EDUCATION POLICY ANALYSIS ARCHIVES

Mandating Supplemental Intervention Services: Is New York State Doing Enough to Help All Students Succeed?

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Abstract
As states have become more active in establishing curriculum content standards and related assessments disappointingly little attention has been paid to policy efforts that create learning opportunities for students to meet the new standards. This study examines one state policy designed to bolster the opportunity to learn by mandating additional instruction for students not currently achieving proficiency in the state standards. The results focus on a detailed description of New York State's Academic Intervention Services, including its organizational and instructional elements (e.g., staffing, scheduling, student grouping, instructional strategies) across NYS schools. While the majority of states have established curriculum frameworks and linked them to assessment instruments, this experience in NY may be unique for its coordinated emphasis on intervention services (academic and non-academic) linked to rigorous learning and accountability standards. However, the caveats identified in this study promote a familiar sense of local discretion in the interpretation and implementation of state policy mandates. The analyses describe how

such practices vary by local district context, such as community wealth and geography, and if those practices have equity implications. The primary analyses draw on survey data from a stratified random sample of 764 teachers and principals from 125 school districts, and feature multi-variate methods with proper adjustment for the clustering of responses within districts (i.e., multiple teachers and administrators within each district).

Introduction[1]

As states have become more active in establishing curriculum content standards and related assessments (Skinner & Staresina, 2004), disappointingly little attention has been paid to policy efforts that create learning opportunities for students to meet the new standards (Wilson, 2004). The identification and proliferation of state curricula and state assessment systems are notable, and yet by themselves do little to ensure improved or additional learning opportunities for low achieving students. This study examines one state policy designed to bolster the opportunity to learn by mandating additional instruction for students not currently achieving proficiency in the state standards. In an attempt to ensure a bridge between the mandated curriculum content standards and multiple state examinations, New York State implemented a policy in 2000 calling for the provision of Academic Intervention Services (AIS) to every student achieving at levels less than proficient.

> Academic intervention services (AIS) are services designed to help students achieve the learning standards in English language arts and mathematics in grades K-12 and social studies and science in grades 4-12. These services include two components: 1) additional instruction that supplements the general curriculum (regular classroom instruction); and/or 2) student support services needed to address barriers to improved academic performance. (NYS Commissioner's Regulations, Part 100.1(g))[2]

A primary focus of this study entails a detailed description of AIS programming including its organizational and instructional elements (e.g., staffing, scheduling, student grouping, instructional strategies). We also analyze how such practices vary by local district context, such as community wealth and geography, to assess the equity implications of consistent or varied policy response. To accomplish these goals, we draw on survey and archival data from a stratified random sample of 764 teachers and principals from 125 school districts. The sample of districts was drawn from the universe of school districts with high schools and includes the largest urban districts in the state as well as a representative sample of suburban and rural districts (See Table 1). Analyses include bivariate and multi-variate methods with proper

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[2] Available at http://www.emsc.nysed.gov/part100/pages/1002i.html

adjustment for the clustering of responses within districts (i.e., multiple teachers and administrators within each district).

Context

Background in New York State

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 additional resources to improve their performance. Regulations mandate a new enrichment approach to provide additional instruction to students in grades K-12 who needed extra time and help to meet state learning standards. This strategy replaces the earlier reliance on later-grade remedial instruction. State policy mandates included specific guidelines for AIS implementation. For example, regulations now require students to receive services within one academic semester of identification. Eligibility for AIS services should be based upon multiple measures of student performance, including grades, test scores, and recommendations of teachers and parents. SED guidelines also suggested strategies to vary the intensity of the intervention, including ideas about scheduling, duration, and the level of student-teacher individualization[3].

AIS policy and practice represents an attempt to promote policy coherence between curriculum, instructional, and assessment policies. AIS programming may be conceptualized as a bridge between the curriculum and assessment programs, an alternative and supplemental instructional program that targets poorly performing students. The AIS guidelines encouraged schools to generate additional instruction activity to meet student deficits. The policy guidelines, however, did not require explicit 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. The specificity of the guidelines was more focused on identification criteria, as described above. This measured approach between policy prescription and encouragement of local innovation coincided with the dramatic change in learning and graduation standards in New York State.

Specifically, the State Board of Regents adopted new Learning and Graduation standards for all public schools in New York State, and began implementing the new standards in 2000. Briefly, the reform requires all students seeking a high school diploma to earn a state-endorsed Regents Diploma. While in practice for more than 100 years, the Regents courses, exams, and diplomas are only now mandated for all students. Heretofore, less than one-half of all high school graduates earned a state-endorsed diploma, with the majority earning a diploma meeting local school district standards.

Related Literature

This study of AIS implementation is timely given the long history of school systems avoiding or reinterpreting policy prescriptions from state agencies (Tyack & Cuban, 1995;

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[3] 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 (available at http://www.emsc.nysed.gov/docs/AISQAweb.pdf).

Tyack & Tobin, 1994). As a framework for this study, we introduce the literature on policy coherence, policy adherence, and instructional capacity. These terms provide a lens with which to understand this investigation into the implementation of state AIS policy. As a policy designed to build instructional capacity to assist low-performing students in achieving state curriculum and accountability standards, we posit that AIS represents an attempt to promote policy coherence between curricular, instructional, and accountability policies. Moreover, AIS policy is designed to bolster capacity by fiat (i.e., state regulation), the result of which is to add instruction services for students most in need.

The notion of policy coherence received much attention in the early 1990s and continues today (Fuhrman, 1993; Wilson, 2004b). Researchers, policymakers, and practitioners continually attempt to understand, explain, and alter the many ways in which schools function in light of the multiple and often contradictory policy messages (Chrispeels, 1997; McLaughlin & Talbert, 1993; Smith & O'Day, 1990a; Spillane & Jennings, 1997). One argument to gain support for increased coherence was that various and often disconnected strains of local, state, and federal policy left local educators with choices as to which policies to adopt, which to change, and which to ignore (Cuban, 1998; Tyack & Cuban, 1995). Hence, to generate consistent, equitable, and widespread educational change, it was suggested that designing tighter coherence among policies within and between different policy levels is possible and desirable (Clune, 2001; Smith & O'Day, 1990b). Wilson (2004a) argues for the integration of assessments, curriculum frameworks, and classroom instructional methods from the level of the classroom to the highest levels of state and policy. What would constitute evidence of policy coherence at the district level? A measure of coherence would be the degree to which individuals within and across districts adhere to the specific policy guidelines outlined by the State. Moss (2004) terms this *coherence-through-alignment*.

While much effort has been devoted to aligning local curriculum and instruction with state curriculum framework and assessment systems, others argue that such coherence is not without risk (Moss, 2004). Moss questions the virtue of tightly aligned local and state policies given the wide variety of local contexts, offering instead a *coherence-through-negotiation-of-meaning* argument:

> Negotiation of meaning can result in alignment and alignment can encourage negotiation of meaning such that local actors come to 'own' the concepts provided in the assessment system. (p. 219)

Thus an alternative conception of policy coherence may not only be the alignment of practice across levels of the system, but may be interpreted as teachers understanding, taking ownership, and adapting the state-promoted instructional, curricular, and accountability practices to local student need. It remains to be seen whether the interpretation of policies differ randomly or systematically by context (e.g., geography, wealth, performance).

The literature on policy coherence and adherence points to several opportunities that could stimulate variation in local implementation of state policy. First, if the policy scripts are too loose, districts may elect to interpret the policy guidance in a wide variety of ways; this may result in potentially superficial responses or basic discontinuity in a child's academic program. Second, if the policy is grounded within a conceptual framework and aligned with complementary policies, local interpretation may be more constrained. A third perspective emphasizes the role of organizational capacity in the implementation of state policy.

This study supports the now prevalent reform discourse suggesting that organizational capacity, which includes teacher's professional knowledge and skills, financial resources, and effective leadership at the district and building levels, is important for increasing the organization's ability for delivering high-quality instruction (Corcoran & Goertz, 1995; Darling-Hammond, 1993; Galvin, 2001; McDonnell & Elmore, 1987; O'Day, Goertz, & Floden, 1995). The existing research on capacity tends to stress how policy may stimulate or introduce capacity-building activities at the building level. Hightower's (2002) case study of instructional reform within the San Diego City School District is illustrative of this. Here, the research points to the reform of capacity-building efforts such as developing school principals as instructional leaders, the hiring of school based instructional leaders (peer coaches) and staff developers, and the redirection and alignment of state and federal funding streams. Beyond the building level though, very little is known about capacity-building activities across intermediary educational organizations (Massel & Goertz, 2002). Here, the question addresses the role and emphasis of state, regional, district, and building level perspectives. Massel and Goertz also argue that as policy makers attempt to align state instructional policy to provide more coherent guidance for classroom teachers in support of ambitious learning outcomes, district response to these initiatives must be taken into account. Others such as Firestone (1989) emphasize that the measurement of "a will to change" at the district level, interacting with a district's capacity to change, leads to substantial change within the district.

In terms of local capacity to meet the academic needs of all students, how do school districts use the additional regulatory and fiscal incentives associated with heightened educational standards? Researchers have documented a variety of strategies districts use to increase the instructional capacity of schools. Providing and controlling access to data, professional development, curriculum and instructional guidance, qualified staff, and fostering relationships with external agents and networks are some of the strategies used by districts (Galvin, 2001; Massell & Goertz, 2002; Spillane, 1996). Our own work in New York State documents a variety of capacity building activities that emerged or substantially changed with the heightened learning and graduation standards, including academic interventions, teacher professional development, staffing changes, and the availability of alternative student outcomes (e.g., dropout, GED, alternative education programs) (Sipple, Killeen, & Monk, 2004). Additional recent work documents how a broad range of capacity building activities at the district level are associated with local community characteristics, in ways that appear to disenfranchise children in impoverished schools (Sipple & Killeen, 2004). In this work we control for geographic, wealth, and spending factors among NYS districts, and find that educators in districts serving high concentrations of poor children are likely to report increases in alternatives to a college preparatory diploma (the Regents diploma), including transfers to GED and alternative education programs.

Research Questions

This article draws on new statewide survey data to answer three main questions:
A. Policy Coherence. How do AIS implementation practices (i.e., organization and instruction) vary across the state?
B. Policy Adherence. How well do district level implementation practices match the AIS policy guidelines outlined by the state?

C.   Capacity to Adhere. How well do districts possess the capacity to meet the AIS policy guidelines?

These questions fall short of asking whether academic intervention services improve student achievement to proficiency levels, whether the policy is cost effective, or even just. Viewed through a lens of policy evaluation, and until sufficient data exist to assess changes in performance, important questions now must focus on descriptive accounts of policy implementation, organizational and instructional responses, as well as coherence and adherence at the local level.

Data and Methods

Our analyses will 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.

Survey Development

Over the course of day-long site visits to four school districts in the fall of 2002, we conducted 45 interviews with approximately 90 principals, regular education teachers, AIS teachers and guidance counselors. We had previously visited these districts on several occasions during the preceding two years as part of our attempt to carefully document the district responses to and implementation of the broader set of new state requirements. During the 2000-2001 school year we interviewed more than 120 educators and community leaders and report these findings elsewhere (Sipple, Killeen, & Monk, 2004). The more recent wave of interviews specifically targeted 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 designed to alleviate obstacles to academic success.

Based on the findings from the qualitative interviews, we designed principal and teacher survey instruments. 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 issues. Surveys 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.[4]

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[4] "The Survey Research Institute (SRI) is a full-service survey research facility at Cornell University. The primary mission of SRI it 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

In order to measure common 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. While many other measures of instruction could have been used, the NELS measures serve our purpose of reliably, measuring whether basic instructional strategies differ between AIS and non-AIS teachers.

Sampling

The principal goal of our sampling strategy was to balance a representative selection of districts (as well as the population of students the districts represent) against a need to represent wealthy and poor, urban, suburban, and rural communities. 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 80 middle schools) in these districts. We then surveyed the principal in each school. To provide an in-depth documentation of AIS in classrooms, we then chose a subset of these districts (70) to survey more than 500 teachers in grades 7-12, 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, in which case we would select all the English and mathematics teachers. These 246 administrators and 500 teachers give us an overall picture of AIS.

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 638 non-Big Five school districts with high schools, 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.

School Level

We selected both high school and middle school principals to interview. In NYC, we randomly selected 45 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.

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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)

With regard to the Big Four, 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.[5] Thus we dropped two principal interviews already collected from this district and did not collect any teacher data from this district.

From the remaining school districts with high schools in the state, we selected one high school from each of the 116 selected districts. If there was more than one high school in the district, the high school was randomly selected (fewer than 10% of these districts have more than one high school). 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.

Teacher Level

Our initial sampling approach assumed that the 2001-2002 NYS Personnel Master File[6] 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 asked 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.

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[5] Per our human subjects agreement with each district, the name of the non-participating district will remain confidential.

[6] The Personnel Master File is part of the Basic Educational Data System, update annually with survey data collected every October from every teacher and administrator in the state.

Table 1
Summary of Sampling Strategy for Data Collection

	# Districts	# Schools/ Principals	Teachers (Schools)
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*
Total	140	253	**511(60)**

Weighting

Depending on the policy question posed, it may be more valuable to understand the proportion of districts engaging in a particular practice, or possibly 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 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 by 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 responses from principals only:

- 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
- 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 bi-variate 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 (1999-2003) of district performance and demographic data 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 publicly available 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.[7]

Multivariate Approaches

In order to effectively describe AIS practices and test for substantive differences across districts, we selected methods that would inform discussions of key AIS practices and the likelihood of their implementation given various contexts. The nested nature of the data (multiple teachers within districts) requires techniques other than ordinary least squares (OLS) regression models. Most of our regression models use either binary or categorical dependent variables as we tried to predict differences across contexts with specific AIS strategies. These robust regression estimates adjust the standard errors found in the correlated residuals

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[7] See http://www.emsc.nysed.gov/irts/655report/home.html and http://www.emsc.nysed.gov/irts/reportcard/home.html for the publicly available data.

stemming from the nested structure of the data (e.g., individuals within districts).[8] Doing so properly accounts for the district-effect on the participants' responses.

To serve as indicators of school district performance, we selected 8th 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 8th ELA performance over time has a mean of zero and one 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 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 (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 (e.g., an odds ratios of .50 would indicate that the practice is only 50% as likely to be used as the comparison group).

Findings

We report our findings in four steps. We begin with simple descriptive (univariate and bi-variate) measures of organizational/structural strategies followed by instructional strategies and priorities. We then report multi-variate regression results for the organizational/structural strategies and then for instructional strategies.

AIS Organizational/Structural Arrangements

Student Assignment
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.

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[8] We used xtlogit and ologit in Stata to conduct logistic regression analyses while adjusting for the effect of clustered responses.

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) is more 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 4th 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 noted:

> 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? Report cards, tests, and the recommendation of the guidance counselor are most salient in terminating AIS services for students. 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 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 non-NYC districts. For example, the average involvement score for student participation in the AIS programming process was a 2.08 among upstate districts. 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.

Enrollment

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, 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.

Staffing

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 approachThis 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."

Scheduling

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 below 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)
Model 2.   AIS held during classtime, outside the regular classroom
         (Characterized as self-contained, pull-out)
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 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 specific AIS class 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 (and 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 statistical difference 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 regular education or in addition to regular education classes. Prior case study research couched these differences as either supplementary (an additive program service) or supplanting (a replacement program service) (see Sipple, Killeen, and Monk, 2004). As was the case in this prior research, a number of districts representing a large proportion of children do report that AIS programs are being substituted for regular education classes. For example, principals representing 13% of districts offer English AIS instead of regular classes. 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[9]. 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 ($r = -.14$; $p \leq .05$). This type of modest association is consistent for subject areas like English and

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[9] 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.

mathematics. In the sciences, however, the strength and frequency of the item associations increase, again likely due to the inability to fit additional sections of AIS into the regular school day.

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 to be 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.

Instruction

Our focus on AIS classroom instruction hinges on whether instructional strategies in AIS classes differ from those found in regular subject area classes. The survey asked teachers to focus on one particular class they taught during the week. 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.

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%).

The typical 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. 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

Table 2
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%
		Std. Dev.	*7.9*	*10.6*	
	No	Mean	27.3	3.5	13.8%
		Std. Dev.	*6.2*	*6.0*	
	Total	Mean	25.9	6.3	28.7%
		Std. Dev.	*7.0*	*8.9*	
Big Four	Yes	Mean	24.0	15.4	65.6%
		Std. Dev.	*9.3*	*12.1*	
	No	Mean	25.6	5.6	18.9%
		Std. Dev.	*12.2*	*16.4*	
	Total	Mean	24.8	10.8	43.7%
		Std. Dev.	*8.5*	*11.8*	
High Need Urb/Sub	Yes	Mean	14.7	9.2	77.2%
		Std. Dev.	*8.0*	*6.1*	
	No	Mean	21.2	4.4	21.0%
		Std. Dev.	*4.6*	*6.3*	
	Total	Mean	18.9	6.0	40.2%
		Std. Dev.	*6.6*	*6.6*	
High Need Rural	Yes	Mean	11.6	7.7	80.4%
		Std. Dev.	*7.4*	*4.5*	
	No	Mean	18.0	3.0	16.6%
		Std. Dev.	*5.1*	*3.9*	
	Total	Mean	16.4	4.2	31.9%
		Std. Dev.	*6.3*	*4.5*	
Ave Need	Yes	Mean	16.3	8.7	69.4%
		Std. Dev.	*9.4*	*5.9*	
	No	Mean	21.6	2.7	13.3%
		Std. Dev.	*5.1*	*3.0*	
	Total	Mean	19.8	4.8	33.0%
		Std. Dev.	*7.3*	*5.1*	
Low Need	Yes	Mean	17.1	9.8	66.3%
		Std. Dev.	*9.1*	*8.9*	
	No	Mean	22.6	1.5	7.6%
		Std. Dev.	*5.4*	*3.5*	
	Total	Mean	21.3	3.5	21.4%
		Std. Dev.	*6.7*	*6.2*	
Total	Yes	Mean	16.0	9.7	73.5%
		Std. Dev.	*8.9*	*7.1*	
	No	Mean	21.6	3.0	14.4%
		Std. Dev.	*6.1*	*4.4*	
	Total	Mean	20.0	4.9	31.5%
		Std. Dev.	*7.5*	*6.1*	

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.

Comparing classes taught by a teacher responsible for providing AIS instruction versus those who are not responsible, the class makeup is quite different (see Table 2). Class sizes are consistently smaller for teachers responsible for AIS instruction (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.

Modal Model 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 3). 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.

Teachers were also asked more specific questions about how often they use more detailed teaching methods and instructional media (see Table 4). 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. AIS teachers distinguish themselves from non-AIS teachers through their utilization of small group interactions with students (see Table 3). 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 (see Table 5).

Table 3

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	Mean for ALL teachers	Scale Distribution as Percentage of all Teachers					Mean for Teachers Responsible for AIS	Mean for Teachers NOT Responsible for AIS
		>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 4. 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 ALL teachers	Never /rarely	1-2x/month	1-2x/week	Almost everyday	everyday	Mean for Teachers Responsible for AIS instruction	Mean for Teachers NOT Responsible for AIS instruction
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	2.45	6.1	17.0	29.3	21.8	25.9	2.44	2.32
Have students complete individual written assignments or worksheets in class	2.36	6.2	6.2	32.2	30.1	25.3	**2.62	2.33
Have students give oral reports	.75	58.5	27.2	10.2	2.0	2.0	0.62	0.66

*p≤.10, **p≤.05

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Table 5
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

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

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 certain instances. For example, AIS English teachers reported requiring students to read novels, plays, essays, etc. less often than non-AIS English teachers (see Table 6). 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 life. 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 AIS vs. non-AIS classrooms (see Table 7). 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."

Multivariate Analyses of AIS Programming

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 are 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 AIS regulation. In this study, we focus on three sets of AIS-related practices: scheduling, elements of instruction, and teacher planning for AIS.

Table 6
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?	Mean for All ENGLISH Teachers	Very rarely	1-2x/month	Once a week	2-3x/week	everyday	Mean for Teachers Responsible for AIS instruction	Mean for Teachers NOT Responsible for AIS instruction
Response 1 2 3 4 5 / 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$\leq$.10, **p$\leq$.05

Table 7
Descriptive Statistics for Mathematics Teacher Instruction

How much emphasis do you give to each of the following objectives?	Response 1 2 3 4 None Minor Moderate Major					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

Scheduling

We first examine the contextual differences associated with (though 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 questions are important to answer: 1) Is AIS scheduled before and/or after regular school hours? 2) Are students missing electives or using study halls to 'fit in' AIS class time? 3) 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?

We have substantial qualitative evidence from principals and 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., before or after school hours or voluntary in-school drop-centers) many students do not attend the designated AIS sessions.

The regression findings suggestthat while the absolute level of performance prior to implementation of AIS is unrelated to the availability of before or after school scheduling options, district change in performance over time (8th 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.

Table 8 - 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 *	1.22	0.89
z Change ELA '99-'03	1.65 ^	1.05	1.31	1.14	1.10	1.22	0.96	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 $/Tapu	1.00	1.01	0.97	1.03	0.99	1.04	1.00	1.02
NYC$	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^&	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 9 - Logistic Regression Estimates of Mathematics 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 $/Tapu	1.00	1.01	0.98	1.01	0.98	1.04	1.01	1.00
NYC$	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^&	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^2 .05, ^ p^2 .10

z = Standardized Values

$ = Wealth

& Comparison group is principals

$ Comparison group for all urbanicities is rural

Table 10 - Ordinal Logit Regression Models 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 $/Tapu	0.97	1.00	1.02	0.94 ^	0.99	1.03 *	1.05
NYC$	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&	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^2 .05, ^ p^2 .10
n(minimum)=454 teachers, unweighted
z = Standardized Values
$ = Wealth
& Comparison group is Mathematics Teachers
$ Comparison group for all urbanicities is Rural

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 urban or rural areas. Further investigation should attempt to determine if this is because of the reduced reliance of before and after school options in the suburban districts, and hence greater pressure placed on student schedules, than in districts where before and after school times are used for AIS.

Once controlling for urbanicity, greater proportions of poor children are strongly related to using study halls for English AIS services. 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 8th 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.

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 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), 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.

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.

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 10). Teachers with AIS responsibilities for a particular class are more than three times as likely to teach test-taking strategies.

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. Having a high concentration 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 when compared with their non-AIS teacher colleagues.

Discussion and Conclusion

This case from New York State addresses the question of whether state activism can focus local district policy and program in a manner that increases instructional resources on under-performing students. With some caveats, the AIS policy mandate has encouraged local districts to adhere to guidelines promoting near universal policy response of providing supplemental instruction for eligible students. While the majority of states have established curriculum frameworks and linked them to assessment instruments, this experience in NY may be unique for its coordinated emphasis on intervention services (academic and non-academic) linked to rigorous learning and accountability standards. However, the caveats identified in this

study promote a familiar sense of local discretion in the interpretation and implementation of state policy mandates. While the primary focus in the prior sections entailed a detailed description of AIS programming across NYS, including its structural elements as well as instructional interventions, in this section we review whether the implementation practices were coherent in the development of new instructional capacity and in adhering to state regulation. Prior to addressing whether AIS leads under-performing children to achieve high standards, we ask whether the policy itself is coherent enough to generate appropriate instructional capacity to motivate such learning.

Coherence and Adherence

We found, generally, that current AIS practices within districts adhere to the general criteria established in the Commissioner's Regulations of NYS, and as further delineated by the Administrative Guidelines disseminated by the State Education Department. Table 11 summarizes the degree to which local practice is adhering to state policy. Overall this discussion identifies two rather interesting findings. First, implied in the discussion is the observation that nearly all schools can demonstrate a high degree of compliance with the AIS guidelines that were enacted in the fall of 2000. This diffusion of practice has appeared rather quickly, which contrasts with frequent critiques of public schools as stable and slow to change (Cuban, 1983; Tyack & Cuban, 1995). Second, the AIS policy has stimulated new organizational and instructional arrangements within schools. The result of such change being greater individualized instruction for students performing below accepted performance levels. Taken together, these two points indicate a great degree of policy adherence by schools across the State.

Specifically, AIS practice across the State indicates compliance with the following general criteria: additional instructional attention to children scoring below accepted performance levels; AIS instruction provided by certified staff; multiple measures of performance used to determine eligibility; wide variation in scheduling options provided by schools. However, there exists some variation in practice around these general criteria that indicates the State guidance is sufficiently broad as to allow for local discretion and interpretation. This may offer support what Moss (2004) describes as *coherence-through-negotiation*, local interpretation, and adaptation of the state policy to meet local needs.

There are several salient examples of local interpretation of the AIS guidelines. For one, the State requires that AIS teachers be licensed to teach the AIS subjects they supervise. The survey respondents, however, indicate that more than half of all districts rely on special education staff to provide AIS instruction. Special educators are often certified in both subject area specialties and in special education, but not always. They are generally skilled at serving students through consulting teacher or inclusionary instructional models, and thus may be interpreted at the local level as best able to provide AIS instruction despite the intent of the regulations. At a quick glance, this could be simple non-compliance; however, the tone of the policy deviation may also signal a simple call of professional judgment. For instance, the policy implies that teachers with additional subject area expertise (certified in the academic subject area of concern) are best suited to provide additional AIS instruction, while this local response pattern may reflect an interpretation that expertise in special education services is better suited for intervention services. This "non-compliance" can be viewed two ways. This might be interpreted as local educators rejecting state policy, and hence not adhering to a regulation that

seems inconsistent with a policy that calls for improving the learning of each student. Conversely, viewed through Moss's coherence-through-negotiation lens, such practice may reflect valuable local variation in response and policy coherence. Local educators may size up the individual needs of students, make adjustments to staffing and programs, and provide what they deem as appropriate supplemental instruction to students in need. Determining which of these interpretations is more appropriate is beyond the scope of our data, but we suggest any interpretation of policy coherence and implementation should include such debate.

A different indicator of a lack of adherence to the state policy is the finding that some students eligible for AIS services are not receiving them. A common response among school principals following open ended survey questions was the statement that they wished their AIS program could serve all students that score a level 2 on a state examination. This finding is supported by their observation that 5-15% of children eligible to receive services don't, for reasons of scheduling constraints, resources, absenteeism, and lack of student interest. Clearly the intent of the AIS regulations is that students scoring below an acceptable performance level should receive AIS programming. Given the clear indicator of who is eligible it may seem like a clear case of a lack of interest in complying or an inability to comply. One plausible explanation for the lack of strict compliance is that the guidelines state that students scoring below the level of proficiency (Level 3 on the comprehensive assessments) are "eligible" to receive AIS programming. In negotiating local response to the AIS mandate, the use of the word eligible may connote an opportunity to negotiate how many level 1 and level 2 students will be served in any given district. Of course, issues such as meeting the needs of all eligible students can go beyond interest in compliance, and bump up against capacity constraints of any given district.

Table 11

Alignment of AIS Policy Mandates and Implementation Practice in New York State

Policy Area	Policy Origination AIS Reg. 100.2 (ee)	Policy Guidance State Department of Education Guidelines	Policy Implementation AIS Implementation Characteristics-Study
Eligibility criteria for students to receive AIS	"Schools **shall provide** AIS when students…score below the state designated performance level on one or more of the State…assessments."	"Each year the elementary and intermediate State assessments will have four designated performance levels on each assessment. All students who score below level 3 (in levels 1 and 2) **are eligible** to receive academic intervention services" and "Districts should assure that multiple assessments/sources of evidence are used" to determine eligibility.	Assessment scores, report cards, and guidance counselor recommendations are used heavily to determine AIS eligibility. Student behavior, attendance and parent recommendations less influential in the decision process. Evidence signals that districts serving a large number of AIS students struggle to provide AIS services for students scoring level 2 on benchmark examinations.
Scope of students served	No specific guidance offered.	"A school district has the authority and responsibility to place students in appropriate academic programs during the regular school day. Thus, a district may place students in academic intervention services as part of their academic program."	Far more students in the largest urban centers are served in AIS programs, than in non-urban districts; 15% of NYC students qualify for AIS but do not receive services, compared with 6% in non-big five districts.
AIS Scheduling	"(i) School districts may use time available for academic intervention instructional and/or student support services during the regular school day. (ii) School districts may provide students with extended academic time beyond the regular school day and school year."	"The district and schools should include as many scheduling options as are necessary to meet the range of student needs in the district." And, "specific interventions should be provided beyond general instruction in the course."	AIS programs exist in nearly all NYS schools for English and math courses, and in almost 75% of schools for social studies and science. Many scheduling models exist that include inclusionary and self-contained AIS models as well as AIS in lieu of electives or outside of regular school hours.

Table 11 (Continued)
Alignment of AIS Policy Mandates and Implementation Practice in New York State

AIS Staffing	In public schools, academic intervention instructional and/or support services shall be provided by qualified staff who are appropriately certified.	"Districts must use staff to provide academic intervention services who are appropriately certified under Part 80 of the Commissioner's Regulations for the area(s) of their instructional assignment, i.e., reading, English language arts, mathematics, social studies, or science, or for the area of their student support service assignment, i.e., pupil personnel services."	Multifaceted staffing patterns exist at the local level. More than 55% of principals in all districts report a designated teacher for AIS services. Over 60% of districts report using a special education teacher.
Individualized Instruction and Classroom Practice	No specific guidance offered.	"Additional instruction means the provision of extra time for focused instruction and/or increased student-teacher instructional contact time designed to help students achieve the learning standards in the standards areas requiring AIS."	In comparison with non-AIS classrooms, teachers of AIS classroom are more likely to teach test taking strategies, to instruct individual students and engage in student led classroom discussion.

Capacity

While the intent of the AIS policy is to generate enhanced local capacity to attend to the needs of underperforming students, the evidence also demonstrates how broader constructions of district capacity can impede this implementation. While all districts are being told they must provide supplemental services for all low-achieving students, the policy has a dramatic and differential impact within districts. Take for instance a 200-student high school with 25% of level 1 and 2 students. This school must provide supplemental instruction for 50 students. Large urban high schools with 2000 students and 50% of students below proficiency must provide supplemental services for 1,000 students.

The research literature on the district role in helping build instructional capacity highlights a set of strategies engaged by district that serve their component schools. Many of these strategies, such as providing schools with access to data, professional development, curriculum and instructional guidance, qualified staff, and fostering relationships with external agents and environment (Massell & Goertz, 2002; Spillane, 1996), may be unable to address some of the constraints we find in high need NYS schools. For instance, the scheduling of students into AIS classes appears to be untenable if half of all students require additional instruction in multiple subject areas all at the same time. Specifically, districts may be constrained in their ability to lengthen the school day, build more classrooms, and mandate that students stay after school or attend Saturday classes.

AIS policy was designed to bolster local instructional capacity by demanding the addition of supplemental instruction for students in need. This capacity is a key feature or nexus between the standard's based curriculum and assessment system. In this sense the State's AIS policy has enhanced local capacity.

However, as we have stated, this capacity varies dramatically as does the required response. Elsewhere, we document the importance of local context (e.g., location, size, wealth) and how contextual factors relate to levels of local capacity in meeting the new state Learning and graduation standards (Sipple & Killeen, 2004). We find that students in districts with a greater proportion of poor students are more likely to offer GED programs to their students, have teachers more likely to agree that a GED program enhances student learning, and more likely to have teachers teaching rote test taking skills. In short, context matters and hence it should not come as a surprise that context can constrain school districts' abilities to comply with state regulation. This is especially so when the regulation requires more than a report to be written, a core curriculum to be taught, or a set of exams to be administered. When a state demands increase in the amount of instruction, the district response is particularly constrained and the challenges are great.

Of course, the differential impact of state policy has the potential to raise significant equity concerns. This policy in NY State has accomplished much and time will tell how well the creation of mechanisms to generate supplemental instructional models in grades K-12 can reduce the need for remediation in later grades. However, it is also clear that the disproportionate impact of the policy on certain high need schools and districts create demands on students' and teachers' time that seemingly cannot be met with the current six hour school day, and the other demands on students schedules.

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