cross-functional team members joined Carolyn and Dee in the case study interviews and some wrote up individual school reports: Donna Cheek, Jackie Colbert, Bobbye Draughon, Jeane Joyner, Marilyn Palmer, Jan Williamson, Gongshu Zhang. Gongshu Zhang conducted all statistical analyses for the study. All team members (see Appendix A) provided valuable input into the decision-making process for the study and the final report drafts.

Improving Schools Study

Executive Summary

Purpose of Study

The new ABCs Accountability Model places new demands on individual schools to improve student performance. As the ABCs Accountability Model is implemented, the Evaluation Section will be looking at high performing schools and schools that show strong improvement over time, studying what they are doing to enhance student learning, and sharing these findings with other schools throughout the state. As a beginning study, eleven high poverty schools (above state average on free-reduced price lunch [FRL]) demonstrating success in moving students up the four Achievement Levels on the End-of-Grade (EOG) Tests were studied.

Using the Index

The Index was the measure of improvement used in this study. Increases on the Index indicate that students are moving up the four Achievement Levels, although that number alone does not indicate which levels are most impacted. See Appendix C for explanation.

School Selection

Above state-average FRL schools were selected where at least one cohort had demonstrated exemplary on both reading and mathematics over one year *or* exemplary growth in one subject area over a two-year period. The study did not attempt to find the best schools in the state or the highest growth schools. Evaluators attempted to find "typical" schools that were demonstrating fairly consistent growth and that might provide insight for other such schools.

Case Studies

Selected schools were visited by two-person teams for one day. Interviews were held with the principal and a group of teachers, chosen by the principal, who had contributed to the growth of students.

Characteristics of Improving Schools

The following characteristics were found in at least several schools, not necessarily every one. Categories represent major commonalities found among the schools. Some schools may have exhibited more of one trait than another, but - taken together - these characteristics seemed to be more typical than not.

- High expectations are universal. Staff in these schools really believed that *all* children can learn well and took it as their responsibility to see that they did. Expectations were communicated in a number of ways. There were no excuses for low performance.
- Care and respect are clearly evident. School staff care about their students; respect is highly valued. Staff were accessible.
- The environment is orderly and safe. This often cited "effective schools" correlate was clearly evident in these schools. Discipline problems were infrequently mentioned; and, when probed, teachers indicated that it was not a serious problem.

- Reform is teacher-driven. Reform happens in the classroom. Results of individual teachers were evident. The changes in one school had been initiated by teachers even lacking the administrative support evident in other schools.

- The principal leads, supports, and promotes teamwork. Most - but not all - schools reflected a strong school-based management philosophy. Most principals had a clear vision of how the school should operate. Teachers had input into how things were done, and principals tended to be actively engaged with students.

- Assessment is important and is used. All forms of assessment played an important role in these schools. Staff studied the EOG Tests results, used testlets and other diagnostic strategies, linked their classroom work to the test Achievement Levels, used test item banks, and used commercially and locally developed reading inventories. School staff paid attention to assessment results as feedback regarding student performance and instructional needs.

- Focus on the Standard Course of Study (SCS). Almost every school reported adhering to the SCS. Teachers made sure they understood the SCS goals in core subject areas. Staff development for some included alignment with the SCS, "unpacking" the SCS goals for better understanding, and the like.

- Instruction: Both didactic and hands-on. No single form of instruction emerged from these case studies. Many staff had moved to more manipulatives and hands-on instruction and more teaching in context/whole language. As a consequence they reported that students had much better understanding of concepts than previously. However, most schools still used phonics and skills instruction as part of their instruction. Many classrooms were very traditionally structured.

- Provide extra help and early intervention. Schools found ways to provide assistance at the first signs of trouble, as well as offering tutoring and other sources of extra instruction.

- Be willing to experiment. Staff in these schools were typically willing to work together to try new approaches. They were aware of research, but used it in combination with their experience and what they determined was best for their students. If their first attempt was unsuccessful, they were willing to try another strategy.

Do Whatever It Takes

The attitude and efforts of these schools can best be summarized as "doing whatever it takes." Many staff give 100+ percent effort and did not give up on students.

Next Steps

The Evaluation Section will continue to study ABCs Accountability Model results to identify high growth and high performing schools. Schools will be studied to help inform the schools improvement process and to improve student learning.

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Improving Schools Study: Another Way to Look at Raising Student Achievement

Introduction

Purpose of Study

The new School-Based Management and Improvement Program - the State Board of Education's ABCs Accountability Model - places even greater demands on individual schools to improve student performance continuously on state End-of-Grade (EOG) Tests, grades 3-8. While these tests are not the only way to measure successful learning, they are one indicator of student learning and a key ingredient for school accountability for elementary and middle schools. The Evaluation Section of the Department of Public Instruction was interested in using the state EOG Tests to *identify* schools that were already improving student performance on a steady basis, to *study* those schools, and to *share* the kinds of strategies used by these schools with other schools in the state.

The ABCs Accountability Model

In the ABCs Accountability Model, the A stands for Accountability, the B stands for Basics (reading and mathematics), and the C stands for local control. The ABCs Accountability Model in grades K-8 is based on cohort growth from year-to-year on the states EOG tests. The model is school-based; that is, the school is the unit evaluated for accountability purposes. ABCs Tools, software to run the formula calculating the expected and actual growth for each school, was developed and finalized in 1996. The amount of growth for each school is established based on a regression formula that considers the average state growth the year the tests were normed, as well as a regression factor. The actual growth among cohorts for the year is measured against the predicted (or expected) growth to determine if the school met expected growth. Schools that exceed expected growth and make exemplary growth (e.g., 110% of state average in the regression formula) will earn bonus money to be used as determined by teachers in the school. Schools that achieve 100% of expected growth earn special recognition and schools that do not achieve expected growth receive technical assistance. There are also other categories of recognition and sanctions.

Initial Stages in the Study

This Improving Schools Study began in late 1995, even before the ABCs Tools software for calculating cohort growth on the EOGs had been finalized. By using the initial formula and looking at grade-by-grade cohort growth, schools were identified that met the following criteria: (1) they had one or more grade-level cohort groups that had exceeded their expected growth on EOG Tests by 110% for two years in a row in one

subject area (e.g., reading or math)*or* (2) they had made 110% growth for one year on *both* reading and math. Due to the data base available at that time, grade 6 was omitted from these analyses.

The first strategies for examining these data collectively included traditional statistical procedures such as factor analysis and discriminant function analysis. A factor analysis was conducted using a number of school variables that were available in various state data bases (e.g., schools size and space variables, class size, percent free/reduced price lunch, percent minority, teacher characteristics). These procedures showed that there were clear factors related to cohort growth performance, the most heavily weighted factor (socio-economic status) being composed of socio-economic indicators for students (i.e., percent FRL, percent Title I, and percent minority). Initial findings indicated that - in general - schools that had a lower percentage of students eligible for free/reduced price lunch and a higher percentage of white students (both factors being related) had more cohort groups of students increasing achievement by 110%. The second most heavily weighted factor (School Space) dealt mostly with factors related to space and size (i.e., average age of building, total square feet, average square feet per student, number of buildings).

While these initial findings were not surprising given research on the relationship between achievement and socio-economic status (SES), it was not especially helpful in identifying schools and strategies to improve student achievement over time - especially given the relatively high number of poor and high-minority schools in North Carolina. In addition, most of these factors are not variables that the school can manipulate to raise achievement. Thus, the search for a strategy to identify schools successful *in spite of these SES and space variables* was continued.

An Agency-Wide Study Team

Improving student performance is the primary concern of the Department of Public Instruction (DPI). Most of the DPI Divisions and Sections have responsibilities in this area. Thus, an agency cross-functional team was formed for the "Improving Schools Study" as the search to identify evaluation strategies continued. Members of that team (see Appendix A) came from the Divisions of Accountability Services, School Improvement, Instructional Services and Information Management, and the Office of Education Reform. Team members met periodically to provide input and guide the direction of the study, to assist the Evaluation Section staff in making decisions about how to proceed, to review data and interview protocols, and to participate in the visits to the schools to conduct the case studies.

Focusing the Study

Given the limited usefulness of the earlier analyses, the Evaluation staff and cross-functional team focused on what was the most important issue in this study. We decided that *finding ways to help lower performing, high poverty schools to improve student achievement* was the most useful goal for this study. Thus, the focus became

schools that were above the state average on percentage of students eligible for free/reduced price lunch that also showed evidence of raising student achievement. The FRL percentage was used as a proxy for lower SES (higher poverty).

At about this stage in the study, the usefulness of the "Index" was discovered. The Index is a measure that was used to compare different cohort groups for two years on state high school End-of-Course Tests for 10 ABCs Accountability Model pilot sites during the 1995-96 school year. The Index turned out to be a succinct and helpful measure in determining cohort growth on the End-of-Grade tests as well, and also proved to be a useful program evaluation tool for schools. This measure was used to select schools for the Improving Schools case study schools .

The Index

What is the Index?

Technically, the Index is the *sum of the weighted number of students in the four achievement levels on the EOG tests.* The EOG tests have four Achievement Levels for each grade: Level IV (student is performing well above grade level); Level III (student is performing solidly at grade level); Level II (student is performing inconsistently at grade level, mastery is not yet attained); and Level I (student is performing well below grade level). It assigns a weight of "3" to Achievement Level IV, a weight of "2" to Achievement Level III, a weight of "1" to Achievement Level II, and a weight of "0" to Achievement Level I. Thus, schools get no credit for students in Achievement Level I. The weights for each level are multiplied by the percentage of students in that level, and the sum is divided by 3 (see Appendix B).

The Index ranges from 0-100. In an example scenario, if a grade level or school has a score of "0", that would mean that all students are in Achievement Level I. A score of 100 on the Index would mean that all students are in Achievement Level IV. A score of 50 would suggest that about half the students are in Levels I and II, and half are in Levels III and IV. However, the actual configuration of student scores could vary widely with any given Index score. Appendix C illustrates the Index continuum from 0 to 100 and Index scores for several sample student distributions across Achievement Levels. The **primary purpose of the Index** is to show the general location of students on Achievement Levels and **to show growth in the number of students from one Achievement Level to another**. Thus, when the Index score goes up, more students have moved to higher Achievement Levels. The Index does not indicate which Achievement Levels are involved, but does indicate if, overall, students are moving to higher Achievement Levels (or, conversely, to lower Achievement Levels). If the Index does not change from one year to the next, then - while Developmental Scale Scores on the EOG Tests may have increased - the distribution of students across. Achievement Levels had essentially remained unchanged.

Relationship of the Index to Other Measures

The Index is obviously related to, but does not exactly parallel, growth in the developmental scale scores (DSS) on the state's End-of-Grade (EOG) tests, grades 3-8.

While the DSS measures continuous growth, the Index only measures growth when movement is made from one Achievement Level to the next. The DSS may increase from one year to the next without a corresponding increase in the Index (i.e., higher percentage of students in higher Achievement Levels). On the other hand, if the Index increases, the DSS likely has increased. Correlation with the expected growth index for an entire school used in the ABCs Accountability Model is moderate (around .5 or .6 when we look at whether the expected growth is "made" or "not made"), but much higher for individual grade-level cohort growth expectations (.8 to .9). Thus, the Index may show movement of students up the Achievement Levels when the school-level ABCs Accountability Model will not show growth. Therefore, the Index provides additional information about student and school progress and is a quick reference to determine if the school is being successful in improving achievement for individual students and to what extent students are moving up the Achievement Levels. It is a more diagnostic measure than the ABCs Accountability Model of growth.

Implication of the Index

The importance of the Index lies in its ability to provide a quick look at the extent to which a school is moving increasing numbers of students from lower into higher Achievement Levels on the EOG tests. While increases are expected in DSS from one year to the next, it is not readily apparent the extent to which these gains are being made by lower performing students moving into higher achievement levels. Certainly the ABCs exemplary growth is one measure of "more-than-expected" growth. The addition of the Index as an analysis and evaluation tool provides a clearer picture of the student distribution across Achievement Levels for a given cohort group. Increases in the Index clearly show that more students are performing at higher Achievement Levels. And the higher the Index score, the greater the percentage of students in the upper Achievement Levels. We will never reach our high standards for all students unless schools - especially poor and lower performing ones - demonstrate consistent Index increases each year.

Selecting Schools for the Study: Growth and the Index

"Improvement" in achievement was defined by "growth." Growth is defined as the amount of increase expected on EOG test scores using the formula developed for the state ABCs Accountability Model. Because the new ABCs Accountability Model uses 110% "growth" as the criterion for exceeding expected growth, this criterion was used as "above expected" growth for this study. First the lower SES schools in our original data base were reviewed to select the schools that had one cohort group that (a) had made 110% growth over *two years for one subject* or (b) had made 110% growth for *one year in both reading and mathematics.* Appendix D describes the eight definitions or criteria (A-H) of "above expected growth" used to identify improving schools. Each time a school met one of these eight criteria, a "YES" was indicated. With the calculations by grade level that had been completed earlier, schools with grades K-6 had a possible maximum of four "YES's," as did schools with grades 6-8. Schools with grades K-8 had a maximum of eight possible "YES's."

Where possible schools were selected that had met two (out of four) of these criteria. However, very few schools met two criteria, especially middle schools. Thus, one "YES" was used to select some schools, focusing on schools that would give more geographic and ethnic distribution. Finally, a couple of schools were included in the study that were nominated by cross-functional team members, based on their work with schools undergoing reform. One school, for example, had been working with the "Effective School" correlates for several years. Once a core group of schools was identified that had one or more "YES's," the Index was used to further study cohort growth for those schools across all grade levels. Ultimately eleven schools were selected that appeared to have reasonably consistent growth in Index scores across grade levels for more than one year and/or cohort group. The last column in Appendix E shows the number of "YES's" each school included in the study actually attained and the maximum number that could have been attained based on the number of grade levels in the school.

It is important to note that this study was not trying to identify the absolute best schools in the state, but rather typical high poverty schools that were showing good and steady growth across Achievement Levels. This is a preliminary study for further work in the future. Index scores were calculated for the total student population in each grade level, as well as for the predominant ethnic groups in the school. To check each selection, Achievement Level distribution was disaggregated by ethnic group and, indeed, more students tended to move to higher Achievement Levels for all subgroups for these schools. It is also important to note that the Index did not increase for every cohort group or for all ethnic groups every year. Indeed, some decreases were found for some years and/or ethnic groups. *Our interest was in schools that had a preponderance of increases and that tended to exceed Index growth for the state as a whole.*

What the Schools Looked Like

Eleven schools were selected for further case study. Time was not spent trying to find the highest Index growth in the state in selecting these schools. Rather, the focus was on identifying typical higher poverty improving schools. Essential school characteristics are found in Appendix E. With one exception, all schools exceeded the state average (about 50%) for the percent of students eligible for "free/reduced price lunch." The actual percentage ranged from 52.9% to 92.3%. Many of these schools also had a high percentage of minority students. While the state student population average is around 30% Black and 1.5% Native American, these schools (with one exception) ranged from 44.6% to 98% minority. The one exception was a mountain school with only 2.2% minority, a typical percent for that geographic region of the state. The most prominent minority group was black students; however, two of the schools had significant Native American populations.

The schools were mostly rural and suburban schools, with one school located in a large city. They were located in eastern, central, and western parts of the state. Seven were elementary schools consisting of grades PK, K-5, or K-6 (one of grades 3-5); two were middle schools (grades 6-8); and two were both elementary and middle schools (grades PK-8). Schools ranged in size from 178 to 805 students (both elementary schools). Grade configuration was not predictive of school size. However, it is

important to note that several smaller schools had only one or two teachers per grade; thus, teacher effects were clearly being measured.

Improving Schools' ABCs Accountability Model and Index Growth

Appendix F shows the status of schools using the ABCs growth formula. However, it must be emphasized that, because we used the state data base, these calculations were done without matching students from one year to the next and without eliminating students who were not in attendance for at least half the year. Also, the growth expectations include only reading and mathematics portions of the EOG tests, not writing. Nevertheless, these data show that schools that evidenced reasonably consistent Index growth for individual cohort groups had variable success as a whole school on the ABCs growth model. Six schools "met" expected growth for each year in this study; four met expected growth for two out of three years; and one met expected growth for only one out of three years. This last school was one school selected later in the process to fill out a particular ethnic representation and was not among the higher Index growth schools.

Results were more variable for "exemplary" growth (i.e., 110% growth). Only two schools showed exemplary growth for all three years. Four had exemplary growth for two out of three years. Two schools had exemplary growth for only one year, while three schools never met the exemplary growth standard.

Appendix G shows the amount of Index growth for the 11 schools and the state as a whole by total student body, white students, black students, and Native American students. Index growth (or loss) is shown for both reading and mathematics. Across both subjects, there are a total of 108 cohort growth comparisons between the 11 schools and the state (30 each for total, white, and black cohorts; and 18 for Native American cohorts). Of these 108 comparisons, the 11 schools exceeded the state average by more than one Index point on 68 (almost two-thirds of) comparisons. They were within one Index point on 14 comparisons and fell behind the state by more than one Index point on 26 comparisons. Mathematics seemed to have more lower growth comparisons than reading across all ethnic groups, but especially for black and Native American students. However, this may reflect the fact that many of these schools had an emphasis on reading. Also, negative comparisons were more plentiful in the 1995 and 1996 years for sixth and seventh grades. Thus, using the ABCs growth formula to look at individual cohort growth did identify schools that had generally higher Index growth than the state average for the majority of cohort groups.

Case Study Procedures

Two-person teams were formed for each of the eleven schools. An interview protocol was developed, and school systems and schools were contacted. The superintendent was contacted first to inform him/her that one or two schools in that particular district had been identified as consistently improving student achievement over time and to explain the purpose of the study. Given approval by the superintendent, the team then contacted the principal. Interest in participating was received from both the superintendent and the school principal, and visits were scheduled. Each visit ranged

from a half to a whole day. The principal was interviewed alone. Also, a group of 3-5 teachers was interviewed in a focus group format. The principal was asked to select these teachers from among those teachers the principal thought were contributing most to their improving scores. At one K-8 school, three separate groups of teachers were interviewed by grade-level groupings (e.g., primary, elementary, middle).

When the interviewers met with the principal, the results of the Index growth for each grade cohort across years was shared, along with the disaggregated data for each Achievement Level. Ways to use the Index to evaluate the school program, weaknesses in subject areas, or grade-level problems were shared.

The interviews per se were designed to pose only general questions, such as "Why do you think your school has been successful in improving student achievement?" Probes were used to follow-up unclear comments or to ask about specific areas not addressed by open-ended prompts. The intent was not to direct the conversation but to let each school "tell its own story."

One member of each team wrote a school report on returning from the site visit. The team members met as a group after all visits had been completed to discuss their findings for the schools visited. The commonalties across schools, as well as any unique aspects, were noted. This report is a synthesis of those findings.

It is important to note that the findings are based on brief, one-day observations of the interviewers and the self-report comments of the principals and teachers involved. There was no opportunity to do intense validation of the comments. In a couple of instances, a case study team member noted that what school staff said did not seem to be corroborated by their brief class and/or school observations, but that was the exception rather than the rule. However, we did not have time to visit classrooms over time, and these results must be considered with the understanding that they are based on the limited visits. *Still, the commonalties found across schools were so striking that they should not be dismissed. These schools reported some very similar philosophies, points of view, and strategies.*

What Did We Find?

Index Growth Highest at Elementary Grades

Appendix G shows the aggregated amount of Index growth by grade level for all 11 schools compared to the average state Index growth. Index gains are also disaggregated for black, white, and Native Americans students. The greatest amount of growth is evident at the elementary grades (3-5). In fact, grade 4 had the overall highest amount of growth, followed by grade 5, across three different cohort groups especially for black and white students. Native Americans followed this pattern in grade 4, but results were more varied for grade 5. These gains were not as true for the state as a whole, although grades 4 and 5 tended to have higher statewide gains in mathematics than other cohort groups and subjects. Where negative Index changes (declines) were found, they tend to be attributed primarily to one school.

Several sizable gains at some middle grades were found for selected cohort groups compared to statewide data. For example, black students at the 8th grade in both 1995 and 1996 made higher gains than white students in both reading and mathematics. However, when larger losses on the Index were found, they were typically found for black or Native American students. Gains for Native American students were the least consistent across grade levels. There were some declines in the Index scores at several middle grades (6-8) levels for certain cohort groups. This finding is consistent with other statewide data indicating less growth at the middle grades on reading and mathematics EOG tests.

Characteristics Found in These Schools

The characteristics presented here were found in at least several of the schools, not necessarily every one. These categories represent major commonalties found among the schools. Different schools might have illustrated more of one characteristic than another, and different strategies might have been used across schools to illustrate the same characteristic or concept. On the whole, however, these characteristics seemed to be more typical than not. Finally, while the observations are sorted into discrete categories, it should be noted that the characteristics noted cut across these categories. For example, the placing of student work on the wall is addressed under safe and orderly environment, but it also relates to motivation and citing high-quality work.

High Expectations are Universal. This finding may not be surprising given the current emphasis on high standards and expectations for all students. However, the phrase "All children can learn." is easily said but less easily implemented, and often not truly believed when actual practices of schools are examined. However, in these case studies we found schools whose staffs really believed that their students could learn and learn well. They also believed that it was the staff's responsibility to ensure that they did so. The principals and teachers had very clear expectations of their students, from clearly posted classroom rules and class work to school-wide strategies.

High expectations were communicated in numerous ways. For example, one school with a high percentage of low income students had banners of various colleges posted in the school lobby; the message was that students here were college-bound. Mottoes and slogans in several schools conveyed their expectations, such as the following: "We care. We cooperate. We continue to learn;" and "Dream. Believe. Strive. Succeed." Uniforms worn in one school were designed to communicate that students are coming to school to work, just as their parents put on "work clothes." Another principal believes that "every child needs to develop a work ethic. No child is allowed to sit and do nothing."

In general, teachers in these schools do not let students do easy work to feel good about themselves. They want their students to feel good about themselves *because* they were competent and capable learners. Teachers provide consistency and predictability for students. They "stick to their guns with students" and do not back down.

No excuses were allowed for low performance. This came up in almost every interview. Teachers and principals noted that, while parental participation was often

not what they wished, the students' poor home environments were not an excuse for poor performance in their schools. One school noted that there was often little structure in their students' lives at home and that, therefore, the school had to provide it. Other schools did not even talk about family deficits or needs. They tried to enhance parent involvement but did not wait for it.

Care and Respect are Clearly Evident. Teachers and principals in these schools care about their students; respect is highly valued. They are committed to students and will do "whatever it takes." As noted above, they were also concerned about self-esteem of their students but not by letting students do easy work. One teacher whose classes showed consistent Index growth year-after-year had extremely high growth for one class in particular. She noted that when this class of students came to her, they would not try to do hard work. After a few weeks of frustration, she talked to them about why they would not try. They essentially told her that they had learned they could not do the work. She assured them that they were as capable as any of her students, and she would help them learn. After that conversation they began to work, with this class showing among the highest Index growth for one year found in this study. The interviewers noted that there was likely more than conversation that motivated these students. This teacher clearly cared about these students and implemented strategies that reflected that care. She was typical of many of the teachers interviewed.

Staff in these schools were accessible. Many of them arrive early, stay late, and work on Saturdays. "If kids know you care, they will do anything for you." *Students care in return*. Several interviewers noted that students in many of these schools seemed comfortable there. They liked their teachers and/or principal. One observer noted that students willingly approached one principal in a playful manner. The principal showed physical affection in an appropriate way. In a number of schools, students were interested in and took care of the school.

Respect was also evident among the school faculty. In one school, even an announcement began with "*Please* dismiss...." rather than the more demanding "Dismiss...."

Orderly and Safe Environment: This often cited characteristic of "effective schools" was also true of the schools in this study. High expectations were reflected in the physical school environment. The climate was safe and orderly; the age of the facility did not determine this climate. Many buildings were old, but the schools were clean. Many, but not all, of the schools had a lot of student work on the wall, especially drawing attention to high-quality work.

Discipline was infrequently mentioned spontaneously in the interviews. When probed about this issue, the staff often looked surprised and commented, "It isn't a problem." Expectations about behavior and rules typically were made clear at the beginning of the year, and consequences were clear and quickly implemented when necessary. The schools were characterized by structure. Students were seldom seen roaming the halls or out of place in any way. A number of teachers and principals noted that they tried to emphasize positive consequences for appropriate behavior, as well as negative consequences for inappropriate behavior.

In several schools, every adult had equal authority with the students. All adults, including janitorial and cafeteria staff, were involved in establishing a positive learning environment and in disciplining students. These staff members knew many students by name and dealt with any discipline problems on the spot. In one school, for example, the school janitor worked with the boys who were having a problem keeping their bathroom clean.

Reform is Teacher-Driven: It is trite, but true, that reform happens primarily in the classroom, in the interactions between teacher and student. In these small schools, it is easy to see the results of the work of individual teachers. Because some of these schools were small, the Index gains could be attributed clearly to one or two teachers at each grade level. These findings reinforce the understanding that the knowledge, skills, and care that teachers apply in the classroom *will* result in improved student learning.

One school stood out in the extent to which the changes were initiated by teachers. The relationship with a relatively new principal was not close; in fact, the teachers felt s/he was not at the school enough to know what was going on or to provide leadership. However, these teachers had been the driving force behind the changes at the school begun a few years earlier. They indicated that the school was not doing well, and they knew that something had to be done. Several teachers across grade levels decided to be the ones to do it. They sought training and staff development in new ways to teach, and shared what they learned with their colleagues. Several indicated that they had totally changed the way they had previously taught, moving to more "hands-on" approaches in math and combining whole language with phonics in reading .

The Principal Leads, Supports, and Promotes Teamwork: Most of the schools in this study reflected a school-based management philosophy. Styles of these principals varied widely. Some were truly collaborative and treated teachers as peers; others exercised more authority and control. Although it was apparent that some principals were truly more collaborative than others, teachers in most schools indicated that they had significant input into how things were done in their schools. Many of them determined how the budget was spent and had input into hiring decisions. The entire faculty and staff were a team. One observer commented, "They are on the same wave length."

The principal in these schools, for the most part, had a clear vision of how the school should operate and what expectations s/he had for the school. Some apologized for having such strong opinions about schooling or curriculum; but nevertheless, they conveyed their opinions to their staffs and the schools operated following these ideas. These administrators were constantly involved with the daily operations of their schools. They used terms like "I inspect what I expect," "I use management by walking around," and "I am a very hands-on principal."

One principal noted that, as a high school teacher, he had been the one responsible for what students learned and how they scored on the state End-of-Course Tests. He, therefore, knew that his teachers were the ones who would make the difference (or not) for their students. He believed that his job was to provide them complete involvement in

decisions about how money was spent and how instruction was delivered, and that it was his job to support them in any way possible. That attitude was more typical than not.

Many principals were actively engaged with the students. They held conferences with students who were not doing well, contacted parents to discuss student progress, and treated students with love and respect.

Assessment is Important and is Used: Assessment of all forms played an important role in these schools. Generally, these were child centered and data driven. They used data from a range of sources including data from their own diagnostic tests to commercial programs and the state-developed End-of-Grade (EOG) Tests. Teachers at these schools indicated that they took the state EOG Tests seriously. They did not seem to spend time arguing that these tests did not measure the "right" things. They knew the importance of these tests for accountability and made as much use of them as possible. In some cases, they may have over-interpreted test results, or used them in ways that stretched their reliability for individual students. Nevertheless, they paid attention to the results and used them to improve instruction. For example, they used the "Testlets" provided by the state to measure objectives from the NC Standard Course of Study that were used to develop the EOG Tests.

Many of the schools used commercial and locally developed Instructional Reading Inventories and computerized test item banks in addition to state-developed diagnostic materials (e.g., Testlets and Linking Documents). They assessed students along the way, not just at the end of the year or in the period just prior to the EOG Testing. Other strategies were found at individual schools. For example, one teacher "graded" her students work according to her understanding of the Achievement Levels as they are used on the EOG. This practice gave her students some idea of how their work stacked up to grade level performance on EOG Tests. Another school had an "Assessment Room," where results of EOG Tests and criterion-referenced tests were posted. One entire wall of this room was devoted to the management of a daily reading program and students' placement in and movement through the program.

Focus on the NC Standard Course of Study: The EOG Tests in reading/language arts and mathematics are based on the North Carolina Standard Course of Study (SCS). One finding that was observed in almost every school studied was a close adherence to the SCS. Teachers made sure they understood SCS goals in core subject areas. Some had worked with universities or other consultants to understand the goals and objectives more completely, especially in reading/language arts. Many of the schools had developed local curriculum alignment documents, pacing guides, and curriculum supplements.

However, staff were very clear that the SCS was the basis for all that they taught. In one school, everyone - including special teachers - focused on the state SCS. For example, when students were studying beginning sounds in their daily reading groups, the physical education teacher had soccer terms with those beginning sounds and worked with the students to learn them.

Instruction: Both Didactic and Hands-On: In these schools, there was not one single way of providing instruction. Staff sought training in how to teach the

curriculum objectives, leading many to move increasingly to manipulatives and hands-on instruction in mathematics. Almost every school indicated that it used phonics instruction. Many schools combined phonics with a whole-language approach, with schools differentially tipped in one direction or the other. However, most of these schools said they found that skills instruction was essential for many of their students. Structured approaches to reading were more typical than not.

Almost all teachers were excited about their increased use of manipulatives in teaching mathematics. They found that students now seemed to understand math, not just go through the calculations. Many teachers were trying to find ways to apply what students learned to real life situations. One primary teacher said: "My students can do things I never would have thought possible in earlier years. My expectations have totally changed (i.e., increased) for students."

These schools generally had lots of adult "assistants" - tutors, volunteers, extra part-time teachers. In several schools, every teacher in the school taught reading during a school-wide reading class period. Other schools developed creative schedules to allow for more time devoted to the core (reading and mathematics) subjects. Extra attention to reading was also provided through programs such as Pegasus, First Steps, LEAP, CRISS, and Reading Recovery. They used tutors before, during, and after school; on weekends; and in the summer. Computer-assisted reading and mathematics programs were used, especially Accelerated Reader.

Use of technology was frequently evident in these schools. Most had accessible computer labs, and many had computers in the classrooms. In one school, the students started using computers in kindergarten to learn word processing skills. The teachers report that the quality of the student work is greater as students publish their work on the computer. The teachers see computers as "great levelers and enablers." Many students reportedly believe that they can compose documents better at the computer.

Provide Extra Help and Early Intervention: Most of these schools serve populations of potentially high risk students, yet failure is not acceptable to these schools. They found ways to provide assistance at the first signs of trouble, as well as offering tutoring and other sources of extra instruction. After-school tutoring, Saturday help sessions, volunteer tutors, and summer academic camps were just several of the ways cited by schools to help prevent students from falling too far behind.

Many of these schools pay special attention to students scoring at Achievement Levels 1 and 2 on the EOG Tests, with specific plans to intervene early and often. For example, one principal had conferences with parents and students who score at these Levels. During the conference, he reviewed the student's cumulative record and "laid out" the student's past performance in two columns: academic performance and attendance.

Be Willing to Experiment: "If at first you don't succeed...." Interviewers observed that many of these schools were willing to work together to try new approaches. If these approaches did not work, they tried something else. However, there was no reckless movement from one approach to another. The schools frequently were aware of the research in a given area. While they respected the research, they did not

follow it rigidly if knowledge of their students suggested something else. One example came from a PK-6 school principal about grade retention: "We retain some of our first graders if we feel that - for that student - it is the best thing. *I know the research!* However, sometimes we feel that this is the best strategy for a child."

Some of the strategies that they are experimenting with either at the individual teacher level, grade level, or whole-school level are inclusion, portfolio assessment, uniforms, schedule revisions to provide double reading periods and common planning time, and teachers staying with the same group of students over a two to three year period. They assess as a group whether or not the strategy is working. If, as a group, they do not see evidence that it is being successful, they "tweak" it until it is successful, or change strategies.

Do Whatever It Takes: The concern and efforts of staff in these 11 schools can best be summed up as "doing whatever it takes." If one strategy does not work, they try something else. Quotes heard in different schools include: "Do whatever it takes...," "Go all the way," "Don't back down...," "Stick to your guns." "No excuses...." Many staff give 100 percent effort, and do not define their work day by the school bell. In fact, some teachers expressed concern about their colleagues who do not share these goals, who leave when the bell rings at the end of the day, and who are not contributing to the growth of staff or of students.

Summary

Many of these 11 schools could be characterized as child-oriented, focused on individual student achievement, and data driven. They did not necessarily use individualized instruction but did show concern for individual student success. There was no one instructional strategy that cut across all schools. However, most of them did indicate they had moved to more manipulatives in mathematics and used a combination of phonics with teaching reading in context and whole language.

The expectation that all students would learn well was especially common. They focused on the NC Standard Course of Study, and used assessment results to evaluate student success and instructional strategies. Many schools were willing to try approaches based on student needs; but if these strategies did not work, they were willing to try again. Concern for students extends into the personal realm, including frequent calls to parents, meetings with parents at school, and home visits. Staff work with social services or other public agencies to secure needed services for their students. Teachers seek continued staff development and new ways to teach. They look to the research, and then combine that with their own experience and judgment. They are reluctant to ever give up on students. They know that they have a long way to go and do not have all the answers; but most teachers clearly enjoy being where they are--trying to help students reach excellent levels of learning.

Next Steps

In spite of the positive characteristics and results found in this study, most of these schools are still low performing. Where schools did not show some of these characteristics, interviewers could not help but wonder what would happen if the schools worked more deliberately to incorporate them. Clearly, they have made progress but still have a long way to go, as do many schools in the state.

As the ABCs Accountability Model completes its first year for Grade 3 through 8 in 1996-97, the Evaluation Section will continue to look for high growth *and* high performing schools, especially higher poverty schools. The need to find models for raising student achievement is important to the goal of helping all of our students reach high standards of learning.

APPENDICES

Appendix A

Members of the Improving Schools Cross-Functional Team

Name	Area Represented
Delores Brewer	Evaluation Section, Division of Accountability Services
Donna Cheek	Staff Development Section, Division of School Improvement
Carolyn Cobb	Evaluation Section, Division of Accountability Services
Jackie Colbert	Staff Development Section, Division of School Improvement
Martha Downing	Areas of Exceptionality Section, Exceptional Children's Division
Bobbye Draughon	Staff Development Section, Division of School Improvement
Mike Frye	Language Arts and Social Studies Section, Division of Instructional Services
Jeane Joyner	Evaluation Section, Division of Accountability Services
Martha Kincheloe	Student Information Support Systems Section, Office of Information and Technology Services
Marilyn Palmer	Staff Development Section, Division of School Improvement
Angela Pope-Lett	Evaluation Section, Division of Accountability Services
Ellie Sanford	Testing Section, Division of Accountability Services
Susan Temple	Language Arts and Social Studies Section, Division of Instructional Services
Judy White	Office of Education Reform
Jan Williamson	Language Arts and Social Studies Section, Division of Instructional Services
Gongshu Zhang	Evaluation Section, Division of Accountability Services

Appendix B

Calculating the Index

Multiply Percent of Students in:	By:
Level IV	3
Level III	2
Level II	1

Add the three products together and divide by 3.

Example:

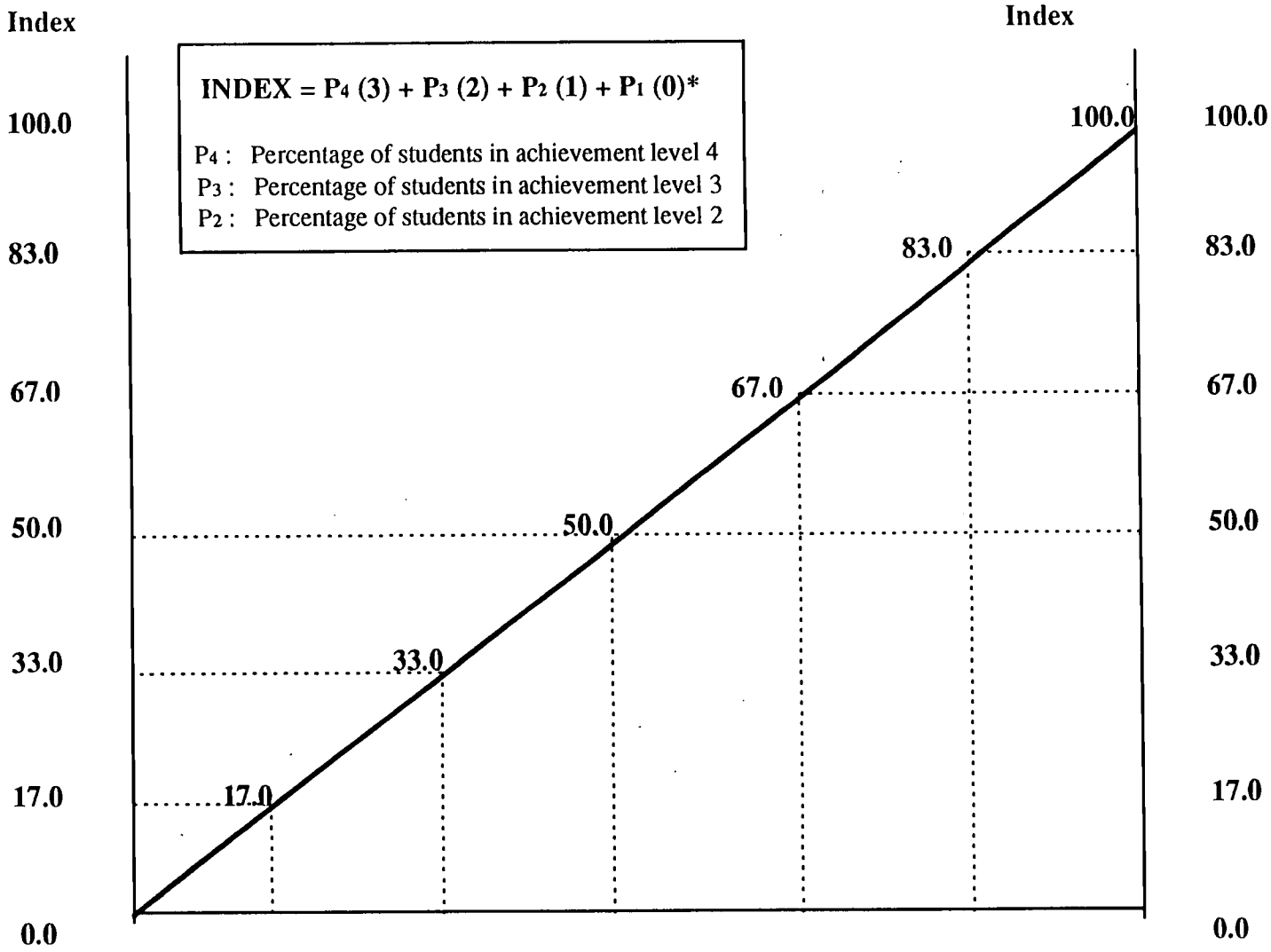
Suppose 6% of the students score in Level IV; 48% score in Level III; and 34% score in Level II. Then the EOG Index is 49.3, as shown below.

$$\begin{aligned} 6 \times 3 &= 18 \\ 48 \times 2 &= 96 \\ 34 \times 1 &= \underline{34} \end{aligned}$$

$$148/3 = 49.3$$

Appendix C

Relationship between INDEX and Percentage of Students in Four Achievement Levels



INDEX	0	17	33	50	67	83	100	
Level 1	100%	50%	33%	25%	0	0	0	
Level 2	0	50%	33%	25%	33%	0	0	Example 1
Level 3	0	0	33%	25%	33%	50%	0	
Level 4	0	0	0	25%	33%	50%	100%	

INDEX	0	17	33	50	67	83	100	
Level 1	100%	83%	0	0	0	17%	0	
Level 2	0	0	100%	50%	0	0	0	Example 2
Level 3	0	0	0	50%	100%	0	0	
Level 4	0	17%	0	0	0	83%	100%	

INDEX	0	17	33	50	67	83	100	
Level 1	100%	75%	50%	50%	0	0	0	
Level 2	0	0	0	0	50%	25%	0	Example 3
Level 3	0	25%	50%	0	0	0	0	
Level 4	0	0	0	50%	50%	75%	100%	

INDEX	0	17	33	50	67	83	100	
Level 1	100%	58.8%	38.8%	28.1%	5.9%	5.0%	0	
Level 2	0	31.2%	23.5%	12.5%	23.4%	7.5%	0	Example 4
Level 3	0	10.0%	37.7%	41.0%	34.5%	21.1%	0	
Level 4	0	0	0	18.4%	36.2%	66.4%	100%	

* P_4 = 100 (Number of students in level 4/Total student number)
P_3 = 100 (Number of students in level 3/Total student number)
P_2 = 100 (Number of students in level 2/Total student number)

Appendix D

Definition of "Improving"

Note: **"Growth"** - Refers to increase in scores for the same cohort of over time (e.g., grades 3 to 4; grades 3 to 4 to 5). 110% is based on calculations of the "expected growth" based on the ABCs formula. This means schools exceeded expected growth by 10%.

A: 110% growth in both Reading and Math from grades 3 to 4: 1993 to 94 and/or 1994 to 95.

B: 110% growth in both Reading and Math from grades 4 to 5: 1993 to 94 and/or 1994 to 95.

C: 110% growth in Math only from grades 3 to 4 to 5 from 1993-95 (e.g., two years in a row)

D: 110% growth in Reading only from grades 3 to 4 to 5 from 1993-95 (e.g., two years in a row)

E: 110% growth in Reading and Math from grades 6 to 7: 1993 to 94 and/or 1994 to 95.

F: 110% growth in Reading and Math from grades 7 to 8: 1993 to 94 and/or 1994 to 95.

G: 110% growth in Math only from grades 6 to 7 to 8 from 1993-95.

H: 110% growth in Reading only from grades 6 to 7 to 8 from 1993-95.

Appendix E

Characteristics of Case Study Schools

Schools	Grade Levels	School Size	Percent Free/ Reduced Lunch	Percent Minority	Number "YES's"/ Maximum "YES's" Possible
School A	PK-8	436	67.4	66.1	2/8
School B	6-8	700	73.9	78.2	1/4
School C	6-8	304	83.1	89.3	1/4
School D	3-5	678	58.3	44.6	2/4
School E	PK-6	805	66.8	54.3	Not Available
School F	K-6	793	76.0	98.0	2/4
School G	PK-5	178	90.3	94.3	1/4
School H	PK-5	421	92.3	84.0	2/4
School I	PK-6	375	87.8	94.3	1/4
School J	PK-6	432	81.1	97.5	1/4
School K	PK-8	223	52.9	2.2	3/8

Appendix F

Status of Meeting Expected/Exemplary Growth for 11 Schools

Improving Schools	Expected Growth 1993-1994	Expected Growth 1994-1995	Expected Growth 1995-1996	Exemplary Growth 1993-1994	Exemplary Growth 1994-1995	Exemplary Growth 1995-1996
School A	MET 1.84	MET 2.92	MET 1.04	NOT MET -1.37	NOT MET -.30	NOT MET -2.17
School B	MET .92	MET .02	NOT MET -.06	NOT MET -.22	NOT MET -1.12	NOT MET -1.19
School C	NOT MET -.75	MET 4.89	MET 1.42	NOT MET -1.89	MET 3.76	MET .28
School D	MET 6.58	MET 5.90	MET 5.37	MET 5.08	MET 4.40	MET 3.86
School E	MET 5.70	MET 4.68	MET 1.88	MET 3.62	MET 2.60	NOT MET -.20
School F	MET 2.03	MET 7.23	NOT MET -.75	NOT MET -.05	MET 5.15	NOT MET -2.83
School G	MET 3.09	MET 3.73	MET 4.87	MET 1.01	MET 2.22	MET 3.36
School H	MET 3.41	MET 1.08	MET 4.30	MET 1.34	NOT MET -.42	MET 2.80
School I	NOT MET -4.36	MET 6.74	NOT MET -10.55	NOT MET -6.44	MET 4.66	NOT MET -12.63
School J	MET 1.36	MET .88	MET .02	NOT MET -.72	NOT MET -1.20	NOT MET -2.06
School K	MET 10.64	MET 13.81	NOT MET -1.31	MET 7.43	MET 10.60	NOT MET -4.53

* Based on the available data base, these calculations did not include WRITING scores, and did not use pre- & post-test student match or 91-day rules.

Appendix G

GROWTH OF INDEX OF ELEVEN SUCCESSFUL SCHOOLS - 1993-1996

Year - Grade	READING												MATH												Year - Grade
	Total			White			Black			Native American			Total			White			Black			Native American			
	Index	G	G(S)	Index	G	G(S)	Index	G	G(S)	Index	G	G(S)	Index	G	G(S)	Index	G	G(S)	Index	G	G(S)	Index	G	G(S)	
95-3	43.48			59.32			35.96			35.02			46.31			62.59			37.52			42.19			95-3
96-4	51.69	8.21	2.79	66.82	7.49	2.57	44.32	8.36	3.12	43.78	8.75	4.91	55.67	9.36	3.72	71.82	9.23	3.54	47.92	10.40	3.88	45.78	3.59	5.14	96-4
94-3	41.14			55.69			33.95			30.90			41.54			55.82			33.86			33.33			94-3
95-4	49.23	8.09	1.69	65.15	9.46	1.36	40.25	6.30	2.28	41.25	10.35	2.93	56.29	14.75	4.85	73.47	17.65	4.82	46.55	12.69	4.70	48.69	15.36	6.52	95-4
96-5	52.51	3.28	2.32	68.72	3.58	2.34	44.87	4.62	2.14	39.00	-2.25	3.77	60.34	4.06	2.12	76.27	2.80	2.04	55.29	8.74	2.21	38.33	-10.36	0.67	96-5
93-3	39.70			57.76			30.33			26.61			38.24			55.60			27.84			30.58			93-3
94-4	48.54	8.84	2.41	65.37	7.61	2.48	38.91	8.58	2.24	41.08	14.47	2.98	50.90	12.67	3.66	68.81	13.21	3.53	40.45	12.61	3.79	42.76	12.18	3.00	94-4
95-5	54.72	6.18	3.19	71.06	5.69	3.32	46.03	7.13	2.70	46.15	5.08	2.07	57.23	6.33	1.40	77.12	8.31	1.76	47.47	7.02	0.51	44.55	1.79	-0.47	95-5
96-6	50.55	-4.18	-0.25	68.92	-2.14	-0.24	44.99	-1.04	0.03	43.97	-2.18	0.41	54.26	-2.97	2.97	74.10	-3.02	2.91	48.24	0.78	3.46	47.37	2.82	4.83	96-6
93-4	45.63			60.21			36.83			40.13			49.01			61.53			40.82			45.31			93-4
94-5	51.41	5.78	2.60	65.44	5.23	2.64	44.79	7.95	2.54	38.14	-1.99	1.58	52.93	3.91	1.73	69.67	8.14	2.24	46.15	5.34	0.78	32.99	-12.32	-2.13	94-5
95-6	49.30	-2.11	0.58	62.47	-2.96	0.02	45.95	1.17	1.79	43.33	5.19	3.37	50.57	-2.35	1.68	67.55	-2.12	1.66	46.81	0.66	1.86	39.26	6.27	3.60	95-6
96-7	50.00	0.70	1.58	63.05	0.58	2.23	45.95	0.00	0.18				46.81	-3.77	1.55	69.88	2.33	2.30	40.05	-6.77	0.01				96-7
93-5	48.20			65.19			40.55			34.60			45.29			62.38			38.90			27.30			93-5
94-6	48.89	0.69	0.25	67.04	1.84	-0.14	44.73	4.18	0.94	39.05	4.44	1.46	45.98	0.69	3.32	65.74	3.36	3.05	42.25	3.35	3.66	31.11	3.81	5.57	94-6
95-7	54.62	5.73	2.84	72.51	5.48	3.10	47.93	3.20	2.51				48.33	2.35	2.76	74.27	8.53	3.53	39.23	-3.02	1.33				95-7
96-8	59.64	5.02	1.89	73.04	0.53	1.19	54.47	6.54	2.96				55.79	7.46	0.28	80.70	6.43	0.18	46.45	7.21	-0.10				96-8
93-6	47.95			64.07			43.48			39.86			47.80			62.78			44.47			35.87			93-6
94-7	50.32	2.36	1.27	67.33	3.26	1.38	43.98	0.51	0.99				48.18	0.38	2.14	72.33	9.56	3.18	39.02	-5.45	0.06				94-7
95-8	60.65	10.33	5.42	73.27	5.93	4.53	56.03	12.05	5.98				56.24	8.06	3.42	75.33	3.00	2.77	48.96	9.94	4.41				95-8
93-7	48.06			63.41			40.68						46.58			62.06			39.08						93-7
94-8	57.97	9.91	4.55	69.72	6.31	4.07	51.94	11.26	5.23				54.12	7.54	1.26	65.28	3.22	1.33	48.46	9.38	0.84				94-8

G = Index growth for 11 schools; G(S) = Average Index growth for the state

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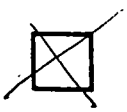

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