

THE IMPLEMENTATION OF ACADEMIC INTERVENTION SERVICES (AIS) IN  
NYS: IMPLICATIONS FOR SCHOOL ORGANIZATION AND INSTRUCTION

Kieran M. Killeen  
University of Vermont

and

John W. Sipple.  
Cornell University

With the assistance of  
Lehn Benjamin, Ph.D. Candidate  
Cornell University  
and  
Lauren Faessler, Ph.D. Candidate  
Cornell University

April 2004



## **Executive Summary**

The primary focus of this Condition Study entails a detailed description of Academic Intervention Service (AIS) programming across New York State (NYS), including its structural elements (e.g., staffing, scheduling, duration, and student-teacher individualization) as well as instructional interventions (e.g., instruction in large vs. small groups, concentration on basic academic skills, lecturing). The survey data for this study were collected between January and December of 2003. Our analyses focus on AIS implementation strategies among NYS school districts as reported by school principals and their English and mathematics teachers. This description relies on our discussion of item response variation by geography, wealth, and position as well as district performance categories.

### **Selected Findings**

#### **Identification of Students for AIS**

- As reported by middle and high school principals, the identification of students for AIS services relies most heavily on standardized tests, report cards, and guidance counselor recommendations. Less common factors were classroom behavior, student attendance, and the recommendation of teachers and parents.
- Comparing upstate districts with New York City (NYC), school administrators in NYC reported a greater emphasis on report card grades and also reported that students and parents were more involved in AIS programming decisions than administrators in upstate districts.
- When asked what they would change about their current AIS program, school administrators commented that they would like to be able to identify students earlier.

#### **Number of Students Receiving AIS Services**

- AIS services are provided to a far greater proportion of students in the five large urban districts (New York City, Rochester, Syracuse, Yonkers, and Buffalo) than in non-urban districts. According to principal respondents, 56% of students in NYC schools and 51% of students in Big Four schools receive AIS services, compared with the statewide average of 31.1%.
- NYC school principals reported that, on average, 15% of their students qualify for AIS but do not receive services, while non-Big Five school administrators reported that on average 6% students qualify for AIS services but do not receive services. Principals

offered absenteeism and scheduling conflicts as reasons students do not receive AIS services.

- When asked what they would change about their current AIS program, principals commented, among other things, that they would expand their program to provide AIS services to students who scored at Level 2 on state exams (which would bring them into compliance with NYSED AIS regulations) and take special education students out of AIS, since these students already receive tailored education services. Approximately one-third of non-Big Five and one-half of Big Five AIS students also receive special education services.

### **Provision of AIS**

- English and math AIS programs are in place in nearly all districts while social studies and science AIS programs are found in about three-quarters of NYS school districts.
- Four basic AIS scheduling models are in place:
  - Model 1: AIS inside the regular classroom (Characterized as inclusive and additive)
  - Model 2: AIS held during classtime, outside the regular classroom (Characterized as self-contained, pull-out, and additive)
  - Model 3: AIS held in addition to the regular classroom, in lieu of electives (Characterized as self-contained and additive)
  - Model 4: AIS held in place of the regular class (Characterized as self-contained and supplanting)
- School administrators and teachers commented that if they could change something about their AIS program, it would be to integrate AIS into the school day rather than providing it before or after school. Providing it during the school day and integrating it into the class schedule would better ensure that students attend. However, course requirements and limits on the school day, make this challenging.

### **AIS Staffing**

- Fifty five percent of districts use designated AIS teachers to provide AIS services.
- More than 60% of districts use special education teachers to teach AIS.
- When principals were asked what they would change about their current AIS program, the single most common response was the desire to increase the number of staff to reduce class size and provide more individualized instruction.

### **Instruction**

- Teachers responsible for AIS instruction are more likely than their colleagues without AIS responsibilities to teach test-taking strategies, instruct individual students, and engage in student led class discussions. Higher concentrations of AIS students in classrooms is strongly related to small group instruction and greater proportions of teachers' class time spent on maintaining order. With regard to collaborative planning, we find a positive relationship between AIS teachers and planning within academic departments.
- AIS teachers in 26% of districts reported spending more than half of their time instructing in small groups, while non-AIS teachers in 7% of districts reported the same. Though AIS teachers appear more than 3 times more likely to teach students in small group settings in comparison with non-AIS teachers, the overwhelming majority of AIS teachers utilize large group or whole class instructional techniques.
- Although teachers report administering tests and quizzes less frequently in AIS classes than in non-AIS classes, they are more likely to teach test taking skills.
- Classroom instructional strategies do differ among AIS and non-AIS teachers. However, these differences are not dramatic and only appear in several instances. For example, AIS English teachers reported requiring students to read novels, plays, essays, etc. less often than non-AIS English teachers. Yet, there appear to be no differences in letting children choose their own reading material, discussing assigned reading materials, or even the focus on technical aspects of writing.

### **Policy Implications**

The primary policy implication from this report may be the call for greater resources from urban districts to assist in the development and implementation of AIS services. The findings indicate that the proportion of students receiving AIS services is twice as large in big urban districts as in non-urban districts. Administrators in urban areas also report greater proportions of children who qualify for AIS services but are not receiving services than in non-Big Five districts.

Given this demand, the scheduling of AIS services appears to be more complex in these environments, particularly in NYC. Schools in NYC use both before and after school hours for their AIS, in addition to operating AIS during regular class hours. From a structural perspective, NYC schools may be encountering greater scheduling conflicts or other constraints in their ability to implement AIS programs during regular school hours. For example, upstate suburban and rural

districts appear more likely to ameliorate these issues by substituting electives for AIS programs and are significantly less likely to offer AIS outside regular school hours.

A central concern of principals is insuring that children in need of services are actually attending the AIS programs. Given the lack of compulsory attendance, especially when offered in a voluntary drop-in or after school arrangement, it is reported that children often do not show up for the AIS services. If such a pattern was evenly distributed, there may not be much worry, but attendance issues do appear to constrain AIS program participation and performance. As such, policy makers may wish to investigate options for compulsory AIS attendance for eligible children. However, the findings also note that in classrooms with high concentrations of AIS eligible children, a much greater amount of time is spent on classroom behavior and organization. This suggests that in addition to classroom attendance policies class size issues should be explored. It may be prudent to limit AIS classroom size to preset levels.

Calls for additional resources will likely hinge on these types of conflicts and complexities. Specifically, the state will need to address questions about flexible scheduling for AIS students without making AIS programs more akin to optional, drop-in programs. While compulsory attendance is an option, the scheduling of such classes appears challenging.

Of course, the ultimate goal of AIS is to improve academic achievement of traditionally under performing children. At the present time, we are yet to detect which models are associated with better achievement (either absolute achievement or change over time). We did find that higher performing districts in the late 1990's were more likely to implement an inclusive AIS model, one run within the regular subject area classroom, than did lower performing districts. Other scheduling models do not appear to be related to such performance differences at the outset of AIS programming implementation, once controlling for wealth, geography, and size.

## **I. Introduction**

Beginning in the fall of 2000, New York State (NYS) school districts were required to implement Academic Intervention Services (AIS) that linked under-performing students with heightened resources to improve their performance (See Section 100.1(g), 100.2(ee) of NYS Education Department Regulations)<sup>1</sup>. AIS related regulations mandate the provision of additional instruction to students who needed extra time, support, and skills to meet the State learning standards, replacing the earlier emphasis on remedial instruction. Regulations also include specific guidelines for AIS planning. For example, regulations required that identified students receive services within one academic semester of their identification. State Education Department guidelines also suggest strategies to vary the intensity of the intervention including ideas about scheduling, duration and the level of student-teacher individualization<sup>2</sup>. The guidelines also clearly encourage schools to innovate new instructional strategies to meet student deficits through AIS. Policy guidelines did not suggest specific strategies to change instructional content or pedagogy, or for that matter, provide suggestions on how professional development could improve instructional services within an AIS plan. This measured approach between policy prescription and encouragement for local innovation coincided with the dramatic change in learning and graduation standards driven by Regents led reform.

Our 2001 (Monk, Sipple, & Killeen, 2001) and 2002 (Killeen & Sipple, 2002) condition studies showed increased staffing associated with AIS and the institutionalization of AIS in nearly every school in the state. This Condition Study continues in this tradition with a more detailed accounting of AIS instruction in schools, including which teachers provide AIS, and how scheduling has been modified to allow for extra instructional time for relevant students (e.g., study halls, before/after school instruction, in addition to regular academic classes). A primary focus of this study entails a detailed description of AIS programming including its structural elements (e.g., staffing, scheduling, duration, student-teacher individualization) as well as instructional interventions (e.g., cooperative learning, approaches to differentiated learning in small groups, concentration on basic academic skills, writing workshops).

---

<sup>1</sup> See <http://www.emsc.nysed.gov/part100/pages/1002i.html#Academic%20intervention%20services>.

<sup>2</sup> Kadamus, J. (2000). Q and A. Guidelines on Academic Intervention Services Implementation. New York State Education Department. The University of the State of New York, Office of Elementary, Middle, Secondary and Continuing Education.

The following research goals guide this study:

- A. Report upon the characteristics (structural and instructional) of AIS programs among NYS schools;
- B. To compare and contrast AIS staffing patterns with those found across the NYS teaching workforce;
- C. To document and analyze variation in AIS programs and staffing across school districts, including the Big Four and New York City (NYC);
- D. To document and compare instructional and organizational patterns in AIS and regular academic classrooms.

Our analyses focus on AIS implementation strategies among NYS school districts as reported by school principals and their teachers. This description relies on our discussion of item response variation by geography, wealth, and position as well as district performance categories. Summary analyses also examine typical correlates of program implementation levels including student race and student English proficiency.

It should be noted that our goal is not to explicitly assess compliance with state AIS regulation, but rather to recount current AIS practice as reported by teachers and principals. Degrees of compliance can be inferred from the findings herein, though we suggest variation in compliance can be attributed to a variety of fiscal, structural, and attitudinal factors that may result in intentional or unintentional non-compliance with regulation.

## **II. Data and Methods**

This study attempts to document and analyze Academic Intervention Services (AIS) as one of the central, programmatic initiatives that ensures that all students meet the NYS learning and graduation standards. More than 750 principals and teachers across NYS participated in this study between January and December of 2003. This study is part of a larger research project looking more broadly at school district response to the NYS learning and graduation requirements and builds on two prior condition studies in 2001 and 2002.

### **Survey Development**

We developed survey items after conducting fieldwork in the fall of 2002. Over the course of day-long site visits to four school districts, we conducted 45 interviews with principals, regular education teachers, AIS teachers and guidance counselors. We had previously visited these districts on several occasions during the proceeding two years as part of our attempt to document in depth the district responses to and implementation of the new state requirements.

Originally visited in the 2000-2001 academic year, this recent wave of interviews focused on the relationship between AIS and other programs for underperforming and at risk students, the identification of students for AIS, how AIS is delivered, the focus of AIS instruction, as well as the role of nonacademic intervention services.

Based on the results from the qualitative interviews, we designed principal and teacher survey instruments (see Appendix A). These instruments were designed to collect information about the process by which students are selected (and terminated) for AIS services, the scheduling and staffing of AIS programming, and the degree of participation in AIS among students in English and mathematics classes. While many questions in the surveys were asked of all respondents (principals and teachers), teachers were asked to provide additional information about their actual classroom instruction, organization, and planning while principals were asked to provide information about broader school-wide organization, scheduling, and policy level issues. Interview times ranged from 12-43 minutes in length and were conducted by trained staff using a computer assisted telephone interviewing system at the Survey Research Institute (SRI) at Cornell University.<sup>3</sup>

In order to measure instructional strategies within AIS classrooms, we reviewed and selected appropriate items from the National Education Longitudinal Study of 1988 (NELS: 88-94). Previously tested for reliability and validity by the US Department of Education's National Center for Educational Statistics, the items included measures of general pedagogy, classroom organization, and subject-specific items related to the teaching of English or mathematics.

### Sampling

The principal goal of our sampling strategy sought to balance a representative selection of districts as well as the population of students, against a need to represent specific regions within the state. This goal encouraged us to utilize both cluster and stratified sampling approaches.

In designing our data collection, we used a cluster sampling approach, selecting districts, then selecting schools within those districts and finally selecting teachers within the schools (See Table 1). Overall, we selected 121 districts and then 246 schools (including 166 high schools and

---

<sup>3</sup> "The Survey Research Institute (SRI) is a full-service survey research facility at Cornell University. The primary mission of SRI is to conduct surveys and provide survey research services to Cornell University faculty, students, and administration, federal, state, and local government agencies, other nonprofit organizations, and other organizations in need of survey research work. SRI is committed to offering state-of-the-art technology to its clientele, striving for the highest possible quality in performance while maintaining the highest possible ethical standards of conduct." (<http://www.sri.cornell.edu/about.html>)

80 middle schools) in these districts. We surveyed the principal in each school. These 246 administrators give us an overall picture of AIS. We then chose a subset of these districts (70) to survey more than 500 teachers in grades 7-12, to provide an in-depth documentation of AIS. For the purpose of this study, we considered an ‘in-depth’ district to be a district where the middle and high school principals (if both exist) and four teachers completed surveys (two English and two Math). This requirement did not hold for districts with fewer than four English and mathematics teachers when we would select all the English and mathematics teachers.

**District-Level.** We selected the NYC Public Schools, the Big Four large urban districts (i.e., Buffalo, Rochester, Syracuse, and Yonkers) and then divided the rest of the upstate districts into low-wealth, mid-wealth, and high-wealth districts. The wealth categories were created using the Combined Wealth Ratio (CWR; a composite index of property and income wealth available to each school district). From the 655 non-Big Five school districts, we selected a total of 116 districts, 39 low-wealth districts, 38 mid-wealth districts and 39 high-wealth districts. Letters were mailed to superintendents of selected districts in March 2003, asking them to respond if they did not want their district included in the study (See Appendix B).

**School Level.** We selected both high school and middle school principals to interview. In NYC, we randomly selected 40 high schools and 20 middle schools to participate in the study. Forty-five (45) NYC High School Principals participated and 20 NYC Middle School Principals participated.

We randomly selected four high schools and two middle schools from Buffalo, and two high schools and two middle schools each from Rochester, Syracuse, and Yonkers. Following the principal surveys, one of the Big Four districts declined to participate.<sup>4</sup> Thus we dropped two principal interviews already collected from this district and did not collect any teacher data from this district.

From the 116 upstate districts, we selected one high school from each district. If there was more than one high school in the district, the high school was randomly selected. Next, we randomly chose 17 middle schools from the 39 low-wealth districts, 17 from the 38 mid-wealth districts and 17 from the 39 high-wealth districts. If there was more than one middle school in the district selected, the middle school was randomly chosen. Some districts had combined high school and middle schools and hence there was no middle school principal.

---

<sup>4</sup> Per our human subjects’ agreement with each district, the name of the non-participating district will remain confidential.

**Teacher-Level.** *Our initial sampling approach assumed that the 2001-2002 NYS Personnel Master File would aid in the identification and description of AIS teachers within NYS schools, but we found dramatic underreporting of AIS course instruction by Teacher Assignment Code. This process led to a redesign of the teacher sampling strategy.* From the schools that were selected to participate in the study and whose principal was interviewed, we selected five English and five mathematics teachers teaching at least one section of the subject area in grades 7-12 from the BEDS Personnel Master File database. In NYC, we randomly selected five middle and five high schools from the set of schools where we had successfully surveyed principals. We then randomly selected five math teachers and five English teachers from each school resulting in a target number of 100 teachers from NYC. We ask all teachers specific classroom information (i.e., number of students, number of AIS students, whether the teacher is responsible for providing AIS services in the class).

For the Big Four districts, we selected 10 English and 10 math teachers (grades 7-10) from the high schools and middle schools in three of the four Big Four districts.

From the 116 upstate districts, we chose 18 districts from each of the stratum (i.e., 18 of 39 low-wealth districts, 18 of 38 mid-wealth districts, and 18 of 39 high-wealth districts. Once the 54 districts were chosen, we randomly choose 10 teachers, five math and five English teachers, in grades 7-12 from each of the districts. In schools with fewer than six English or mathematics teachers, we did not sample but rather attempted to survey the universe of teachers in the building (See Table 1A).

**Weighting.** Depending on the policy question posed, it may be more valuable to understand the proportion of districts engaging in a particular practice or the proportion of students that are impacted by a given practice. As such we applied two different weighting schemes to our sampled data in order to generalize the findings across the state. Specifically, the sampling design affords us the opportunity to properly weight the survey responses for the population of districts within each stratum and separately for the population of students in each stratum. We calculate these weights to ensure that our sample of principals and teachers accurately represent the population of districts in each wealth stratum and separately the number of students being educated in each of the three strata. To generate these weights, we calculated six separate weights – two for principals only, two for teachers only, and two for the combined sample of principals and teachers. One of each pair of weights is calculated to allow for generalization of the findings

to the population of districts and the second is for generalization of findings to the student population in each stratum across the state.

We calculated a district weight by dividing the total number of districts in each of the three wealth strata by the number of districts in our sample. Since we have multiple respondents in many districts, we divided the district weight by the number of principals, teachers, or both combined and assigned each respondent the resultant weight. For example, if 120 districts are in the upper stratum and we have data from 40 districts in the same stratum, the district weight is 3 (120/40). If two principals and 10 teachers are in the sample from a given district, the individual principal weight is  $3/2$  or 1.5. The individual teacher weight is  $3/10$  or .3 and the combined weight for analyses using both principal and teacher data is  $3/12$  or .25. For the Big Four districts, we only have data from three of the four districts and hence each of the district weights is  $4/3$  or 1.333.

The student enrollment weight is calculated much the same way but using the aggregate enrollment of the districts in the strata and the total enrollment of each district. For example, if the aggregate enrollment of districts in the poorest third of the non-Big Five districts is 200,000 and a given district has a total enrollment of 10,000 students, the district weight is  $(200,000/10,000)$  or 20. Subsequently, if we have 15 respondents (2 principals and 13 teachers) the weight for each respondent is  $20/15$  or 1.333.

## Analytic Methods

**Univariate Approaches.** We begin by presenting simple univariate means and standard deviations for two distinct sets of variables. The first set of variables is related to the following AIS issues and relies on principal response:

- Selection and termination criteria for students in AIS programming
- Persons involved in the decision-making to assign students to AIS
- Student participation
- Planning
- Scheduling
- Staffing

The second set relies on teacher response and is related to the following issues:

- Instructional and classroom organization practices
- Instructional planning
- Teacher professional development
- Classroom environment

We then test for significant statistical differences between subgroups of respondents. Using the principal data to examine the logistics and scheduling of AIS, we analyze whether bivariate differences exist between principals in NYC, the Big Four large city districts, and the non-Big Five districts. Subsequently, we use teacher data to assess any differences in instructional and classroom organization strategies between teachers responsible for AIS instruction and those teachers who are not responsible for the provisions of AIS.

Our survey also allowed for the collection of data from open-ended questions from both teachers and principals. We weave some of this qualitative data into our findings to help clarify and explicate the findings. Future studies will more fully describe this data.

Finally, we link the survey data with four years of district performance and demographic data (1999-2003) to examine the multivariate relationships between community wealth, district fiscal, demographic and performance measures, and the AIS organizational and instructional strategies reported by principals and teachers. We use the Chapter 655 and School Report Card datafiles (1999-2003) to investigate demographic and performance differences and similarities between schools with different models of AIS programming, staffing, and scheduling.

**Multivariate Approaches.** In order to effectively describe AIS practices and test for substantive differences across the State, we selected methods that would inform discussions of key AIS practices and the likelihood of their implementation given various contexts. Yet the nested nature of the data requires techniques other than ordinary least squares (OLS) regression models. Most of our regressions use either binary or categorical dependent variables as we tried to predict differences across contexts with specific AIS strategies. For binary outcome variables, we used cross sectional time series logistic regression (STATA xtlogit) to calculate the estimates and for the multi-layer outcome variables (e.g., frequency of practice) we used an ordinal logit (STATA logit) modeling technique. These robust estimates adjust the standard errors found in the correlated residuals stemming from the nested structure of the data (e.g., individuals within districts). Doing so properly accounts for the district-effect on the participants' responses.

To serve as indicators of school district performance, we selected 8<sup>th</sup> grade ELA scores (district aggregates) both at the absolute level in 1999 and then a measure of change over time between 1999 and 2003. To calculate the change variable, we regressed the mean of the 2001/2 and 2002/3 scores on the mean of the 1999/0 and 2000/1 scores and saved the residuals as a new standardized variable. Hence, the indicator for change in 8<sup>th</sup> ELA performance over time has a mean of zero and a standard deviation above the mean of one. We chose these indicators given the time period during which we are collecting principal and teacher data on AIS programming

(2003). Using the 1999 achievement levels and then the growth in achievement in the initial years of AIS programming, we are able to analyze whether prior performance levels or gains in performance over time are related to (predict) current AIS programming. It is not prudent at this time (though possible in future years) to use AIS programming to predict current achievement levels given the lag time necessary for the treatment effect (i.e., AIS) to have an effect on achievement.

The estimates reported are odds-ratios and are easily interpreted. For example, a value of one (1) indicates even odds of occurrence at different levels of the independent variable or between comparison groups. Any significant value greater than one indicates an increased likelihood of occurrence (e.g., a value of two indicates the practice is twice as likely as the comparison group) and any significant value less than one indicates a reduced likelihood of occurrence when compared with the comparison group.

### **III. Findings**

#### **AIS Structural Features**

In this first set of findings, we describe AIS program structures as reported by principals across NYS. Initial questions focused on the criteria used to select students for AIS programs, as well as to terminate services. Related to entry and exist patterns, we also focus on the identification of key players in the AIS program delivery, and the assessment of their relative importance in AIS decision-making. Following a discussion of AIS scheduling issues, we conclude with statements on AIS program offerings by academic subject area.

#### **Criteria used in the decision to provide AIS services to students.**

How are students enrolled and dismissed from AIS programs? In this line of questioning, principals were asked to weigh various criteria used to warrant the provision of AIS services to students as well as indicate the people typically involved in this decision. In summary, administrative decisions rely heavily on standardized tests, report cards, and guidance counselor recommendations to both provide and suspend AIS services for students. Criteria such as classroom behavior and student attendance do not factor heavily in this process.

Generally across the state, formal report card grades and student performance on standardized tests factor heavily into the decision of administrators to provide AIS services to students. Of the two, student performance on standardized exams, including state exams are very important in AIS placements. Principals representing 70% of all districts indicate that test scores on these exams are very important. Student attendance and classroom behavioral issues seem

fairly unimportant in the decision-making process. Of those adults able to make recommendations regarding AIS placement, it appears that the recommendation of the guidance counselor is most important, with teacher and then parent recommendations being less important.

Yet when principals were asked how they would change their current AIS program, several noted that they would make improvements to the process of identifying AIS students. For example, principals commented that they would identify students earlier. One principal commented, “What we need to do is more timely diagnostics so we catch problems earlier.” Another principal explained the problem of identifying students for AIS services on outdated 4<sup>th</sup> grade test scores, “There are no exams in 5th and 6th grade, just the 4th grade exams. They come into 7th grade based on their 4th grade exams.” Still another principal commented that receiving the scores from NYS earlier would help, “I would like to see the test results back from NYS earlier, to identify earlier.”

Other principals commented on the characteristics of the student population identified for AIS. One principal would take special education students out of AIS, “I would take the special education students out of AIS - I don't believe they need that and it takes away from time that could be given to other students. They're already identified and receiving special education services and they're supposed to receive additional services, which is kind of a double dip but we're mandated to do that.” Other principals noted that they would expand the program to serve more kids in need of assistance. For example, one principal commented, “I would have more funding for additional staff so that we could service the kids who got twos on the state exams as well as we service the [students] who got ones.”

Interestingly, principals in NYC schools reported a heavier reliance on a wider number of criteria used to identify students for AIS in comparison with their counterparts upstate. While all districts tended to rely on performance exams equally, administrators in NYC indicated that report cards were more heavily utilized in their schools compared to upstate districts. Similarly, NYC districts relied more on parent recommendations, classroom behavior, and attendance than upstate schools.

Are the same criteria and individuals involved in the decision to terminate services? Yes, report cards, tests, and the recommendation of the guidance counselor are most salient. Parents, attendance, and classroom behavior are not very important. Yet, when principals were asked about what they would change with their current AIS program, some noted the need for more flexibility in testing to decide whether to terminate. For example, one principal commented, “I would give the student the ability to test out of AIS. At this point, the only way a student can get out is with the next State exam.”

Principals were also asked to indicate which people were more or less involved in AIS programming decisions. Individuals were ranked on a scale as either not involved or very involved. Predictably, administrators and school counselors are very involved, as are teachers. Statewide, principals representing 31.1% of districts said that parents were involved in the decision to grant AIS services. Twenty-eight percent (28%) of districts report that parents were as important in the termination of AIS services. What stands out, however, is the absence of student involvement in the AIS programming decisions. Principals representing 63.7% of districts stated that students were not very involved in these decisions.

In contrast, NYC districts tended to have much greater involvement with parents and students in AIS programming than did the upstate districts. For example, the average involvement score for student participation in the AIS programming process was a 2.08 among upstate districts. A score of 1 indicates not very involved. However, among NYC schools, that same score was 3.32. When asked to name other individuals typically involved in this process, a great number of principals stated that central office administrators like directors of curriculum, as well as school psychologists and social workers, were also very involved.

#### **How many students are involved in AIS program services?**

In general AIS services are provided to far greater proportions of students in urban districts than among upstate districts.

Statewide, principals report that approximately one-third (31.1%) of their students receive AIS services. Among these students, 36% also receive special education services. By comparison, principals report that 56% of their students in NYC schools and 51% of their students in Big Four schools receive AIS programming. More than half of NYC AIS students also qualify for special education services as well.

However, principals in non-Big Five districts report that 6% of students that qualify for AIS do not receive services for one reason or another. In NYC, however, principals report that 15.3% of their students qualified to receive AIS do not actually receive those services.

When asked to identify the primary reason for the discrepancy between the number of students who qualify for AIS but do not receive AIS instruction, the answers fell into one of three categories. First, principals stated that student absenteeism from school and AIS classes is a large issue. Some students simply avoid the AIS class and/or school altogether. Second, as there are no rules about compulsory AIS attendance, parents will often disallow students to attend AIS classes. Third, some schools have tremendous difficulty scheduling all students for AIS given their tight course schedules. Only a handful of principals mentioned transportation issues.

### **Allocation of teachers for AIS services**

In general, multiple educators are employed to carry out AIS services. In 55% of districts, principals reported that designated AIS teachers staff AIS services. Over 60% of districts have special education teachers employed in AIS services.

We inquired as to collaborative arrangements for AIS instruction and teaching models. Specifically, principals were asked whether co-teaching or consulting models existed. For example, this would be when special education or AIS teachers *pushed into* programs within regular classes. Sixty-two percent (62%) of districts followed this approach; this lends credence to the earlier findings that found about the same percentages for push-in and pull-out AIS service delivery mechanisms.

Yet, many principals spoke about the need for additional staff, most specifically to reduce class size and provide more individualized instruction. One principal commented, “Increase staffing and increase time for planning of delivery of individualized services.” In fact, when asked what would they change about their current AIS program, more principals responded that they would increase the number of staff, than any other reported change. Staff included teachers, counselors, social workers, and paraprofessionals. One principal explained, “I would try and hire more staff or faculty so that we could differentiate some instruction in the areas that we currently do not, in science and in English, and also we'd like to add social studies.”

### **How is AIS actually scheduled during the school day?**

AIS program patterns are multifaceted and as such are difficult to generalize across the state. Following a brief introduction to the section, we present and discuss some basic patterns to AIS program scheduling as well as some relationships between scheduling models. Though multiple scheduling models exist, and in any one school several models may be in place, we suspect that the prevalence of schools with two or more AIS delivery models per subject is actually small. The correlation evidence presented supports this assertion.

Overall, English and math AIS programs are more common than other subject area AIS programs. Principals report that AIS is universally provided for English and Math subjects. While a little over eighty percent (80%) of districts report some social studies AIS and 76% report some science AIS programming.

For each subject area, the provision of AIS services occurs both during and outside of regular school hours. In the case of English AIS, for example, approximately half of all districts manage AIS English either before or after school hours. However, we are unable to tell what

programs are exclusively “in-school” versus “out-of-school”, or a blend of the two. As such, these overlapping conditions frustrate a clear and cogent description of AIS program scheduling patterns or model identification.

Interestingly, though more than half of all districts run AIS before or after school, when principals were asked what they would change about their AIS program, many commented that they would prefer to integrate the programs into the school day. For example, one principal said, “I would find a way to include more AIS during the school day. What happens is the kids could go to any school in the district and because of that, it is hard to schedule AIS after school. So I would like to build AIS into the schedule. I would need a little more money.” Principals’ comments suggest that when AIS is before or after school, students do not necessarily attend. Yet, if AIS is going to be effective, principals argue, students should be required to go. This is better ensured if AIS is provided during the school day. Another principal commented, “Provide funding to do AIS as part of the regular program during the day instead of after school...add an extra period so the students don't see as it as optional.”

A chief difference among AIS program scheduling appears to be the strength of their association with regular subject area classes. Akin to special education delivery models, the scheduling of AIS programs may be inclusionary in nature or held in self-contained classrooms. It is also true that schools may elect to schedule AIS programs in more than one way. We believe there are four general categories to AIS scheduling:

Model 1: AIS inside the regular classroom (Characterized as inclusive and additive)

Model 2: AIS held during classtime, outside the regular classroom (Characterized as self-contained, pull-out, and additive)

Model 3: AIS held in addition to the regular classroom, in lieu of electives (Characterized as self-contained and additive)

Model 4: AIS held in place of the regular class (Characterized as self-contained and supplanting)

In the first model, principals report that more than a third of students receive English AIS programming within the regular education classroom. We suspect that this first model includes AIS activity and programming during the regularly scheduled class session. However, it is unclear if the schedule involves instruction with a designated AIS teacher, or the regular education teacher performing AIS activities.

In the second model, principals report that a third of all students are drawn outside of their regular English class, during class time, for AIS programming. Although students are drawn out of and thus away from the regular classroom, we believe principals still interpret these

programs as supplementary or additive because they are so closely associated with the regular classroom. There is no statistically significant difference ( $p \leq .01$ ) between these proportions among the city and upstate school districts. However, the means trend towards a higher proportion of students (47%) in NYC participating in this pullout model, compared with students (32%) in upstate school districts.

The third model appears to have less connectivity with regular education classrooms. When asked if students were placed in a class specifically for AIS students that meets in addition to regular English class, principals representing 82% of districts respond affirmatively. Note however that this proportion is somewhat higher and somewhat in conflict with the second model described above. This third AIS model appears to be administered separately from the regular subject area class, and is attended by students in lieu of their electives and traditional study halls. In the case of English AIS, principals representing 48% of districts (47.7% of students) report that AIS is offered in lieu of study halls, and 44% of districts allow for electives such as art, music, and foreign language to be replaced. There is no statistically significant difference between these proportions among the city and upstate school districts. There is no statistically significant difference ( $p \leq .01$ ) between the proportion of districts affected in this “additional” model among the city and upstate school districts.

In the last model and consistent with prior research, we asked the question of whether academic intervention services were being offered in-place-of or in-addition-to regular education classes. Prior research couched these differences as either supplementary (an additive program service) or supplanting (a replacement program service). As was the case in prior research, a good deal of districts representing a large proportion of children do report that AIS programs are offered in place of regular education classes. For example, principals representing 13% of districts offer English AIS instead of regular academic classes. The variation about this mean is fairly tight. This finding is also reinforced by answers to the contrary question. Principals representing 81% of districts report that English AIS programs are offered in addition to regular classes. These basic patterns hold across subject areas and do not appear to differ between urban and upstate districts.

As previously mentioned, we believe some schools elect to administer AIS programs through a variety of scheduling models. Given this, we also calculated the strength of the association between principal responses to survey items using Pearson correlations on

unweighted response data<sup>5</sup>. Several examples of these patterns are offered here. In the case of English AIS, if programs are run either before or after school, then there is a tendency to not run the programs in place of electives ( $r = -.14$ ;  $p \leq .05$ ). However, before or after school, English AIS programming is also somewhat related to programming AIS during regular class time ( $r = .13$ ;  $p \leq .05$ ). These types of modest associations are consistent for subject areas like English and mathematics. In the sciences, however, the strength and frequency of the item associations increase.

AIS science scheduling may create unique issues within schools given the need for specialized lab equipment that is not easily moved around in school facilities. Again, we draw on relationships between responses from principals. If AIS science is offered in place of the regular education class, it appears associated with replacing electives as well ( $r = .28$ ;  $p \leq .05$ ). The strength of this association indicates that at least some of the “supplanting” AIS models mentioned earlier include AIS science classes. Interestingly, if AIS science is offered in addition to the regular education class, then it is slightly more associated with the replacement of electives ( $r = .32$ ;  $p \leq .05$ ). In this instance, it seems likely that AIS science may actually be offered as a separate lab. The association between AIS science being offered outside of the regular class and in a designated AIS academic lab is modestly strong ( $r = .33$ ;  $p \leq .05$ ).

In summary, AIS programming is delivered for each subject area (English, math, science, and social studies) in the vast majority of NYS school districts. A key distinction among AIS scheduling models is the degree to which the AIS model is associated with the regular education class, similar to the typical variations in self-contained and inclusive special education service models. Though schools may deliver multiple AIS models for each subject, the prevalence of such practices among districts appears small.

### **AIS Instructional Strategies**

Our focus on AIS classroom instruction hinges on whether instructional strategies differ from those found in regular subject area classes. The survey asked teachers to focus on one particular class they taught during the week (see Appendix A for the survey instrument). We then asked teachers to describe this class and to respond to a set of general instructional questions and subject-specific instructional questions related to this class.

---

<sup>5</sup> The strength of several correlations and their significance levels are reported as necessary. Tables showing the correlations for each survey item in this section are available upon request to the authors, but are not included in this report.

The classroom portrait based on the current teacher sample has, on average, 19 students, with eight of the students receiving AIS services. As a proportion (43%) this figure is slightly higher than the figure reported by their principals. Figures 1-3 shows that teachers in one-third (33%) of districts had no AIS students in their classroom, teachers in 14% of districts reported having only AIS students in their classrooms, and teachers in 50% of districts reported a mixed classroom with both AIS and non-AIS students. In addition, 17%, or approximately three of the 19 students, were receiving non-academic AIS services such as counseling, nutrition, or health assistance. Teachers also reported, on average, that an additional 11% of students in this classroom could benefit from AIS services but were not receiving them. This latter figure is within the range reported by principals.

Whereas the principals report a global estimate for AIS participation, we asked teachers to report on a specific class period. Over the full sample of more than 500 teachers, we have in essence, a random sample of classes taught across the state at a given point in time. Responding to a specific class they are actually teaching, we asked teachers to report both their class enrollment and AIS enrollment, and whether or not the teacher is required to provide AIS instruction in that class. For the Big Four and other non-NYC Needs Resource Capacity Categories, the teachers reports do closely mirror the principals. For instance, teachers in Big Four districts report 44% of their students as AIS students (43% for principals) and in average need districts, teachers report 32% AIS students and principals 28%. In NYC, however, the teachers (29%) report a far smaller proportion of AIS students than do principals (56%).

[Insert Table 1B and 1C here]

Comparing classes taught by a teacher responsible for providing AIS instruction versus those who are not responsible, the class makeup is quite different. Class sizes are consistently smaller (e.g., 22 vs. 27 in NYC, 15 vs. 21 in High Need Rural Districts) and the proportion of AIS students is consistently higher (e.g., 77 vs. 13% in NYC, 66 vs. 19% in the Big Four, and 80% vs. 17% in High-Need-Rural).

Principals in non-Big Five districts report that 6% of students that qualify for AIS do not receive services for one reason or another. In NYC, however, principals report that 15.3% of their students qualified to receive AIS do not actually receive those services.

[Insert Table 1B and 1C here]

### **Modal Models of Instruction**

Teachers report that whole class instruction is the most common mode of instructional delivery. By way of actual pedagogy, popular delivery methods include straight lecture, whole group discussion, and/or oral responses to individual student questions (See Table 2A and 2B). Teachers were asked the percentage of time they spent on various practices necessary to provide instruction in their classroom. On average, teachers representing 52% of students report spending most of their time (50-100%) instructing the whole class. In this sense, teachers spend the majority of student seat time focused on instructional delivery. They report only spending small amounts of time spent on maintaining order and discipline and performing routine administrative tasks.

[Insert Table 2A and 2B here]

Teachers were also asked more specific questions about how often they use more detailed teaching methods and instructional media (see Table 3A and 3B). Most students, according to teachers, are engaged in oral question and answer sessions several times per week. Teachers often lead whole group discussions, and other times students work cooperatively in teams or complete individualized writing assignments in class. Several teaching methods are less frequently used, including lecturing as well as computer work.

### **AIS versus non-AIS instruction**

To examine whether AIS instruction is distinct from non-AIS instruction, we compared the responses of teachers who were responsible for AIS instruction in this particular class to those teachers who were not responsible for AIS instruction in the class. Tables 2- 6 reflect their responses to instruction related questions as well as points where significant differences exist.

AIS teachers distinguish themselves from non-AIS teachers through their utilization of small group interactions with students. While lecture and whole class discussion was the modal model for all teachers, those teachers responsible for delivering AIS instruction reported using small-group and individual instruction more frequently and using lecture/whole group methods less frequently than those teachers not responsible for delivering AIS in this classroom. They report more individualized or one-on-one attention with students. Although teachers report administering tests and quizzes less frequently in AIS classes than in non-AIS classes, they are more likely to teach test taking skills.

Several teachers (non-AIS and AIS), when asked what they would change about their AIS program, noted that they would decrease the number of AIS students in a class or group. In fact, this was one of the most common responses. Teachers made such comments as, “I’d like to get class size down,” “More teachers with support of aides. Lower teacher to student ratio with administrative support,” and “I would have smaller groups, no more than 10, for those that qualify. On an as need basis if they need it. For a shortened time period.”

On the whole, teachers reported spending comparable amounts of time on routine administrative tasks and on issues regarding classroom behavior. We found no evidence to support a claim that AIS teachers contend with greater classroom conflict and student discipline issues than non-AIS teachers.

Classroom instruction strategies do differ across academic subject areas between the two groups of teachers. However, these differences are not dramatic and only appear in several instances. For example, AIS English teachers reported requiring students to read novels, plays, essays, etc. less often than non-AIS English teachers. Yet, there appear to be no differences in letting children choose their own reading material, discussing assigned reading materials, or even the focus on technical aspects of writing. In the case of math, teachers in AIS classrooms report more frequent attention to the importance of math in daily math. However, on many other common items, there appear to be no other significant differences. Issues such as the memorization of facts, rules and steps, understanding the nature of proofs, and even items such as performing calculations with speed and accuracy appear to receive even attention in both the AIS and non-AIS classroom.

Interestingly when math teachers were asked whether they focus on increasing students’ interest in math, there was no difference among classrooms. This is significant given that one of the major barriers to the effectiveness of AIS reported by teachers was student motivation and participation. In fact, student participation/engagement was the most common response by teachers when asked what the biggest challenge for AIS students in meeting the learning and graduation requirements. For example, one teacher noted, “Motivation; lower level learners struggle so much it's hard to get them interested.” This included getting students to AIS as well as their motivation once they were in the AIS setting. For example, one teacher commented, “Making sure the students who need the services are in the class.” Another teacher noted, “All of the kids who did their homework regularly are out of AIS this year. Those who didn't are still in it.”

**Professional development opportunities for AIS teachers**

Given the focus on under performing students in the AIS program, we were interested in the type and degree of professional development opportunities that may influence and even favor the instructional practices of AIS teachers. We asked teachers several questions along this dimension.

[Insert Table 7A and 7B here]

Generally most teachers acknowledge receiving some form of specialized training to work with under performing and at risk children. Teachers representing 72% of students indicated that they had attended formal workshops or conferences related to this specialized training. When asked if they participated in an independent study, that is self-guided learning, related to the instruction of at risk or under performing youth, this figure climbs to almost 85%. Teachers representing 44% of students said they participated in some form of peer observation or mentoring related to this cause. Teachers representing fewer than one-third of all students stated that they had actually earned an additional certification in special education or reading. Teachers responsible for AIS instruction tended to report more frequent professional development experiences. In general, they reported higher average participation in workshops, greater levels of advanced certification, and greater independent studies for working with under performing students in comparison with teachers not responsible for teaching AIS.

Regionally, these patterns are fairly equivalent among districts across upstate NY. However, significant differences exist between teachers in high need rural districts in comparison with those in NYC. For example, teachers in high need rural areas report attending fewer workshops or conferences, and other generalized professional development activities.

Principals also commented on the need for more planning and collaboration among staff, parents and all those involved in the delivery of AIS. One principal expressed a similar sentiment, “I’d like to see a lot more collaboration with teachers from across different subject areas, working together on various ways to deal with the issues our kids deal with.” Time seemed to be a barrier. For example, one principal, when asked how they would change their current AIS program responded, “More time for collaboration for all involved--principal, teachers, and parents.” Interestingly, some principals commented on the specific need for planning between AIS and regular education teachers. One principal commented, “More collaborative planning time between the AIS instructor and the regular class teacher.”

## AIS Programming by Context: A Multivariate Analysis

Having presented basic descriptive statistics, frequencies, and correlations of AIS organization and practice, we relate these practices with wealth, performance, and relevant teacher and classroom characteristics. In other words, we ask whether certain practices more or less prevalent in wealthy communities, in districts with higher levels of academic performance, or in districts that have made greater gains in performance since the implementation of the new Regents Standards and Academic Intervention Services regulation? In this report, we focus on three sets of AIS-related practices: Scheduling, elements of instruction, and teacher planning for AIS.

### **Scheduling**

As shown in Tables 8 and 9, we first examine the contextual differences associated with (not necessarily caused by) the scheduling of AIS instructional time for students. Table 8 represents English AIS scheduling and Table 9 represents the scheduling of AIS in mathematics. In examining the possible times to schedule student AIS, three distinctions are important to note.

#### **a. Is AIS scheduled before and/or after regular school hours?**

We have substantial qualitative evidence from teachers that a major obstacle of their AIS programming is simply getting students to show up. Many noted that when AIS is not required (e.g., a scheduled class during school hours) many students do not attend the designated AIS sessions.

The quantitative findings related to scheduling AIS before or after school suggest that while the absolute level of performance prior to implementation of AIS is unrelated to this scheduling option, district change in performance over time (8<sup>th</sup> grade ELA scores) is positively related to scheduling AIS before or after school. It is important to note here that these scheduling options are not mutually exclusive and many districts use any number of combinations of scheduling options. Neither community wealth (property wealth or income wealth) nor the proportions of poor children (% frpl) are related to the use of before or after school AIS instruction. District size is positively associated with before and after school AIS with larger districts more likely to include the strategy. In terms of where the districts are located, NYC, the Big Four, and small city schools all have odds ratios over two (2) for English, though only small city schools are statistically significant different than the comparison group of rural districts. There are no significant differences between suburban and rural district practice, indicating the prevalence of this practice is roughly consistent across these districts, once controlling for size, wealth, and performance.

**b. Are students missing electives or using study halls to ‘fit in’ AIS class time?**

A popular concern is that some students will be unable to take elective courses as their AIS classes are scheduled in place of the electives. Is this scheduling phenomenon more likely to take place in poor districts, with poor students, or in small rural districts with fewer scheduling options?

The findings suggest that the scheduling of AIS in place of electives is not associated with the measures of performance, wealth, or size, and is only related to location in that the Big Four educators are less likely to report this practice than those in rural areas. While only approaching significance, it does appear that this practice may be more likely in wealthier and more suburban communities than in the large urban or rural areas. Further investigation should attempt to determine if this is because of the lighter reliance of before and after school options in the suburban districts and hence places greater pressure on student schedules than in districts where before and after school times are used for AIS. Of note, is that teachers are significantly less likely to report that AIS is used in place of electives than do principals.

Once controlling for urbanicity, greater proportions of poor children seem strongly related to using study halls for AIS services. For English the finding is statistically significant, though for math (odds ratio of 1.50) the coefficient is not significant. The use of study halls for AIS is also positively related to district enrollment. Finally, districts averaging one standard deviation more than others on the 1999 8<sup>th</sup> grade ELA exams are one and one-half times as likely to use study halls. Perhaps this signals a complacency of higher performing districts to simply use study halls rather than creating more specific AIS programming.

**c. Is AIS class time for students scheduled during the regular Academic (English or Mathematics) class, outside of the regular Academic class, or in addition to the regular Academic class?**

The AIS regulations require additional instruction for under performing students, though the details of exactly how to implement are left up to local districts. We have already shared evidence that most school districts are scheduling AIS time in addition to regular academic classes, though we also see that some districts are substituting an AIS version of the course for the regular academic class. Alternatively, districts may provide additional instruction via a class that pulls students out of their regular subject area classes. Another model is to push AIS instruction into the regular English class, or require the regular English teacher to provide the AIS services. Again, many of these options are not mutually exclusive.

The regression results indicate that higher performing districts are more likely to offer AIS instruction during the regularly scheduled English classes (possibly via pushing support staff

into regular classes or requiring the regular academic teacher to provide AIS). The wealth and size variables are generally not significant, though the measure of property wealth (1.01) may suggest an increased prevalence of offering AIS during the regular academic class time in communities with greater property wealth. NYC and the Big Four are several times more likely than rural districts to provide instruction during regular class time. No difference exists between rural and suburban districts.

With regard to which districts provide AIS services in addition to regular academic classes, the results are quite clear. Once controlling for performance and wealth variables, urban districts of all types are *less likely* to provide AIS in addition to regular academic classes. In fact, NYC, the Big Four, and small cities are only 8%, 2% and 39% as likely, respectively, as rural districts to provide AIS in addition to regular academic classes. There is no significant difference between suburban and rural districts. Of note, for both English (significant) and math (only approaching significance) and controlling for urbanicity, districts serving greater proportions of poor children are associated with a practice of providing AIS in addition to regular academic classes.

It is important to note that each of the aforementioned strategies are not necessarily mutually exclusive. It is plausible, and further analyses will tease this out, that some districts offer AIS before school, during regularly scheduled academic classes, and also in addition to regular academic classes. Other districts may limit their AIS programming to one scheduling model.

### **Instruction**

Turning to the measures of classroom instruction (See Table 10 & 11), we sought to document general classroom organization and pedagogical strategies and then determine whether differences exist between teacher types (e.g., English vs. mathematics; responsible for AIS vs. not responsible for AIS) and across district (e.g., wealth, location) and classroom (e.g., class size, proportion of AIS students in the class) contexts. While we reported on many measures above in the descriptive sections, here we focus on three important sets of indicators for instruction.

**a. How does the percent of classroom time spent on whole class instruction, with individual students, and in maintaining order vary by context and teacher type and responsibilities?**

These measures are important signals of how teachers set priorities for classroom time and activities. Teachers in districts that had higher levels of performance in 1999 now tend to use more classroom time for whole class instruction than do districts with lower past performance, though districts in wealthier communities tend to use the strategy for less of each class period than those in poorer communities. The property wealth of the community is negatively related to

time spent maintaining order in classrooms and positively related to time spent instructing individuals. No differences between urbanicity were found along these measures.

With regard to instructional differences between teachers responsible for AIS instruction and those not responsible (controlling for performance, wealth, and urbanicity), AIS teachers are one and one-half as likely to spend a greater proportion of class time on individual instruction than the non-AIS teachers. Not surprisingly, larger class sizes are positively associated with whole class instruction and negatively associated with individual and small group instruction. Moreover, as the proportion of AIS students in a class increases (from 0% to 100%), the teachers are twice as likely to instruct in small groups.

The proportion of class time spent on maintaining order offers a window into classrooms and suggests important differences between urbanicity, performance, and high concentrations of AIS students in classes. While there are no significant difference in this measure between teachers responsible for AIS and those reporting no AIS responsibility for the class, teachers instructing greater concentrations of AIS students in the class are more than four times as likely to report greater proportions of class time maintaining order. Above and beyond this finding is a clear distinction in classroom working conditions between Big Five and non-Big Five teachers. It is a near certainty that Big Five teachers report spending greater proportions of class time maintaining order than teachers working outside the Big Five. Finally, both prior levels of academic performance and gains in achievement over the past four years are strongly and negatively associated with time spent on maintaining order. This clearly suggests that more orderly classrooms are both related to absolute levels of district performance and to districts that have substantially improved their performance over time, regardless of what performance level they started.

**b. How do differences in how often teachers lead discussion in class versus how often students lead discussions in class vary by context and type of teacher?**

AIS teachers use student led-discussions more frequently than non-AIS teachers. The same is true for English teachers when compared with mathematics teachers. Similar to the finding above regarding whole class instruction, teachers in previously high performing districts are more likely to engage in teacher led discussions. In terms of districts making greater gains in performance over time, teachers in these improving districts are less likely to engage in teacher led discussions. Teachers in Big Five districts are more than ten times as likely to engage in teacher led discussions in class, when compared with their rural colleagues.

Finally, the teaching of test-taking strategies appears to be strongly related to the classroom practice of teachers responsible for AIS instruction (see Table 12). Teachers with AIS

responsibilities for a particular class are more than three times as likely to teach test-taking strategies.

**c. How does planning among teachers vary by performance and context?**

We examine the frequency of teacher planning in three realms. We first explore planning within a department, then across grade levels, and finally between school buildings. The data reveal no relation of district performance to reported levels of planning by teachers of any type. Despite other findings related to the challenging working conditions of teachers in the largest school districts, we find that Big Five teachers are most likely to report collaborative planning in their departments, though the planning ‘advantage’ does not hold when examining planning across grade levels or across buildings. In fact, teachers in the smaller urban and suburban districts are more likely to report collaborative planning across grade levels. English teachers, when compared to mathematics teachers, are more likely to collaboratively plan across grades and buildings.

With regard to AIS, we find teachers responsible for AIS instruction report more frequent planning within departments than do those non-AIS teachers. This is an encouraging finding given the importance of integrating AIS work with regular class work for under performing students.

In sum, teachers responsible for AIS instruction are more likely than their colleagues without AIS responsibilities to teach test-taking strategies, instruct individual students, and engage in student led class discussions. High concentrations of AIS students in classrooms is strongly related to small group instruction and greater proportions of class time spent on maintaining order. With regard to collaborative planning, we find a positive relationship between AIS teachers and such planning within academic departments.

#### **IV. Conclusions**

The primary focus of this Condition Study entailed a detailed description of AIS programming across NYS, including its structural elements (e.g., staffing, scheduling, duration, and student-teacher individualization) as well as instructional interventions (e.g., instruction in large vs. small groups, concentration on basic academic skills, lecturing). Our analyses focused on AIS implementation strategies among NYS school districts as reported by school principals and their English and mathematics teachers. This description relied on our discussion of item response variation by geography, wealth, and position, as well as district performance categories.

## Selected Findings

### **Identification of Students for AIS**

- As reported by principals (middle and high school), the identification of students for AIS services relies most heavily on standardized tests, report cards, and guidance counselor recommendations. Less common factors were classroom behavior, student attendance, and the recommendation of teachers and parents.
- Comparing upstate districts with NYC, school administrators in NYC reported a greater emphasis on report card grades and also reported that students and parents were more involved in AIS programming decisions than administrators in upstate districts.
- When asked what they would change about their current AIS program, school administrators commented that they would like to be able to identify students earlier.

### **Number of Students Receiving AIS Services**

- AIS services are provided to a far greater proportion of students in the five large urban districts (New York City, Rochester, Syracuse, Yonkers, and Buffalo) than in non-urban districts. According to principal respondents, 56% of students in NYC schools and 51% of students in Big Four schools receive AIS services, compared with the statewide average of 31.1%.
- NYC school principals reported that, on average, 15% of their students qualify for AIS but do not receive services, while non-Big Five school administrators reported that on average 6% students qualify for AIS services but do not receive services. Principals offered absenteeism and scheduling conflicts as reasons students do not receive AIS services.
- When asked what they would change about their current AIS program, principals commented, among other things, that they would expand their program to provide AIS services to students who scored a level 2 on state exams (which would bring them into compliance with NYSED AIS policy) and take special education students out of AIS, since these students already receive tailored education services. Approximately one-third of non-Big Five and one-half of Big Five AIS students also receive special education services.

### **Provision of AIS**

- English and math AIS programs are in place in nearly all districts while social studies and science AIS programs are found in about three-quarters of NYS school districts.
- Four basic AIS scheduling models are in place:  
Model 1: AIS inside the regular classroom (Characterized as inclusive and additive)

Model 2: AIS held during classtime, outside the regular classroom (Characterized as self-contained, pull-out, and additive)

Model 3: AIS held in addition to the regular classroom, in lieu of electives (Characterized as self-contained and additive)

Model 4: AIS held in place of the regular class (Characterized as self-contained and supplanting)

- School administrators and teachers commented that if they could change something about their AIS program, it would be to integrate AIS into the school day rather than providing it before or after school. Providing it during the school day and integrating it into the class schedule would better ensure that students attend. However, course requirements and limits on the school day, make this challenging.

### **AIS Staffing**

- Fifty five percent of districts use designated AIS teachers to provide AIS services.
- More than 60% of districts use special education teachers to teach AIS.
- When principals were asked what they would change about their current AIS program, the single most common response was the desire to increase the number of staff to reduce class size and provide more individualized instruction.

### **Instruction**

- Teachers responsible for AIS instruction are more likely than their colleagues without AIS responsibilities to teach test-taking strategies, instruct individual students, and engage in student led class discussions. High concentrations of AIS students in classrooms is strongly related to small group instruction and greater proportions of teachers' class time spent on maintaining order. With regard to collaborative planning, we find a positive relationship between AIS teachers and planning within academic departments.
- AIS teachers in 26% of districts reported spending more than half of their time instructing in small groups, while non-AIS teachers in 7% of districts reported the same.
- Although teachers report administering tests and quizzes less frequently in AIS classes than in non-AIS classes, they are more likely to teach test taking skills.
- Classroom instructional strategies do differ among AIS and non-AIS teachers. However, these differences are not dramatic and only appear in several instances. For example, AIS English teachers reported requiring students to read novels, plays, essays, etc. less often than non-AIS English teachers. Yet, there appear to be no differences in letting children

choose their own reading material, discussing assigned reading materials, or even the focus on technical aspects of writing.

## **VI. Policy Implications**

The primary policy implication indicated by this report may be the call from urban districts for greater resources to assist in the development and implementation of AIS services. The findings indicate that the proportion of students receiving AIS services is twice as large in big urban districts as in non-urban districts. Administrators in urban areas also report greater proportions of children who qualify for AIS services but are not receiving services than in non-Big-Five districts. The volume of students eligible to receive services appears to interact with issues of AIS program scheduling, attendance, as well as class sizes.

The scheduling of AIS services appears to be more complex in urban environments, particularly in NYC. Schools in NYC use both before and after school hours for their AIS, in addition to operating AIS during regular class hours. From a structural perspective, NYC schools may be encountering greater scheduling conflicts or other constraints in their ability to implement AIS programs during regular school hours. For example, upstate suburban and rural districts appear more likely to ameliorate these issues by substituting electives for AIS programs and are significantly less likely to offer AIS outside regular school hours.

A central concern of principals is insuring that children in need of services are actually attending the AIS programs. Given the lack of compulsory attendance, especially when offered in a voluntary drop-in or after school arrangement, it is reported that children often do not show up for the AIS services. The scheduling of AIS programs before or after school appears to be the result of high concentrations of AIS eligible students as well as complex scheduling issues in the provision of AIS during school hours. AIS programs are allowed, as per the State AIS guidelines, during non school hours if a child cannot attend a program during school hours. Yet attendance issues do appear to constrain AIS program participation and performance. As such, policy makers may wish to investigate options for compulsory AIS attendance for eligible children during non-school hours.

The findings also note that in classrooms with high concentrations of AIS eligible children, a much greater amount of time is spent on classroom behavior and organization. This suggests that in addition to classroom attendance policies, AIS class size issues should be explored. The findings indicate that AIS classrooms in NYC and among Big Four middle and high schools average about 15 students per class. By comparison, this figure drops to

approximately 9 students among AIS classrooms in districts from average needs and high need / urban and suburban areas.

Calls for additional resources will likely hinge on these types of issues. Specifically, the State will need to address questions about flexible scheduling for AIS students without making AIS programs more akin to optional, drop-in programs. While compulsory attendance is required by regulation, the practice of scheduling such classes appears challenging. This study calls into question the degree of compliance with existing state regulation.<sup>6</sup> We find that all schools are offering some version of AIS, though some of the programming decisions either intentionally or unintentionally fall short of strict compliance. Again, the purpose of this study was not to assess compliance, but rather to document and describe current AIS practice.

Of course, the ultimate goal of AIS is to improve academic achievement of traditionally under performing children. On this point further research is warranted. At the present time, we are yet to detect which models of AIS are associated with better achievement (either absolute achievement or change over time). We did find that higher performing districts in the late 1990's were more likely to implement an inclusive AIS model, one run within the regular subject area classroom, than did lower performing districts. Other scheduling models do not appear to be related to such performance differences at the outset of AIS programming implementation, once controlling for wealth, geography, and size.

## **VI. References**

Killeen, K., & Sipple, J. W. (2002). *How have performance standards changed school district practice? Results from a statewide survey of New York State school districts*. Albany, NY: Educational Finance Research Consortium (available at <http://www.albany.edu/edfin>).

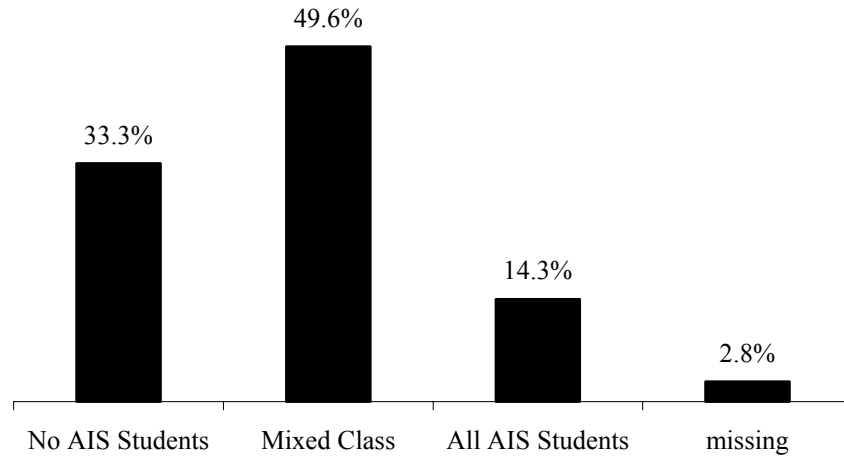
Monk, D., Sipple, J. W., & Killeen, K. (2001). *Adoption and adaptation: New York State school districts' responses to state imposed high school graduation requirements: An eight-year retrospective*. Albany, NY: New York State Educational Finance Research Consortium (available at <http://www.albany.edu/edfin>).

---

<sup>6</sup> We thank Jeanne Post, Maxine Morgenbesser and Fran Wilson from the Office of School Improvement's Regional School Services (RSS) for their comments on this study and for highlighting the fact that our findings suggest some degree of non-compliance with state regulation.

**TABLES**

**Figure 1 - AIS Student Saturation in Class**



**Figure 2 - Percent Time Instructing Whole Class**

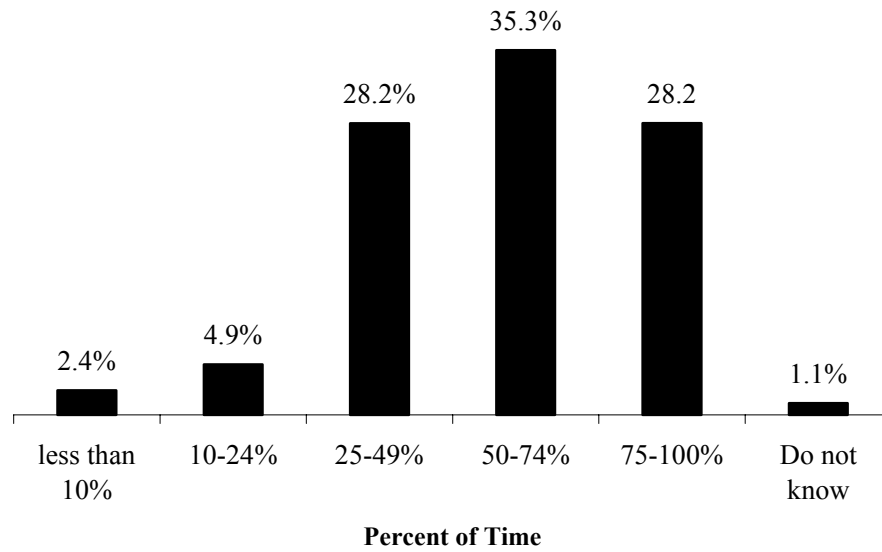
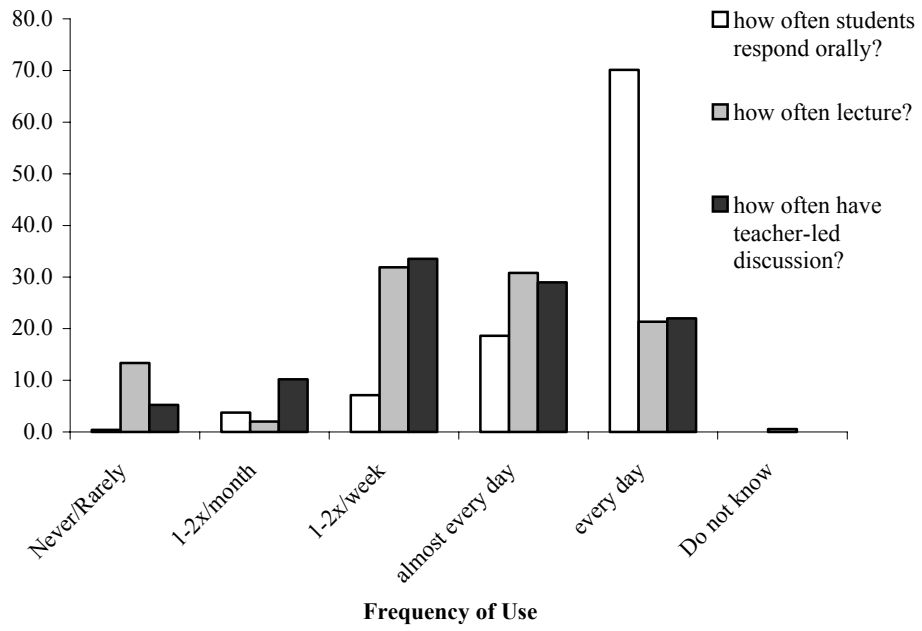


Figure 3 - Common Teaching Methods



**Table 1A – Summary of Sampling Strategy for Data Collection**

	# Districts	# Schools/ Principals	Teachers
NYC	1	65	51(1)
Big Four	3	16	38(3)
Non-Big Five	136	172	422(56)
- Lowest 1/3 CWR	43	56	155
- Middle 1/3 CWR	47	59	142
- Highest 1/3 CWR	46	57	125
<b>Total</b>	<b>140</b>	<b>253</b>	<b>511(60)</b>

**Table 1B - AIS Class Descriptive Statistics (Principal Report)**

Need Resource Capacity Categories		% AIS Students in the Average NYS Classroom
NYC	Mean	56.2
	SD	26.7
Big Four	Mean	43.3
	SD	36.8
High Need Urb/Sub	Mean	44.3
	SD	26.9
High Need Rural	Mean	22.6
	SD	14.0
Ave Need	Mean	27.8
	SD	14.5
Low Need	Mean	16.6
	SD	10.0
Total	Mean	44.0
	SD	27.4

**Table 1C - AIS Class Descriptive Statistics (Teacher Report)**

Need Resource Capacity Index	Teacher Required to Give AIS?		# of Students in Class	# AIS Students in class	% AIS Students
NYC	Yes	Mean	21.7	15.9	76.8%
		<i>Std. Dev.</i>	7.9	10.6	
	No	Mean	27.3	3.5	13.8%
		<i>Std. Dev.</i>	6.2	6.0	
	Total	Mean	25.9	6.3	28.7%
		<i>Std. Dev.</i>	7.0	8.9	
Big Four	Yes	Mean	24.0	15.4	65.6%
		<i>Std. Dev.</i>	9.3	12.1	
	No	Mean	25.6	5.6	18.9%
		<i>Std. Dev.</i>	12.2	16.4	
	Total	Mean	24.8	10.8	43.7%
		<i>Std. Dev.</i>	8.5	11.8	
High Need Urb/Sub	Yes	Mean	14.7	9.2	77.2%
		<i>Std. Dev.</i>	8.0	6.1	
	No	Mean	21.2	4.4	21.0%
		<i>Std. Dev.</i>	4.6	6.3	
	Total	Mean	18.9	6.0	40.2%
		<i>Std. Dev.</i>	6.6	6.6	
High Need Rural	Yes	Mean	11.6	7.7	80.4%
		<i>Std. Dev.</i>	7.4	4.5	
	No	Mean	18.0	3.0	16.6%
		<i>Std. Dev.</i>	5.1	3.9	
	Total	Mean	16.4	4.2	31.9%
		<i>Std. Dev.</i>	6.3	4.5	
Ave Need	Yes	Mean	16.3	8.7	69.4%
		<i>Std. Dev.</i>	9.4	5.9	
	No	Mean	21.6	2.7	13.3%
		<i>Std. Dev.</i>	5.1	3.0	
	Total	Mean	19.8	4.8	33.0%
		<i>Std. Dev.</i>	7.3	5.1	
Low Need	Yes	Mean	17.1	9.8	66.3%
		<i>Std. Dev.</i>	9.1	8.9	
	No	Mean	22.6	1.5	7.6%
		<i>Std. Dev.</i>	5.4	3.5	
	Total	Mean	21.3	3.5	21.4%
		<i>Std. Dev.</i>	6.7	6.2	
Total	Yes	Mean	16.0	9.7	73.5%
		<i>Std. Dev.</i>	8.9	7.1	
	No	Mean	21.6	3.0	14.4%
		<i>Std. Dev.</i>	6.1	4.4	
	Total	Mean	20.0	4.9	31.5%
		<i>Std. Dev.</i>	7.5	6.1	



**Table 2A – Amount of Time Teacher Spends on Key Activities in the Classroom (by AIS Teacher/Non-AIS Teacher)**

Indicate about what percent of class time is spent in a typical week doing each of the following with this class	Scale Distribution as Percentage of all Teachers						Mean for Teachers Responsible for AIS	Mean for Teachers NOT Responsible for AIS
	Mean for ALL teachers	>10%	10-24%	25-49%	50-74%	75-100%		
Providing instruction to the class as a whole	3.65	8.39	10.49	29.37	33.57	18.18	3.43**	3.78
Providing instruction to individual students	2.40	7.75	40.14	22.54	14.79	14.79	2.89**	2.26
Providing instruction to small groups of students	2.34	20.57	32.62	25.53	7.80	13.48	2.61**	2.14
Maintaining order/disciplining students	1.44	71.53	17.36	3.47	1.39	6.25	1.53	1.51
Administering tests or quizzes	1.68	52.45	40.56	5.59	0.70	0.70	1.57**	1.75
Performing routine administrative tasks	1.27	84.03	11.11	0.69	0.69	3.47	1.28	1.28
Conducting lab periods	1.56	67.63	8.63	12.23	4.32	7.19	1.75**	1.45

\*p≤.10, \*\*p≤.05

**Table 2B – Amount of Time Teacher Spends on Key Activities in the Classroom (By Needs Resource Capacity)**

Indicate about what percent of class time is spent in a typical week doing each of the following with this class	Response											
	Mean for ALL teachers	>10%	10-24%	25-49%	50-74%	75-100%	Mean NYC	Mean Big Four	Mean High Need Urban/Suburban	Mean High Need Rural	Mean Ave. Need	Mean Low Need
Providing instruction to the class as a whole	3.65	8.39	10.49	29.37	33.57	18.18	3.08**	3.47	3.72	3.95**	3.69**	3.75*
Providing instruction to individual students	2.40	7.75	40.14	22.54	14.79	14.79	2.56	2.47	2.48	2.31	2.44	2.18
Providing instruction to small groups of students	2.34	20.57	32.62	25.53	7.80	13.48	2.74**	2.28	2.02*	2.44	2.18**	2.20
Maintaining order/disciplining students	1.44	71.53	17.36	3.47	1.39	6.25	1.53	1.70	1.41	1.42	1.43	1.34
Administering tests or quizzes	1.68	52.45	40.56	5.59	0.70	0.70	1.63	1.77	1.63	1.69	1.68	1.73
Performing routine administrative tasks	1.27	84.03	11.11	0.69	0.69	3.47	1.39	1.16	1.29	1.32	1.17	1.19
Conducting lab periods	1.56	67.63	8.63	12.23	4.32	7.19	1.49	1.70	1.67	1.67	1.49	1.48

\*p≤.10, \*\*p≤.05

**Table 3A – Frequency of Classroom Instructional Methods by Teacher Type (by AIS Teacher/Non-AIS Teacher)**

How often do you use the following teaching method or media	Response						Mean for Teachers Responsible for AIS instruction	Mean for Teachers NOT Responsible for AIS instruction
	Mean for ALL teachers	Never/rarely	1-2x/month	1-2x/week	Almost every day	Everyday		
Lecture	2.42	24.7	5.5	28.1	24.7	17.1	2.04**	2.64
Use Computers	.99	42.1	19.3	24.1	7.6	6.9	1.18**	0.90
Use Audio-visual material	1.65	24.0	28.8	15.8	12.3	19.2	1.74	1.78
Have teacher-led whole group discussion	2.59	10.3	8.2	24.0	26.7	30.8	2.60	2.60
Have students respond orally to questions on a subject matter	3.61	0.7		10.9	17.0	71.4	3.59	3.65
Have student-led whole group discussions	1.49	33.3	15.0	24.5	8.2	19.0	1.65**	1.35
Have students work together in cooperative groups	.45 <sup>2</sup>	6.1	17.0	29.3	21.8	25.9	2.44	2.32
Have students complete individual written assignments or worksheets in class	.36 <sup>2</sup>	6.2	6.2	32.2	30.1	25.3	2.62**	2.33

\*p≤.10, \*\*p≤.05

**Table 3B – Frequency of Classroom Instructional Methods by Teacher Type (By Needs Resource Capacity)**

How often do you use the following teaching method or media	Response						Mean NYC	Mean Big Four	Mean High Need Urban/Suburb	Mean High Need Rural	Mean Average Need	Mean Low Need
	Mean ALL teachers	Never /rarely	1-2x/ month	1-2x/ week	Almost every day	Every day						
Lecture	2.42	24.7	5.5	28.1	24.7	17.1	2.02*	2.75	2.23	2.74*	2.40	2.52
Use Computers	.99	42.1	19.3	24.1	7.6	6.9	.52**	.68	.85	1.17**	1.11*	1.10
Use Audio-visual material	1.65	24.0	28.8	15.8	12.3	19.2	1.36	2.26	1.89	1.57	1.84	1.50
Have teacher-led whole group discussion	2.59	10.3	8.2	24.0	26.7	30.8	2.58	2.68	2.48	2.88*	2.35*	2.66
Have students respond orally to questions	3.61	0.7	0	10.9	17.0	71.4	3.61	3.82	3.50	3.69	3.58	3.58
Have student-led whole group discussions	1.49	33.3	15.0	24.5	8.2	19.0	3.61*	3.82	3.50	3.69*	3.58	3.58
Have students work together in cooperative groups	2.45	6.1	17.0	29.3	21.8	25.9	3.61**	3.82	3.50**	3.69	3.58**	3.58**
Have students complete individual written assignments or worksheets in class	2.36	6.2	6.2	32.2	30.1	25.3	2.52	2.89	2.29	2.49	2.26	2.12
Have students give oral reports	.75	58.5	27.2	10.2	2.0	2.0	1.43**	.96	.54**	.58**	.66**	.52**

\*p≤.10, \*\*p≤.05

**Table 4A– What Students do in an AIS Classroom (by AIS Teacher/Non AIS Teacher)**

Does AIS instruction in this department/team, typically have students.....	Mean Response		
	Response for ALL teachers	Teachers Responsible for AIS instruction	Teachers NOT Responsible for AIS instruction
Learn basic skills	1.13	1.09	1.13
Review core concepts	1.05	1.02	1.05
Learn test taking skills	1.13	1.07**	1.14
other	1.50	1.38**	1.56

**Table 4B – What Students do in an AIS Classroom (By Needs Resource Capacity)**

Does AIS instruction in this department/team, typically have students.....	Mean Response						
	ALL teachers	NYC	Big Four	High Need Urban/ Suburban	High Need Rural	Average Need	Low Need
Learn basic skills	1.13	1.14	1.15	1.16	1.10	1.14	1.13
Review core concepts	1.05	1.10	1.09	1.04	1.05	1.03	1.00
Learn test taking skills	1.13	1.12	1.11	1.25	1.15	1.11	1.04
other	1.50	1.65	1.63	1.53	1.52	1.43	1.45

\*p≤.10, \*\*p≤.05

**Table 5A – Descriptive Statistics for English Teacher Instruction (by AIS Teacher/Non-AIS Teacher)**

How often do you undertake each of the following activities in this class?	Response						Mean for Teachers Responsible for AIS instruction	Mean for Teachers NOT Responsible for AIS instruction
	Mean ENGLISH Teachers	Very rarely	1-2x/ month	Once a week	2-3x/ week	Everyday		
Allow students to choose their own reading material;	2.65	32.1	26.2	10.7	6.0	25.0	2.65	2.37
Show films, filmstrips, or videotapes	1.49	63.1	35.7	0	1.2	0	1.39**	1.60
Have students give oral reports	1.90	48.8	36.9	8.3	2.4	3.6	1.75	1.81
Require written reports on readings	2.75	26.2	25.0	23.8	17.9	7.1	2.55	2.78
Discuss assigned reading material	4.24	4.8	6.0	7.1	26.2	56.0	4.23	4.31
Have students read novels, plays, essays, etc.	3.97	13.3	10.8	7.2	15.7	53.0	3.84*	4.15
Have students write impromptu essays	2.46	19.0	40.5	16.7	17.9	6.0	2.51	2.39
Devote attention to the stages of the writing process	3.65	2.4	14.5	14.5	34.9	33.7	3.83*	3.53
Devote attention to technical aspects and skills of writing	3.65	4.8	13.1	19.0	29.8	33.3	3.74	3.63
Have students write in styles that encourage their emotional and imaginative development	2.85	17.9	27.4	13.1	26.2	15.5	2.94	2.78

\*p≤.10, \*\*p≤.05

**Table 5B – Descriptive Statistics for English Teacher Instruction (By Needs Resource Capacity)**

How often do each of the following activities in this class?	Response											
	Mean for All English Teachers	Very rarely	1-2x/month	Once a week	2-3x/week	Every day	Mean NYC	Mean Big Four	Mean High Need Urban/Suburban	Mean High Need Rural	Mean Average Need	Mean Low Need
Allow students to choose their own reading material	2.65	32.1	26.2	10.7	6.0	25.0	3.76**	3.18	2.36	2.53**	2.17**	2.55
Show films, filmstrips, or videotapes	1.49	63.1	35.7	0	1.2	0	1.36	1.43	1.44	1.56	1.51	1.58
Have students give oral reports	1.90	48.8	36.9	8.3	2.4	3.6	2.60**	2.20	1.64	1.80**	1.76**	1.62**
Require written reports on readings	2.75	26.2	25.0	23.8	17.9	7.1	3.52**	3.35	2.38**	2.53**	2.62**	2.62
Discuss assigned reading material	4.24	4.8	6.0	7.1	26.2	56.0	4.50	4.65	3.98	4.23	4.18	4.22
Have students read novels, plays, essays, etc.	3.97	13.3	10.8	7.2	15.7	53.0	4.46	4.46	3.63	3.95	3.77	4.06
Have students write impromptu essays	2.46	19.0	40.5	16.7	17.9	6.0	3.00	3.22	2.11	2.40	2.26	2.51
Devote attention to the stages of the writing process	3.65	2.4	14.5	14.5	34.9	33.7	3.58	3.55	3.45	3.45	3.85	3.87
Devote attention to technical aspects and skills of writing	3.65	4.8	13.1	19.0	29.8	33.3	3.33	4.05	3.64	3.68	3.79	3.68
Have students write in styles that encourage their emotional and imaginative development	2.85	17.9	27.4	13.1	26.2	15.5	3.71**	3.29	2.22**	2.44**	2.67**	3.41

\*p<.10, \*\*p<.05

**Table 6A – Descriptive Statistics for Mathematics Teacher Instruction**

How much emphasis do you give to each of the following objectives?	Response					Mean for Teachers Responsible for AIS instruction	Mean for Teachers NOT Responsible for AIS instruction
	Mean response for all MATH teachers	None	Minor	Moderate	Major		
Understanding the nature of proofs	2.29	37.1	32.3	22.6	8.1	2.02	2.24
Memorizing facts, rules and steps	3.15	1.6	16.1	50.0	32.3	3.13	3.16
Learning to represent problem structures in multiple ways	3.76	0	1.6	19.4	79.0	3.77	3.73
Integrating different branches of mathematics	3.48	0	4.8	45.2	50.0	3.45	3.47
Conceiving and analyzing effectiveness of multiple approaches to problem solving	3.59	0	3.2	30.6	66.1	3.63	3.57
Performing calculations with speed and accuracy	2.90	6.5	17.7	54.8	21.0	2.90	2.95
Showing importance of math in daily life	3.52	1.6	3.2	24.2	71.0	3.65**	3.47
Solving equations	3.50	0	4.8	46.8	48.4	3.44	3.45
Raising questions and formulating conjecture	3.34	1.6	16.1	37.1	45.2	3.26	3.32
Increasing students' interest in math	3.61	1.6	1.6	22.6	74.2	3.69	3.58

\* $p \leq .10$ , \*\* $p \leq .05$

**Table 6B – Descriptive Statistics for Mathematics Teacher Instruction (By Needs Resource Capacity)**

How much emphasis do you give to each of the following objectives?	Response					Mean NYC	Mean Big Four	Mean High Need Urban/Suburban	Mean High Need Rural	Mean Average Need	Mean Low Need
	Mean response for all MATH teachers	None	Minor	Moderate	Major						
Understanding the nature of proofs	2.29	37.1	32.3	22.6	8.1	2.60	2.39	1.92	2.17	2.12	2.84
Memorizing facts, rules and steps	3.15	1.6	16.1	50.0	32.3	2.88	2.98	3.30	3.28	3.19	3.06
Learning to represent problem structures in multiple ways	3.76	0	1.6	19.4	79.0	3.76	3.97	3.63	3.70	3.82	3.76
Integrating different branches of mathematics	3.48	0	4.8	45.2	50.0	3.40	3.59	3.47	3.49	3.49	3.56
Conceiving and analyzing effectiveness of multiple approaches to problem solving	3.59	0	3.2	30.6	66.1	3.76	3.63	3.58	3.38	3.65	3.63
Performing calculations with speed and accuracy	2.90	6.5	17.7	54.8	21.0	3.00	2.88	2.78	3.01	2.72	3.13
Showing importance of math in daily life	3.52	1.6	3.2	24.2	71.0	3.64	3.83	3.67	3.51	3.41	3.47
Solving equations	3.50	0	4.8	46.8	48.4	3.60	3.60	3.47	3.43	3.45	3.62
Raising questions and formulating conjecture	3.34	1.6	16.1	37.1	45.2	3.56	3.27	3.33	3.13	3.33	3.57
Increasing students' interest in math	3.61	1.6	1.6	22.6	74.2	3.68	3.67	3.45	3.54	3.63	3.73

\*p≤.10, \*\*p≤.05

**Table 7A – Teacher Evaluation of AIS Effectiveness**

How as the ____ environment in this classroom changed with the introduction of the AIS program?	Response							
	Mean response for ALL teachers	No change	More	Less	Mean for Teachers Responsible for AIS instruction	Mean for Teachers NOT Responsible for AIS instruction		
Academic Environment	1.37	45.5	53.8	0.8	1.55**	1.33		
Social Order Environment	1.29	63.2	30.1	6.8	1.44**	1.24		
To what extent is your school meeting the ____ needs of underperforming or at risk students?	Response							
	Mean response for ALL teachers	1	2	3	4	5	Mean for Teachers Responsible for AIS instruction	Mean for Teachers NOT Responsible for AIS instruction
Academic needs	3.41	2.3	17.1	31.0	36.4	13.2	3.41	3.26
Non-Academic needs	3.46	2.9	10.1	36.7	33.8	16.5	3.51	3.37

\*p≤.10, \*\*p≤.05

**Table 7B – Teacher Evaluation of AIS Effectiveness (By Needs Resource Capacity)**

How as the _____ environment in this classroom changed with the introduction of the AIS program?	Response										
	Mean response for ALL teachers	No change	More	Less	Mean NYC	Mean Big Four	Mean High Need Urban/Suburban	Mean High Need Rural	Mean Average Need	Mean Low Need	
Academic	1.37	45.5	53.8	0.8	1.42	1.68	1.32	1.40	1.33	1.35	
Social Order	1.29	63.2	30.1	6.8	1.42	1.40	1.28	1.30	1.23	1.24	

To what extent is your school meeting the _____ needs of underperforming or at risk students?	Response											
	Mean response for ALL teachers	1	2	3	4	5	Mean NYC	Mean Big Four	Mean High Need Urban/Suburban	Mean High Need Rural	Mean Average Need	Mean Low Need
Academic needs	3.41	2.3	17.1	31.0	36.4	13.2	3.47**	3.38	3.22	3.40**	3.39	3.46**
Non-Academic needs	3.46	2.9	10.1	36.7	33.8	16.5	3.36	3.17	3.43	3.34	3.54	3.90

\*p≤.10, \*\*p≤.05

**Table 8A – Teacher Professional Development Training for Underperforming Students**

Have you received additional training or preparation to work with underperforming students, including AIS students....	Mean Response (% Yes)		
	Response for ALL teachers	Teachers Responsible for AIS instruction	Teachers NOT Responsible for AIS instruction
Attended Workshops or conferences for instruction	72	74**	60
Earned additional certification in Special Education, Reading, etc	28	30**	15
Engaged in more generalized professional development or training activities	74	70	69
Peer Observation or Mentoring	44	48	48
No additional training or preparation	18	11*	19
Other	17	20	15
Independent Study for at-risk instruction	84	92**	85

\*p≤.10, \*\*p≤.05

**Table 8B – Teacher Professional Development Training for Underperforming Students**

Does AIS instruction in this department/team, typically have students...	Mean Response (% Yes)						
	Mean Response for ALL teachers	Mean for Teachers in NYC	Mean for Teachers in Big Four	Mean for Teachers in High Need Urban/Suburban	Mean for Teachers in High Need Rural	Mean for Teachers in Average Need	Mean for Teachers in Low Need
Attended Workshops or conferences for instruction	72	84*	82	68	63*	69	67
Earned additional certification in Special Education, Reading, etc	28	36	22	17	28	24	21
Engaged in more generalized professional development or training activities	74	88*	90	75	66*	66*	74
Peer Observation or Mentoring	44	51	74	45	37	42	51
No additional training or preparation	18	18	20	18	18	19	16
Other	17	19	20	18	11	18	16
Independent Study for at-risk instruction	84	77	90	85	86	87	82

\*p≤.10, \*\*p≤.05

Table 9 - Logistic Regression Estimates of English AIS Scheduling Options (Values are Odds Ratios)

English AIS	Bef/After School Hrs	In Place of Electives	Study Hall	Academic Lab	In Addition to Reg Class	Instead of Regular Class	During Regular Class	Outside of Regular Class
z 8th ELA '99	0.95	0.85	1.52 *	1.36 ^	0.96	1.57 *	1.63 *	0.89
z Change ELA '99-'03	1.65 ^	1.05	1.31	1.14	1.10	1.22	1.12	1.23
Enrollment/100	1.01 *	1.00	1.00 *	1.00	1.00	1.00	1.00	1.00
z %FRPL	1.02	1.07	1.73 ^	1.30	2.21 *	1.13	1.20	1.77 ^
Property \$/Tapu	1.00	1.01	1.00	1.00	1.00	0.99	1.01 ^	1.00
Income \$/Tapu	1.00	1.01	0.97	1.03	0.99	1.04	1.00	1.02
NYC <sup>s</sup>	7.26	0.37	0.38	0.17 *	0.08 *	2.59	2.48	0.19 *
Big Four	2.84	0.20 ^	0.28	0.56	0.02 *	0.59	4.02	0.32 ^
Small City	2.61 ^	1.47	0.82	1.36	0.39 ^	1.50	2.07	0.92
Suburban	1.19	1.84	0.87	1.19	0.69	1.34	1.06	1.49
Teacher <sup>&amp;</sup>	0.74	0.65 *	1.38	0.68 ^	1.00	1.48	1.54 *	0.78

n=494 (minimum; includes principals and English teachers)

Table 10 - Logistic Regression Estimates of English AIS Scheduling Options (Values are Odds Ratios)

Mathematics AIS	Bef/After School Hrs	In Place of Electives	Study Hall	Academic Lab	In Addition to Reg Class	Instead of Regular Class	During Regular Class	Outside of Regular Class
z 8th ELA '99	1.24	1.13	1.15	1.01	1.08	1.05	1.22	0.94
z Change ELA '99-'03	1.15	1.33	1.04	1.03	1.01	1.19	0.96	1.02
Enrollment/100	1.01 ^	1.00	1.00	1.00 *	1.00	1.00	1.00	1.00
z %FRPL	1.22	1.69	1.50	0.83	1.56	1.14	0.79	1.18
Property \$/Tapu	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Income \$/Tapu	1.00	1.01	0.98	1.01	0.98	1.04	1.01	1.00
NYC <sup>s</sup>	6.01	0.29	0.08 *	0.20 ^	0.11 ^	1.91	5.07 ^	0.31
Big Four	0.57	0.23	0.14 *	0.25 ^	0.06 *	0.00	5.17 *	0.37
Small City	1.42	1.48	0.53	1.09	0.43	1.50	1.85	0.48 *
Suburban	0.85	1.84	0.73	1.01	0.71	1.22	1.12	0.76
Teacher <sup>&amp;</sup>	0.77	0.68 ^	1.43 ^	0.62 *	1.23	1.90 ^	0.68 ^	0.38 *

n=476 (minimum; includes principals and mathematics teachers)

\* p= .05, ^ p= .10

z = Standardized Values

\$ = Wealth

& Comparison group is principals

\$ Comparison group for all urbanities is rural

The Implementation of Academic Intervention Services in New York State

Table 11 - Ordinal Logit Regression Models (Odds Ratios) for Instruction

S3Q9_A	% Time Instruct Whole Class	% Time Instruct Individuals	% Time Instruct Small Groups	% Time Maintaining Order	How Often Teacher Led Discussion	How Often Student Led Discussion	Instruct Test-Taking Strategies (Y/N)
z 8th ELA '99	1.47 ^	0.83	1.18	0.61 *	1.37 ^	0.90	1.07
z Change ELA 99-03	0.95	1.13	1.30	0.56 *	0.64 *	0.85	1.03
Dist Enrollment/100	1.00	1.00 ^	1.00	1.00 *	0.99 *	1.00	1.00
z %FRPL	1.53	0.96	1.11	0.23 *	0.73	0.95	0.79
Property \$/Tapu	0.99 *	1.00 *	1.00	1.00	1.00 *	1.00	1.01
Income \$/Tapu	0.97	1.00	1.02	0.94 ^	0.99	1.03 *	1.05
NYC <sup>§</sup>	0.19 *	0.49	2.03	45.96 *	16.76 *	0.94	0.77
Big Four	0.69	0.89	1.70	19.99 *	12.44 *	1.61	2.42
Small City	1.00	1.12	0.47 *	1.57	1.19	0.64 ^	0.73
Suburban	1.69	0.98	0.42 *	0.76	0.90	0.66	0.88
English Teacher <sup>&amp;</sup>	1.06	1.36 ^	1.61 *	1.43 ^	0.89	1.69 *	2.05 *
Responsible for AIS	0.67	1.50 ^	1.28	0.60	1.14	1.64 *	3.31 *
Class Size	1.03 ^	0.94 *	0.97 ^	1.03	1.03 *	1.00	0.96
% AIS Students in class	0.90	1.60	2.13 *	4.18 *	1.23	0.75	0.67

\* p? .05, ^ p? .10

n(minimum)=454 teachers, unweighted

z = Standardized Values

\$ = Wealth

& Comparison group is Mathematics Teachers

§ Comparison group for all urbanities is Rural

Table 12 - Ordinal Logit Regression Models for Prevalence of Instructional Planning

	Within Department	Across Grade Levels	Across Buildings
z 8th ELA '99	0.93	0.95	1.07
z Change ELA 99-03	0.95	0.94	0.95
Dist Enrollment/100	1.00 ^	1.00	1.00
z %FRPL	0.92	1.09	1.30
Property \$/Tapu	1.00	1.00	1.00
Income \$/Tapu	0.95 *	1.02	1.03
NYC <sup>§</sup>	4.49 *	2.56	1.19
Big Four	3.72 *	3.25	0.59
Small City	1.48	1.74 *	0.96
Suburban	1.53	1.49 ^	1.05
English Teacher <sup>&amp;</sup>	0.97	1.47 *	1.56 *
Responsible for AIS	1.74 *	1.34	1.26
Class Size	1.00	1.01	1.00
% AIS Students in class	0.98	0.79	1.00

\* p= .05, ^ p= .10

n(minimum)=456 teachers, unweighted

z = Standardized Values

§ = Wealth

& Comparison group is Mathematics Teachers

§ Comparison group for all urbanities is Rural