PROJECT AAIMS: ALGEBRA ASSESSMENT AND INSTRUCTION – MEETING STANDARDS
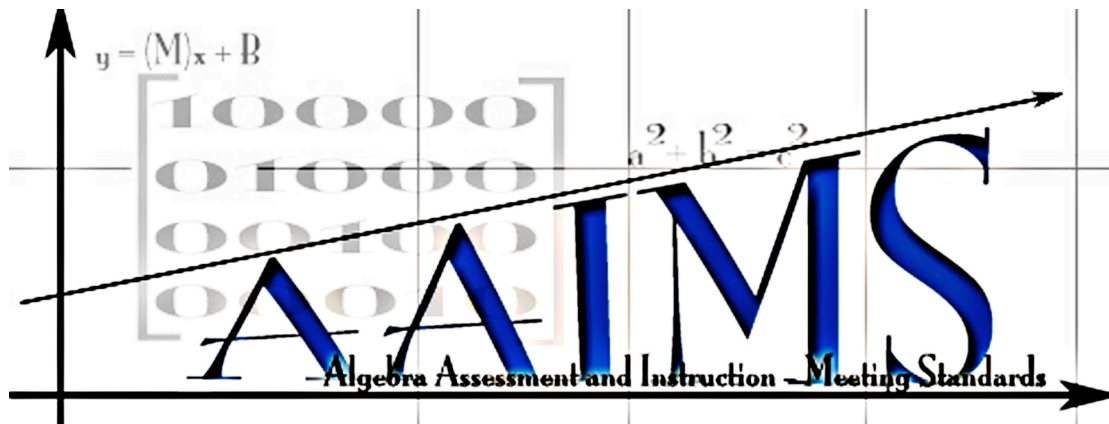

Classroom Observation Data for District B:

Momentary Time Sampling

Technical Report #4

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Executive Summary

This report documents the results of momentary time sampling observations conducted in District B during the fall of 2004. We summarize the results of eighteen classroom observations in six beginning algebra classes that included students with and without disabilities. It identifies typical student and teacher behaviors, as well as typical instructional organization patterns and task formats in a variety of beginning algebra classes in this district. In District B, there are two options for beginning algebra courses – Algebra I, which covers all the content for the course in one term, as well as Algebra IA and Algebra IB, which spreads the content over two terms. The participating teachers did not teach Algebra I during the terms when our observations were conducted; therefore, this report only includes data from observations in Algebra IA and IB. We describe some of the similarities and differences in algebra instruction for students with and without disabilities who were enrolled in Algebra IA or Algebra IB, in addition to reporting our findings about patterns of student behavior in each of these classes.

In Algebra IA, an equal percentage of class time was spent doing whole class activities and doing independent work. These classes also included almost equal amounts of paper and pencil tasks and lectures and discussions. More than half of the time Algebra IA teachers were engaged in academic talk or listening while most students displayed other appropriate behavior and some students actively responded by taking notes or answering questions.

In Algebra IB, more than half of the class time was spent doing whole class activities and most of the remaining time was devoted to independent work. Lecture or discussions were used more often than paper and pencil tasks in this course. Once again, academic talk or listening was the predominant behavior displayed by teachers with students displaying other appropriate behavior or active academic responses.

There were more differences in the behavior of general education and special education students in Algebra IA than in Algebra IB. The greatest differences occurred when students worked in small groups.

Overview

Access to general education curriculum has become a major emphasis in the education of students with disabilities since the 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA 1997). Access includes having meaningful participation in, and sufficient opportunities to make adequate progress toward, the district and state standards (Baker, Gersten, & Scanlon, 2002). Although this access does not necessarily require that instruction be delivered in general education settings by general education teachers, a growing proportion of students with disabilities are receiving a large proportion of their math instruction in this manner. One of the objectives of Project AAIMS is to examine the alignment of algebra curriculum, instruction, and assessment for students with and without disabilities. This report summarizes one portion of our efforts to further explore this issue.

To determine the extent to which algebra[1] instruction, curriculum, and assessment for students with disabilities is aligned with that of their non-disabled peers, the research activities imbedded in Project AAIMS included multiple means of gathering data. Two types of classroom observations were conducted concurrently. The first type used a systematic, momentary time sampling observation system, while the second type used an anecdotal observation form to document aspects of instruction that may not have been captured with the former system. In addition, interviews were conducted with teachers, administrators, and curriculum specialists to gather additional information about curriculum, instruction, and assessment at the district, building, and classroom level. Finally, school district documents related to instruction and assessment were reviewed as an additional source of information. Eventually, information from all of these sources will be integrated, and a case study of each of the three participating districts will be developed.

This report documents the results of the momentary time sampling observations conducted in District B during the fall of 2004. This is the second study of this type for the Project AAIMS research grant. Our intent was to address the following questions across the three districts participating in this grant project: 1) How often were specific student and teacher behaviors, instructional organization formats, and task types observed in general and special education algebra classes? 2) What types of student behaviors were typical in these classes? 3) What types of teacher behaviors were typical in these classes? 4) What types of instructional organization formats were typical in the observed algebra classes? 5) What type of task formats were typical in general education and special education algebra classrooms? and 6) How were these variables related to each other in the algebra classes that were observed? These questions worked well for District A since they have separate general education and special education algebra classes. This was not the case in District B or C, where all students with disabilities received their algebra instruction in general education classrooms. Consequently, the research questions were modified to apply to algebra classes as a whole instead of distinguishing between general education and special education algebra classes.

Method

Setting and Participants

Setting

District B serves a large town of slightly more than 25,000 people. The senior high school has an enrollment of approximately 1,230 students; about fifteen percent of these students receive special education services. Approximately 32 percent of the district's students are eligible for free and reduced lunch, and twelve percent are of diverse backgrounds in terms of race, culture, and ethnicity.

Six units of mathematics credits are required for graduation from District B; this is equivalent to three years of mathematics courses. An algebra class is not required for graduation; nevertheless, approximately 70% of District B's students take at least one algebra class before they graduate. At the time of this study, District B's high school offered two

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[1] Throughout this report any time we refer to algebra, we mean beginning algebra courses such as Algebra 1 or Pre-Algebra.

alternatives for initial algebra instruction. Students could choose between Algebra I or Algebra IA and Algebra IB. Since District B uses block scheduling,[2] students in Algebra I take one-half of an academic year to complete the course, and students in the IA/IB option can spread their algebra instruction over a full year; however, students are not required to take Algebra IA and Algebra IB consecutively. (In fact, some students never take Algebra IB after completing Algebra IA.) This slower pace is intended to allow students additional time to master the concepts of algebra. While the majority of general education students take Algebra I or IA in ninth grade, there were some 10th, 11th, and 12th grade students enrolled in the algebra classes we observed.

Participants

The participants included in this study included general education teachers, as well as general and special education students. Two teachers from District B consented to participate in this study. Students in these general education teachers' algebra classes were invited to participate in project activities. Parent and student consent were obtained for the use of individual scores and demographic information that were analyzed for other technical reports. However, since this report focuses on group data gathered during observations of public behavior, our observations were not limited to only those students for whom both parental and student consent were obtained.

Teachers. Of the two participating general education teachers, one held an initial Iowa teacher's license, and the other held a standard Iowa teacher's license. Both of these teachers held 7-12 mathematics endorsements and had earned Bachelor's degrees. One teacher was a first-year teacher, while the other had 15 years of teaching experience. The experienced general education teacher had taught algebra for seven years. (Two special education teachers were also part of the project; however, they did not teach stand alone algebra classes; so we have not included information about them in this particular study.)

General and Special Education Students. Student participants included youth in the ninth through twelfth grade who were currently enrolled in a beginning algebra course. Since neither of the participating teachers taught an Algebra I class during the semester these observations were conducted, this report only includes data from Algebra IA and Algebra IB classes. Ninety-nine students were enrolled in Algebra IA and 36 students were enrolled in Algebra IB. Of the 135 students taking algebra, about ten percent were special education students. All of the special education students received algebra instruction in general education classes.

Instruments and Measures

A primary objective of this study was to describe the types of instructional interactions occurring in beginning algebra classrooms. A momentary time sampling instrument, the Project AAIMS – Student Observation System (SOS-AAIMS), was used to assess student behavior, teacher behavior, instructional organization, and task format. (See Appendix A for the Project AAIMS-Student Observation System Manual.)

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[2] Students usually take four classes each semester that meet for 90 minutes each day.

The SOS-AAIMS was developed for the purpose of observing student and teacher behavior in algebra classrooms. The tool was designed by modifying the Project Inclusion Student Observation System (Foegen, Marston, Robinson, & Deno, 1993), an instrument developed for an earlier research project, to reflect four aspects of algebra instruction for special education and general education classes. The SOS-AAIMS can be used to record the behaviors of students with and without disabilities, as well as the actions of general and special education teachers. In addition, the observational system also allows the researcher to record information about the types of instructional organization and task formats used throughout the class period. A brief description of the possible codes for each of the four aspects of this observation system follows. For a more complete description of each of the codes, see Appendix A for the Project AAIMS-Student Observation System Manual.

Student Behaviors

Four categories of student behaviors were observed and recorded. The four categories include active academic response, competing behavior, other appropriate, and off task. Whenever a student was overtly engaged in an active response to an academic task such as writing to complete an assignment or to take notes, the behavior was coded as an active academic response. If a student was overtly engaging in an active response that was disruptive or intrusive to class activities, then the behavior was coded as competing behavior. The other appropriate code was used when the student was not engaged in an active academic response or a competing behavior; instead, he or she was displaying behavior that was appropriate to the situation (e.g., raising one's hand while waiting for the teacher or watching as another student demonstrated a skill). Behavior was coded as off task when the student was not engaged in any of the three above behaviors.   For example, the student may have been doodling on a notebook during independent work time or staring off into space.

Teacher Behaviors

Teacher behaviors were also classified into four categories: academic talk/listening, academic monitoring, task management, and other. If the teacher was talking about or presenting academic material to the entire class, a small group, or an individual student the behavior was coded as academic talk/listening. As one might surmise, this code was also used whenever the teacher was observed listening to a student's answer or question. It should be noted that the academic talk/listening code was used only when the "talk" dealt with substance of the academic material and not the structure of an assignment or activity. The code academic monitoring was used when the teacher was nonverbally monitoring student work during independent work (e.g., looking over a student's shoulder as s/he completed a problem or task). Whenever the teacher's behavior was intended to structure or organize a class activity, the observers used the task management code. The other code was used when the teacher's behavior could not be appropriately classified using any of the three behaviors just described. For example, if a teacher had to deal with a discipline issue, the observer would code the teacher's behavior as other.

Instructional Organization

Observers classified the instructional organization of each class by using four categories. These categories were: whole class, small group, independent, and other. Whenever the entire class was working as a group on the same activity, the observer used the whole class code.   If the class was subdivided into small groups of two or more students who were working together

to complete an academic task, then the small group code was used. During the times when the class was given an assignment and students were working individually to complete it, the observer used the code "independent." "Other" was used when the instructional organization of the classroom could not be classified according to any of the above three categories.

Task Format

Four categories of task format were also observed and recorded. The four categories included: lecture/discussion, paper/pencil, computer/media, and other. The lecture/discussion code was used when students were listening to a lecture or watching a demonstration.
This code was also used for guided practice, such as when the teacher and students worked out sample problems together. Whenever students worked independently or in small groups solving problems from their textbooks or worksheets and there was little or no interaction between the teacher and the students, observers used the paper/pencil code to describe the task format. Observers used the computer/media code if a computer or another type of media was used as an essential part of the lesson. For example, if the students used graphing calculators, then the computer/media code would be recorded; however, if the teacher used PowerPoint slides to accompany a lecture the lecture/discussion code was recorded. The other code was used whenever the activity could not be classified according to the three task format categories described earlier.

Sampling Procedure

The SOS-AAIMS used a momentary time sampling procedure with 15-second intervals to record data. The student, teacher, instructional organization, and task type were observed for the first five seconds and the relevant codes for each of these dimensions were recorded during the last ten seconds. Targeted students were observed for a series of one minute periods (four intervals). The one minute observations usually alternated between general and special education students. If there were no special education students in a class, low achieving students were observed in place of special education students.

Observation Schedule

Observations spanned a seven-week period with three observations occurring in each of the algebra classes. This was done to ensure that representative samples of classroom activities were reflected in the data. The observations were conducted in October and November of 2004. A Pocket PC version of Project AAIMS-SOS was used to record the data during each observation. The information was then downloaded onto a computer for data analyses.

Table 1 provides an overview of the observation schedule. The shaded boxes indicate observations when two people recorded SOS-AAIMS data to test inter-observer agreement. During these class periods, a second observer gathered parallel data to the primary observer using a paper version of the SOS-AAIMS. Our goal was to monitor inter-observer agreement in at least 20 percent of the observations to prevent observer drift. As one can see from this table, we surpassed this goal since 4 of the 18 SOS-AAIMS observations (22%) were conducted by two people. Point-by-point comparisons were made and the percentage of agreement was computed. The average agreement level across the 4 checks was 89%; individual agreement rates for each of the checks were 89%, 88%, 86%, and 93%.

Table 1. Observation Schedule

Observation	Alg IA Teacher 1 Period 1	Alg IA Teacher 2 Period 2	Alg IA Teacher 2 Period 3	Alg IA Teacher 2 Period 4	Alg IB Teacher 1 Period 3	Alg IB Teacher 1 Period 4
Obs 1	10/19/04	10/19/04	10/19/04	10/26/04	10/26/04	10/19/04
Obs 2	11/18/04	11/18/04	11/18/04	11/18/04	11/22/04	11/22/04
Obs 3	11/22/04	11/22/04	11/22/04	11/22/04	11/30/04	11/30/04

Results

Eighteen algebra class periods were observed for a total of 5,004 observational intervals. A total of 2,524 intervals (50.4%) focused on general education students while 2,480 (49.6%) focused on special education or low achieving students. (Note: Low achieving students were observed when there were no special education students in a particular algebra class on the day an observation was made. The data for these low achieving students is included with the data for special education students in the tables that follow.) Table 2 shows the percentages of observation intervals by course and student type. As one can see from this table, 67% of the observation intervals occurred in for the Algebra IA classes and 37% of them focused on Algebra 1B classes. Nearly equal percentages of general education and special education students were observed within the two algebra courses.

Table 2. Percentage of General Education and Special Education Student Observation Intervals

Class Type	General Education	Special Education	Total
Algebra IA	34%	33%	67%
Algebra IB	17%	17%	34%
Total	51%	50%	101%

Instructional Organization

The first set of data we examined from the SOS-AAIMS focused on the instructional organization of the class periods that were observed. Table 3 shows the percentages for the four instructional organization categories. The data revealed that algebra teachers as a whole used 50 percent of the observation intervals on whole class activities. Small groups were employed during 2% of this time, and independent work was assigned during 45% of these intervals. When we compared the two different classes, we found that slightly different patterns of instructional organization were used. In Algebra IA equal amounts of time were spent on whole class and independent work activities (48%) and equal amounts of time were spent on small group and "other" activities (2%). In Algebra IB, the greatest percentage of time was spent on whole class activities (53%). This was followed by independent work (41%), while four percent of the intervals were spent on "other" activities, and 3% of the time was spent doing small group work.

Table 3. Summary of Instructional Organization

Class Type or	Instructional Organization			
	Whole	Small	Independent	Other

Course	Class	Group	Work	
All Classes	50%	2%	45%	3%
Algebra IA	48%	2%	48%	2%
Algebra IB	53%	3%	41%	4%

Task Format

Task format was next dimension we studied. Observers were to mark the type of instructional activity that was most prevalent during each observation interval. The data on task format, presented in Table 4, showed that lectures or discussions and paper-pencil activities were the most common task formats, accounting for 88% of the observational intervals. During our observations, teachers used computers or other media as learning tools for 7% of the observational intervals (e.g., individual dry erase boards), while 5% of these intervals were coded "other" for the task format. For Algebra IA, almost the same amount of time was spent in lectures and discussions (46%) as was spent during paper and pencil tasks (47%). Some kind of media was used during 4% of the Algebra IA intervals, and 3% of the intervals in this class were labeled "other." Lectures and discussions took up the same proportion of time in the Algebra IB classes (46%) as they did in the Algebra IA classes. The students in Algebra IB spent less time engaged in paper and pencil tasks (33%) and more time using computers or media (12%) or doing "other" tasks (9%) than their Algebra IA peers.

Table 4. Task Format

Class Type or Course	Task Format			
	Lecture/ Discussion	Paper-Pencil	Computer/ Media	Other
All Classes	46%	42%	7%	5%
Algebra IA	46%	47%	4%	3%
Algebra IB	46%	33%	12%	9%

Teacher Behavior

The third dimension of the SOS-AIMS we considered was teacher behavior. Data related to this variable are presented in Table 5. An analysis of teacher behavior indicated that, as a group, the teachers spent the most time engaged in academic talk/listening (59%). Task management was the second most prevalent teacher behavior at 24%. Eight percent of observational intervals were coded "academic monitoring," and nine percent of the intervals fit into the "other" category. There were major differences in teacher behavior in every category of teacher behavior except for intervals labeled "other" when we disaggregated the data by course. When teaching Algebra IA, teachers spent more time engaged in academic talk and listening (61%) than in Algebra IB (55%). Teachers also spent more time providing academic monitoring in Algebra IA (10%) than in Algebra IB (4%). On the other hand, the more time was spent on task management in Algebra IB (32%) than in Algebra IA (20%).

Table 5. Summary of Teacher Behavior

Participants	Teacher Behavior			
	Academic Talk/Listening	Academic Monitoring	Task Management	Other
All Teachers	59%	8%	24%	9%
Algebra IA	61%	10%	20%	9%
Algebra IB	55%	4%	32%	8%

Combining the academic talk/listening and academic monitoring categories to make a composite "instruction" category, one can see that as a whole, teachers spent 67% of the observational intervals engaged in instructional tasks. When we looked at what happened in the two different courses, we found that 71% of the Algebra IA intervals were labeled "instruction" and 59% of the Algebra IB intervals received that same label.

Student Behavior

Student behavior was the last variable we analyzed. Table 6 provides a summary of student behavior, with the results disaggregated by student classification and course. Overall, students were engaged in active academic responses (34%) or other appropriate behavior (52%) for most of the observational intervals. There was some off task behavior (15%) and very few instances of competing behavior displayed during this study (only 3, <1%). Special education students and general education students had very similar rates of active academic responses (34% and 33%, respectively), but special education students displayed less other appropriate behavior (49% as compared to 54%) and more off task behavior (18% as compared to 12%) than their general education peers.

Table 6. Summary of Student Behavior

Participants	Student Behavior			
	Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
All Students	34%	52%	15%	<1%
All General Education Students	34%	54%	12%	<1%
All Special Education Students	33%	49%	18%	<1%
Algebra IA	32%	51%	17%	<1%
Algebra IB	36%	54%	11%	0%

Comparing student behavior in the two different courses, we found fewer active academic responses in Algebra IA (32% as compared to 36%), as well as fewer other appropriate behaviors (51% as compared to 54%) than in Algebra IB classes. Consequently, there was more off task behavior displayed in the Algebra IA classes (17% as compared to 11%).

When a composite behavior category termed 'on task' was created by combining active academic responses with other appropriate behaviors, we found that general education students were on task during 88% of the observational periods while special education students were on

task in 82% of the observations. Algebra IB students were on task for 90% of the observation intervals, while the students in Algebra IA were on task for 83% of the intervals.

We conducted parallel analyses using cross tabulation of student classification (special education, general education) with type of general education algebra course (Algebra IA, Algebra IB) to find out if there were any differences in the behavior patterns of general and special education students in these courses. Table 7 includes the data for these comparisons.

Table 7. Student Behavior by Course Type and Student Classification

Course and Student Classification	Student Behavior			
	Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra IA				
Gen Ed Students	32%	55%	14%	<1%
Special Ed Students	33%	46%	21%	<1%
Algebra IB				
Gen Ed Students	38%	53%	10%	0%
Special Ed Students	34%	55%	11%	0%

We found that general education students who were observed in Algebra IB displayed the greatest percentage of active academic responses (38%), and the other three groups of students had very similar percentages of active academic responses (32% for Algebra IA general education students, 33% for Algebra IA special education students, and 34% for Algebra IB special education students). The percentages of other appropriate behavior were very similar for Algebra IA general education students (55%), Algebra IB general education students (53%) and Algebra IB special education students (55%). Special education students in Algebra IA displayed the least other appropriate behavior (46%) and the most off task behavior (21%).

When we looked at the percentages for on task behavior, both general education and special education students in Algebra IB had very high rates of on task behavior (91% and 89%, respectively), as did general education students in Algebra IA (87%). Special education students in Algebra IA had the lowest percentage of on task behavior (79%) during our observations.

Exploring Interactions Among Observational Variables

Task Format and Instructional Organization
In addition to summarizing the data within each of the four observational categories, we were also interested in determining the interactions between the different variables in Algebra IA and in Algebra IB (see Table 8). First, we looked at which task formats were used when the instructional organization was labeled "whole class." In the District B algebra classes, we found that most whole class intervals were devoted to lectures or discussions (94% for Algebra IA and

87% for Algebra IB). The rest of the whole class time was equally divided among paper and pencil, computer/media, and "other" tasks in Algebra IA (2% each). In Algebra IB, 8% of the remaining intervals were spent doing "other" tasks, while paper and pencil tasks and computer/media tasks were both assigned for 3% of the whole class intervals.

Paper and pencil tasks were assigned for most of the small group intervals (85% in Algebra IA and 83% in Algebra IB). The next most prevalent task format during small group time was lecture or discussion (15% for Algebra IA and 10% for Algebra IB). There were no intervals where the task format was coded "other" in either course; however, 7% of the time spent in small groups in Algebra IB classes included using computers or some other type of media.

Paper and pencil tasks were also the most prevalent task format when the instructional organization was labeled "independent work." In Algebra IA, 92% of the independent work intervals involved paper and pencil tasks, while the percentage for Algebra IB classes was 73%. Even though the second most prevalent task format during independent work was computer/media for Algebra IA and Algebra IB, the percentages for this task format were very different. The Algebra IA classes performed computer/media task for 8% of these intervals, while the Algebra IB classes spent 25% of the independent work intervals using some form of media. Both classes had very little independent work time that was used for lectures and discussions or "other" tasks (<1% for lectures and discussions for both classes; <1% for Algebra IA and 2% for Algebra IB for "other" tasks).

Table 8. Instructional Organization and Task Format by Class Type

Class Type	Instructional Organization	Task Format			
		Lecture/ Discussion	Paper-pencil	Computer/ Media	Other
Algebra IA	Whole Class	94%	2%	2%	2%
	Small Group	15%	85%	0%	0%
	Independent Work	<1%	92%	8%	<1%
	Other	0%	0%	0%	100%
Algebra IB	Whole Class	87%	3%	3%	8%
	Small Group	10%	83%	7%	0%
	Independent Work	<1%	73%	25%	2%
	Other	0%	2%	0%	99%

Instructional Organization and Teacher Behavior
The second combination of variables we considered was instructional organization and teacher behavior for the two different algebra courses (see Table 9). The percentages for each type of teacher behavior during whole class observation intervals were very similar for Algebra IA and Algebra IB. The most typical teacher behavior during whole class intervals was academic talk or listening (80% for Algebra IA and 81% for Algebra IB). The next most common teacher behavior was task management (16% for Algebra IA and 15% for Algebra IB). The percentages for "other" teacher behaviors and academic monitoring were very low with "other" behaviors displayed by teachers for 3% of the whole class intervals in Algebra IA and

4% of the intervals in Algebra IB, while the percentages for academic monitoring were 2% for Algebra IA and <1% for Algebra IB.

Table 9. Instructional Organization and Teacher Behavior by Class Type

Class Type	Instructional Organization	Teacher Behavior			
		Academic Talk/Listen	Academic Monitoring	Task Management	Other
Algebra IA	Whole Class	80%	2%	16%	3%
	Small Group	39%	43%	15%	3%
	Independent Work	46%	18%	22%	15%
	Other	4%	3%	69%	24%
Algebra IB	Whole Class	81%	<1%	15%	4%
	Small Group	55%	2%	43%	0%
	Independent Work	28%	10%	51%	11%
	Other	0%	0%	63%	37%

Teachers displayed quite different behaviors in the two algebra courses during small group intervals. For Algebra IA, the most common teacher behavior was academic monitoring at 43%, followed by academic talk or listening at 39%, then task management at 15% and finally, "other" teacher behaviors at 3%. The Algebra IB teacher, on the other hand, spent the most time talking or listening to small groups (55%) and the next most time managing tasks (43%). This teacher spent relatively little time performing academic monitoring (2%) and no time displaying "other" behaviors.

Major differences in teacher behavior were also observed during independent work intervals. There was much more academic talk and listening in Algebra IA (46%) than in Algebra IB (28%) and much more task management in Algebra IB (51%) than in Algebra IA (22%). Academic monitoring was the third most common teacher behavior during independent work intervals for Algebra IA (18%), but it was the least used teacher behavior in Algebra IB (10%). "Other" teacher behavior was observed during 15% of the independent work intervals in Algebra IA and for 11% of these intervals in Algebra IB.

When we combined percentages for academic talk or listening with academic monitoring to make an "instruction" category, we found that more than 80% of the whole class intervals would be labeled "instruction" in Algebra IA classes (82%) and Algebra IB classes (81%). Eighty-two percent of the small group intervals in Algebra IA would fit into this category, while the percentage for Algebra IB would only be 57%. During independent work time there were considerably more intervals devoted to instruction in Algebra IA (64%) than in Algebra IB (38%).

Instructional Organization and Student Behavior
Next, we explored the interaction between instructional organization and student behavior. Table 10 shows the percentages for each of these combinations. A majority of the intervals were labeled "other appropriate behavior" in both courses (61% for Algebra IA and 67% for Algebra IB). The second most common student behavior during whole class intervals for both courses was active academic responses (22% for Algebra IA and 26% for Algebra IB). Although off task behavior was the third most common student behavior during whole class intervals for both

courses, students in Algebra IA displayed more than twice as much off task behavior as their Algebra IB peers (17% and 7%, respectively).

The percentages for different kinds of student behavior were also similar for independent work times. The most typical student behavior during independent work intervals was active academic responses (44% for Algebra IA and 50% for Algebra IB). Students in both classes were engaged in other appropriate behavior for more than one third of the independent work intervals (38% for Algebra IA and 36% for Algebra IB), while the percentages for off task behavior during independent work were also very close for Algebra IA (17%) and Algebra IB (15%).

During small group intervals, students in the two kinds of algebra classes displayed very different patterns of behavior. Students in Algebra IB classes had the highest percentage of active academic responses for any combination of variables (81%), while their Algebra IA peers exhibited such behaviors only 22% of this time. Algebra IB students were engaged in other appropriate behavior 17% of the time while Algebra IA students showed other appropriate behavior during 52% of these intervals. Algebra IA students had thirteen times the rate of off task behavior as their Algebra IB peers (26% as compared to 2%) when small groups were used.

Table 10 Instructional Organization and Student Behavior

Class Type	Instructional Organization	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra IA	Whole Class	22%	61%	17%	<1%
	Small Group	22%	52%	26%	0%
	Independent Work	44%	38%	17%	<1%
	Other	7%	78%	16%	0%
Algebra IB	Whole Class	26%	67%	7%	0%
	Small Group	81%	17%	2%	0%
	Independent Work	50%	36%	15%	0%
	Other	0%	76%	24%	0%

When we looked at on task percentages, we found that all of these percentages were 74% or greater. For most of the combinations, Algebra IB students had higher rates of on task behavior than their Algebra IA peers. The only exception was when instructional organization was labeled "other." The most on task behavior was displayed by Algebra IB students during small group times (98%). The next most on task behavior was shown by these same students during whole class intervals (93%). Students in Algebra IB exhibited on task behavior during 86% of the independent work times and 76% of the intervals that were labeled "other' for instructional organization. Students Algebra IA showed the most on task behavior during "other" intervals (85%), the next most on task behavior during whole class intervals (83%), and the third most on task behavior during independent work times (82%). When Algebra IA students were to work in small groups, they displayed the least on task behavior; nevertheless, such behavior was displayed for 74% of these intervals.

We took a closer look at student behavior during different instructional organization patterns to see if general education and special education students displayed similar types of behavior under similar conditions (see Table 11). For whole class observation intervals the most typical behavior displayed by all of the groups of students was other appropriate behavior. Special education students in Algebra IB exhibited other appropriate behavior for 71% of the whole class intervals. The next highest percentages were 64% for general education students in Algebra IA and 63% for general education students in Algebra IB. Special education students in Algebra IA had the lowest percentage of other appropriate behavior during whole class intervals at 59%. For three of the groups, active academic responses were the next most common behavior. The remaining group, special education students in Algebra IB, had nearly equal percentages of off task (21%) and active academic responses (20%). General education students in both classes displayed more active academic responses (24% for Algebra IA general education students and 31% for Algebra IB general education students) than their special education peers (20% for Algebra IA special education students, 21% for Algebra IB special education students) during whole class intervals. Special education students in Algebra IA displayed the most off task behavior during whole class intervals (21%), followed by their general education classmates (12%), while the special education students in Algebra IB were off task during 8% of these intervals, and their general education classmates were off task 6% of this time.

Table 11. Student Behaviors Associated with Instructional Organization by Course and Student Classification

Course and Student Classification	Task Format	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra IA					
Gen Ed Students	Whole Class	24%	64%	12%	<1%
	Small Group	0%	43%	57%	0%
	Independent Work	42%	44%	14%	0%
	Other	10%	77%	13%	0%
Special Ed Students	Whole Class	20%	59%	21%	0%
	Small Group	40%	60%	0%	0%
	Independent Work	47%	32%	21%	<1%
	Other	0%	78%	22%	0%
Algebra IB					
Gen Ed Students	Whole Class	31%	63%	6%	0%
	Small Group	83%	17%	0%	0%
	Independent Work	45%	40%	15%	0%
	Other	0%	74%	26%	0%
Special Ed Students	Whole Class	21%	71%	8%	0%
	Small Group	71%	14%	14%	0%
	Independent Work	54%	32%	14%	0%
	Other	0%	78%	22%	0%

When we examined the data for small group intervals we found that special education students and general education students in Algebra IA had very different behavior patterns, while the students in Algebra IB had similar results. In Algebra IA special education students were on task for 100% of these intervals (40% active academic responses and 60% other appropriate behavior). On the other hand, general education students in this class were on task for only 43% of these intervals with all of the on task behavior coming from other appropriate behavior. Consequently, general education students in Algebra IA were off task for more than half of the small group intervals (57%). The general education students in Algebra IB were also on task for 100% of the small group intervals (83% for active academic responses, and 17% for other appropriate behavior), while their special education peers were on task for 85% of these intervals (71% for active academic responses and 14% for other appropriate behavior). We wondered if the very high percentage of active academic responses for the general education students in Algebra IB might be the result of a limited number of observation intervals that were coded "small group;" however, this was not the case because the data set included at least 30 small group intervals for each student category except for special education students in Algebra IB. The percentage for the Algebra IB special education of students may be skewed because this group was observed during small groups for only seven intervals.

During independent work special education students in Algebra IA and both groups of students in Algebra IB displayed active academic responses most often (47% for Algebra IA special education students, 45% for Algebra IB general education students, and 54% for Algebra IB special education students). For general education students in Algebra IA, the most common student behavior during independent work was other appropriate behavior (44%). General education students in Algebra IB displayed other appropriate behavior during 40% of independent work intervals, and special education students in both classes were engaged in other appropriate behavior during 32% of these intervals. For general education students in Algebra IA, the second most typical student behavior during independent work times was active academic responses (42%). For all groups off task behavior was the third most common student behavior during independent work (21% for Algebra IA special education students, 15% for Algebra IB general education students, and 14% for Algebra IA general education students and Algebra IB special education students). The percentage of on task behavior for all groups during independent work was at least 79%. For Algebra IA general education and Algebra IB special education students the rate of on task behavior was 86%, for Algebra IB general education students it was 85%, and for Algebra IA special education students it was 79%.

Task Format and Teacher Behavior
The data for the cross tabulation of task format and teacher behavior is shown in Table 12. Both classes had similar teacher behavior patterns when the task format was lecture or discussion. As one might expect, the most typical teacher behavior during lectures or discussions was academic talk or listening for both courses (83% for Algebra IA and 89% for Algebra IB. The second most common teacher behavior was task management (13% for Algebra IA and 10% for Algebra IB). Academic monitoring and "other" teacher behaviors were exhibited very infrequently (for 2% or fewer intervals).
There were major differences between the way teachers spent their time during paper and pencil activities. Algebra IA teachers were engaged in academic talk or listening during 45% of the paper and pencil intervals, and they managed tasks during 23% of these intervals. An equal percentage of intervals (16%) were used for academic monitoring and displaying "other" teacher

behaviors. In Algebra IB classes, the teacher spent more than half of the paper and pencil intervals doing some kind of task management (57%) and one third (33%) of this time talking or listening to students. Much less time was spent exhibiting "other" teacher behavior (7%) or monitoring academic tasks (3%) in Algebra IB than in Algebra IA.

Table 12. Task Format and Teacher Behavior in Different Courses

Course	Task Format	Teacher Behavior			
		Academic Talk/Listen	Academic Monitoring	Task Management	Other
Algebra IA	Lecture/Discussion	83%	2%	13%	2%
	Paper-Pencil	45%	16%	23%	16%
	Computer/Media	42%	42%	13%	3%
	Other	5%	2%	77%	17%
Algebra IB	Lecture/Discussion	89%	<1%	10%	1%
	Paper-Pencil	33%	3%	57%	7%
	Computer/Media	27%	28%	22%	23%
	Other	0%	0%	68%	32%

Teacher behavior was also very different during the computer/media intervals in Algebra IA and in Algebra IB. When we looked at the data for Algebra IA we found that an equal percentage of computer/media intervals were used for academic talk or listening and academic monitoring (42%). Thirteen percent of these intervals were labeled "task management" in these classes. Teacher behavior during computer/media intervals in Algebra IB showed much more variation with a percentage of at least 22% for each of the possible teacher behaviors. Academic monitoring was the most prevalent teacher behavior in Algebra IB during computer/media intervals (28%). The percentage for academic talk and listening under these conditions was a very class second at 27%. "Other" teacher behaviors were third at 23% and task management was 22%.

When we combined the academic talk or listening percentages with the academic monitoring percentage to calculate a percentage for "instruction", we found more intervals that fit into this new category during Algebra IA classes than in Algebra IB classes for three out of four task formats. The exception was lecture/discussion intervals (89% for Algebra IB and 85% for Algebra IA). Algebra IA teachers were in instruction mode for 61% of the paper and pencil intervals; while the percentage was 36% for the Algebra IB teacher. For computer/media intervals the percentages for Algebra IA and Algebra IB were 84% and 56%, respectively. Even when the task format was "other," Algebra IA teachers were engaged in instructional behaviors for 7% of these intervals as compared to 0% for the Algebra IB teacher.

Task Format and Student Behavior
The next set of interactions we examined compared student behavior during different task formats for the two beginning algebra courses that we observed in District B. Table 13 provides a summary of the student behavior data for each task format. Student behavior patterns were similar in Algebra IA and Algebra IB for lecture or discussion, as well as paper and pencil activities. For lecture and discussion intervals, the most common student behavior in the two classes was other appropriate behavior (61% for Algebra IA and 65% for Algebra IB). Active academic responses were the second most prevalent student behavior during lectures and

discussions (23% for Algebra IA and 28% for Algebra IB). Although off task behavior was the third most prevalent student behavior in both classes, students in Algebra IA displayed more than double the amount of off task behavior (17%) when compared to their Algebra IB peers (7%) during lectures and discussions.

The percentages for different student behaviors during paper and pencil activities were much closer for the two classes. Active academic responses were most typical with this being the case for 43% of the paper and pencil intervals in Algebra IA and 46% of these intervals in Algebra IB. Thirty-nine percent of the paper and pencil intervals were labeled "other appropriate behavior" in Algebra IA while the percentage was 37% for Algebra IB students. Off task behavior occurred in 18% of the Algebra IA paper and pencil intervals and in 17% of the Algebra IB paper and pencil intervals.

There were major differences between Algebra IA students and their Algebra IB peers during observation intervals where computers or other media were used. Algebra IB students had the most active academic responses of any of the possible combinations of task format and student behavior (63%). The percentage for Algebra IA students during these intervals was 39%. For 35% of the computer/media intervals, the Algebra IB students were engaged in other appropriate behavior while their Algebra IA peers displayed other appropriate behavior during 45% of these intervals. Students in Algebra IB were only off task during 3% of these intervals while students in Algebra IA were off task 16% of this time.

Table 13. Task Format and Student Behavior in Different Courses

Course	Task Format	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra IA	Lecture/ Discussion	23%	61%	17%	<1%
	Paper/ Pencil	43%	39%	18%	<1%
	Computer/Media	39%	45%	16%	0%
	Other	6%	83%	11%	0%
Algebra IB	Lecture/ Discussion	28%	65%	7%	0%
	Paper/ Pencil	46%	37%	17%	0%
	Computer/Media	63%	35%	3%	0%
	Other	6%	78%	16%	0%

Once again, students in District B displayed very high rates of on task behavior. They were on task for at least 82% for each type of task format in both courses. Students in the Algebra IB class had the two highest percentages of on task behavior with an on task percentage of 98% for computer/media intervals and 93% for lectures or discussions. Algebra IA students were on task for 89% of the intervals when task format was coded "other." Three combinations resulted in on task percentages of 84% (Algebra IA lectures or discussions and computer/media intervals, as well as Algebra IB "other" intervals). Paper and pencil intervals were associated with the lowest percentages of on task behavior in both classes with 82% for Algebra IA students and 83% for Algebra IB students.

Table 14 shows the data for the cross tabulation of student behavior and task format by type of student in the general education algebra courses. Three of the four groups of students showed the same behavior patterns during lectures or discussions with other appropriate behavior as the most prevalent behavior, active academic responses as the second most common, and off task behavior as the third most typical behavior during lectures and discussions. During lectures and discussions, other appropriate behavior was the most common student behavior for all four of the groups. General education students in Algebra IA displayed other appropriate behavior during 63% of the lecture or discussion intervals while the Algebra IA special education students displayed such behavior 58% of this time. In Algebra IB classes, general education students exhibited other appropriate behavior 61% of this time, and their special education peers displayed this type of behavior during 69% of these intervals. Active academic responses were the next most typical student behavior during lectures and discussions for each group except for special education students in Algebra IA. During lectures and discussions, Algebra IA general education students displayed active academic responses during 25% of these intervals, Algebra IB general education students exhibited this type of behavior during 33% of these intervals, and Algebra IB special education students showed active academic responses during 22% of these intervals. Off task behavior was the third most prevalent student behavior for Algebra IA general education students (12%), Algebra IB general education students (5%), and Algebra IB special education students (9%). For the special education students in Algebra IA, the percentage of off task behavior was slightly greater than the percentage for active academic responses during lectures and discussions (22% and 20%, respectively). As one can see from Table 14, special education students in both classes showed more off task behavior than their general education peers; nevertheless, the special education students in Algebra IB displayed less off task behavior than the general education students in Algebra IA during lectures or discussions.

When we examined the data for paper and pencil intervals we found there were different behavior patterns for special education students and general education students in the two courses. The most typical behavior for special education students in both classes was active academic responses during paper and pencil tasks (46% for Algebra IA special education students and 52% for Algebra IB special education students), with other appropriate behavior as the second most common student behavior (33% for Algebra IA special education students and 31% for Algebra IB special education students). The pattern was reversed for general education students during paper and pencil activities. Consequently, general education students displayed more other appropriate behavior (45% for Algebra IA general education students and 43% for Algebra IB general education students) and fewer active academic responses (40% for both Algebra IA and IB general education students) than their special education peers during paper and pencil intervals. All of the groups displayed close to the same rates of off task behavior when paper and pencil tasks were assigned (16% for Algebra IA general education students, 17% for both groups of students in Algebra IB, and 20% for Algebra IA special education students).

Next, we considered student behaviors during computer/media intervals. For this combination of variables, student behavior patterns were similar within a course, but different across the two courses. In Algebra IA classes, the most prevalent student behavior when a computer or other type of media was used was other appropriate behavior (44% for Algebra IA general education students and 46% for Algebra IA special education students), and the second most common behavior was active academic response (39% for both groups of students in

Algebra IA). For Algebra IB classes, active academic responses (69% for Algebra IB general education students and 56% for Algebra IB special education students) were more typical than other appropriate behavior (30% for Algebra IB general education students and 41% for Algebra IB special education students). Students in Algebra IB engaged in very few instances of off task behavior during computer/media intervals (2% for Algebra IB general education students and 3% for Algebra IB special education students). General education students in Algebra IA classes had the most off task behavior during these intervals (17%) and special education students in Algebra IA displayed off task behavior during 15% of computer/media tasks.

Table 14. Student Behaviors Associated with Task Format by Course and Student Classification

Course and Student Classification	Task Format	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra IA					
Gen Ed Students	Lecture/ Discussion	25%	63%	12%	<1%
	Paper-Pencil	40%	45%	16%	0%
	Computer/Media	39%	44%	17%	0%
	Other	9%	83%	9%	0%
Special Ed Students	Lecture/ Discussion	20%	58%	22%	0%
	Paper-Pencil	46%	33%	20%	<1%
	Computer/Media	39%	46%	15%	0%
	Other	0%	84%	16%	0%
Algebra IB					
Gen Ed Students	Lecture/ Discussion	33%	61%	5%	0%
	Paper-Pencil	40%	43%	17%	0%
	Computer/Media	69%	30%	2%	0%
	Other	5%	75%	20%	0%
Special Ed Students	Lecture/ Discussion	22%	69%	9%	0%
	Paper-Pencil	52%	31%	17%	0%
	Computer/Media	56%	41%	3%	0%
	Other	7%	81%	12%	0%

General education and special education students enrolled in Algebra IB exhibited on task behavior for more than 91% of the lecture or discussion intervals and computer/media intervals. They were on task for at least 80% of paper and pencil intervals and "other" intervals. General education students in Algebra IA were on task for 92% of "other" intervals and for more than 83% of the remaining task format intervals. Special education students in Algebra IA had the lowest percentages of on task behavior for lecture or discussion intervals and paper and pencil intervals (78% and 76%, respectively), but had slightly more on task behavior than their general education peers during computer/media intervals (85% for Algebra IA special education students and 83% for Algebra IA general education students).

Teacher Behavior and Student Behavior

Researchers have repeatedly asserted that teachers who maximize students' time on task and spend more time actively involved in teaching produce students who have higher achievement gains (Brophy & Good,1986; Wallace, Anderson, Bartholomay, & Hupp, 2002). We were interested in determining which teacher behaviors tended to be closely associated with active academic responses by students in our observations. Table 15 shows the results from a cross tabulation of teacher and student behaviors for the two courses we observed. Our results for District B revealed that active student responses were less common than the more passive "other appropriate" behaviors for most teacher behaviors. There was only one circumstance that was associated with a higher percentage of active academic responses than other appropriate behaviors in District B. This exception occurred in Algebra IB when the teacher was engaged in academic monitoring. The percentage for active academic responses under this condition was 74% and the percentage for other appropriate behavior was 21%.

At least half the intervals when teachers were engaged in academic talk or listening were coded "other appropriate behavior" for both courses (50% for Algebra IA and 57% for Algebra IB). The percentages for active academic responses when teachers were talking or listening were 33% for Algebra IA and 36% for Algebra IB. Students in Algebra IA exhibited more off task behavior than the students in Algebra IB (17% as compared to 7%).

Algebra IA students displayed active academic responses far less often than the Algebra IB students during intervals when the teacher behavior was labeled "academic monitoring" (41% and 74%, respectively). Instead, the percentages for active academic responses (41%) and other appropriate behavior (43%) during academic monitoring were much closer for Algebra IA students. Academic monitoring intervals were associated with more than twice as much off task behavior by Algebra IA students (16%) than by Algebra IB students (6%) in this district.

Table 15. Student Behaviors Associated with Teacher Behaviors in Different Courses

Course	Teacher Behavior	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra IA	Academic Talk/Listening	33%	50%	17%	0%
	Academic Monitoring	41%	43%	16%	<1%
	Task Management	21%	61%	18%	<1%
	Other	42%	43%	15%	<1%
Algebra IB	Academic Talk/Listening	36%	57%	7%	0%
	Academic Monitoring	74%	21%	6%	0%
	Task Management	31%	53%	17%	0%
	Other	33%	52%	15%	0%

During task management intervals other appropriate behavior was the most typical student behavior for both courses (61% for Algebra IA and 53% for Algebra IB). Active academic responses were the next most common behavior when teachers were managing tasks (21% for Algebra IA and 31% for Algebra IB). The rate of off task behavior during task management intervals was very similar with 18% for Algebra IA students and 17% for Algebra IB students.

When we looked at on task percentages, we found that each condition was associated with an on task rate of 83% or better. For students in Algebra IA the percentages for on task behavior showed very little variation across the four types of teacher behavior (85% for "other," 84% for academic monitoring, and 83% for academic talk or listening and task management). These percentages varied more in Algebra IB classes with on task behavior displayed during 95% of the academic monitoring intervals, 93% of the academic talk or listening intervals, 86% of the task management intervals, and 85% of the intervals when teacher behavior was coded "other." Even with the wider spread of percentages, students in Algebra IB had the same or higher on task percentages than their Algebra IA peers across the four different categories of teacher behavior.

In addition to looking at the two algebra classes as a whole, we also examined the type of student behavior displayed by general education and special education students within these courses. The data for this analysis appears in Table 16. All four groups of students showed the same behavior patterns when teachers were talking or listening and when they engaged in task management. For both of these categories of teacher behavior the predominant student behavior was other appropriate behavior, and the second most common student behavior was active academic responses.

General education students in both courses displayed the same rate of other appropriate behavior during times when teachers were engaged in academic talk or listening (55%). Special education students in Algebra IA displayed less other appropriate behavior (44%) than their general education peers, while the special education students in Algebra IB displayed more (59%). The percentages for academic talk and listening intervals that were coded "active academic response" were close to the same for all students in Algebra IA (33%) and special education students in Algebra IB (32%). General education students in Algebra IB exhibited active academic responses during 41% of the academic talk or listening intervals. Special education students in Algebra IA were off task for more of these intervals than their general education peers (23% for Algebra IA special education students and 13% for Algebra IA general education students), and all Algebra IA students were off task more than the students in Algebra IB (9% for Algebra IB special education students and 4% for Algebra IB general education students.)

During academic monitoring intervals general education students in Algebra IA had a different pattern of student behavior than the other three groups of students. For this group of students the most prevalent student behavior was other appropriate behavior (49%), followed by active academic responses (35%), and then off task behavior (16%). The other groups of students displayed more active academic responses than other appropriate behavior during these intervals. Special education students in Algebra IA displayed active academic responses during 46% of these intervals while their special education peers in Algebra IB exhibited active academic responses during 70% of these intervals, and the general education students in Algebra IB gave active academic responses during 78% of this time. The corresponding percentages for

other appropriate behavior were 38% for special education students in Algebra IA, 15% for general education students in Algebra IB, and 27% for special education students in Algebra IB. Under this condition, general education students in Algebra IA had a slightly higher rate of off task behavior (16%) than their special education peers (15%), and a much higher rate than their general education peers in Algebra IB (8%) and the special education students in Algebra IB (3%).

Table 16. Teacher Behavior and Student Behavior by Student Classification

Course and Student Classification	Teacher Behavior	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra IA					
Gen Ed Students	Academic Talk/Listening	33%	55%	13%	0%
	Academic Monitoring	35%	49%	16%	0%
	Task Management	22%	63%	16%	<1%
	Other	41%	45%	15%	0%
Special Ed Students	Academic Talk/Listening	33%	44%	23%	0%
	Academic Monitoring	46%	38%	15%	1%
	Task Management	20%	59%	21%	0%
	Other	44%	41%	14%	1%
Algebra IB					
Gen Ed Students	Academic Talk/Listening	41%	55%	4%	0%
	Academic Monitoring	78%	15%	8%	0%
	Task Management	28%	53%	19%	0%
	Other	33%	55%	12%	0%
Special Ed Students	Academic Talk/Listening	32%	59%	9%	0%
	Academic Monitoring	70%	27%	3%	0%
	Task Management	34%	52%	14%	0%
	Other	32%	48%	19%	0%

Students in Algebra IA displayed greater percentages of other appropriate behavior during task management intervals than they did during academic talk and listening or academic monitoring intervals. This was not the case for students in Algebra IB, who had greater percentages of other appropriate behavior during academic talk or listening intervals than they did during task management or academic monitoring intervals. Three of the groups of students

had their lowest rates of active academic responses during task management intervals (22% for Algebra IA general education students, 20% for Algebra IA special education students, and 28% for Algebra IB general education students). For the special education students in Algebra IB, the rate of active academic responses during task management intervals (34%) was greater than the percentage during academic talk or listening and "other" teacher behaviors (32%). General education students in both courses had the greatest percentage of off task behavior during task management intervals (16% for Algebra IA general education students, which tied the rate of off task behavior during academic monitoring intervals for this group of students; and 19% for Algebra IB general education students). Special education students in both courses had the second highest rate of off task behavior during task management intervals (21% for Algebra IA special education students and 14% for Algebra IB special education students.)

Generally, students displayed the most on task behavior during academic monitoring intervals, followed by academic talk or listening intervals, and the least on task behavior during task management intervals. In all but one comparison, the students in Algebra IB were on task for more of the intervals than the students in Algebra IA. Special education students in Algebra IA had lower rates of on task behavior than the general education students in this course during academic talk or listening intervals and task management intervals and the same rate of on task behavior during academic monitoring intervals. Special education students in Algebra IB had higher percentages for on task behavior than their general education classmates during academic monitoring and task management intervals, but a lower percentage of on task behavior when teachers were engaged in academic talk or listening.

Instructional Organization, Teacher Behavior, and Student Behavior
The data for the teacher and student behaviors during intervals for different categories of instructional organization are presented in Table 17. The most typical combination of teacher behavior and student behavior during whole class intervals was other appropriate behavior with academic talk and listening for both courses (45% for Algebra IA and 51% for Algebra IB). The next most common combination was active academic responses when teachers were engaged in academic talk or listening (20% for Algebra IA and 23% for Algebra IB).

When we looked at the data for the observation intervals when small groups were used, we found that Algebra IA students displayed other appropriate behavior most often. During 20% of the small group intervals, this behavior was exhibited while the teacher was talking or listening, and during 17% of these intervals, the teacher was performing academic monitoring. For Algebra IB the most typical student behavior was active academic responses during academic talk or listening (55%) or task management (24%).

During independent work times there was much more variation in teacher and student behaviors. In Algebra IA the two most prevalent combinations include academic talking or listening on the part of teachers. During 22% of the independent work intervals in Algebra IA academic talk and listening was paired with active academic responses. It was associated with other appropriate behavior during 17% of these intervals. For students in Algebra IB, task management was the most typical teacher behavior. It was accompanied by active academic responses in 21% of the independent work intervals and by other appropriate behavior during 19% of these intervals.

Table 17. Student Behavior by Instructional Organization and Teacher Behavior

Student Behavior by Instructional Organization and Teacher Behavior														
Course	**Instructional Organization (down)**	**Student Behavior**												
		Active Academic Response				Other Appropriate Behavior				Off Task			
	Teacher Behavior (across)	ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Algebra IA	Whole Class	20%	<1%	1%	1%	45%	2%	13%	2%	14%	<1%	1%	1%
	Small Group	9%	11%	2%	0%	20%	17%	12%	3%	9%	15%	2%	0%
	Independent Work	22%	8%	7%	7%	17%	7%	9%	6%	7%	3%	6%	2%
	Other	0%	0%	7%	0%	3%	3%	54%	18%	1%	0%	8%	6%
Algebra IB	Whole Class	23%	<1%	1%	1%	51%	<1%	12%	3%	6%	0%	1%	0%
	Small Group	55%	2%	24%	0%	0%	0%	17%	0%	0%	0%	2%	0%
	Independent Work	16%	8%	21%	5%	11%	2%	19%	5%	2%	1%	11%	1%
	Other	0%	0%	0%	0%	0%	0%	58%	18%	0%	0%	4%	19%

ATL = Academic Talk/Listening   AM = Academic Monitoring   TM = Task Management   OTH = Other

As we have with earlier data about student behavior, we disaggregated the data by student classification. Table 18 includes the percentages for each combination for general education and special education students in the two algebra courses that were observed. For all of the student groups the most typical combination of student and teacher behaviors during whole class interval was other appropriate behavior paired with academic talk and listening. The percentages for this combination were very similar for the general education students in Algebra IA (48%) and Algebra IB (47%). The special education students in Algebra IA had the lowest percentage for this combination of variables (43%) and the special education students in Algebra IB had the highest percentage (56%). Three student groups shared the same combination with the next highest percentages. General education students in Algebra IA displayed active academic responses while teachers were engaged in academic talk or listening during 22% of the whole class intervals. This was the case for 29% of the intervals when general education students were observed in Algebra IB and for 18% of the intervals when special education students in Algebra IB were observed. The second most typical combination for special education students in Algebra IA was off task behavior while teachers were talking or listening (19%).

Small group intervals were associated with much more varied teacher and student behaviors. For the general education students in Algebra IA, the most typical combination was off task behaviors by students when teachers were monitoring academic tasks (33%). The second most common pairing was off task behavior with academic talk and listening (20%). Special education students in Algebra IA were most often observed displaying other appropriate behavior when teachers were engaged in academic monitoring (26%) during small group intervals. Other appropriate behavior and academic talk and listening was the combination with the next highest percentage for these students (23%). General education and special education students in Algebra IB exhibited active academic responses while teachers talked or listened for a majority of small group intervals (54% for Algebra IB general education students and 57% for special education Algebra IB students). For general education students enrolled in Algebra IB, the next most common pairing was active academic responses with task management (29%). When we examined the results for special education students in Algebra IB during small group intervals and looked for the second most common combination of student and teacher behaviors, we found that there were three pairings that had the same percentage (14%). The combinations that occurred for 14% of the small group intervals were active academic responses with academic monitoring, other appropriate behavior with task management, and off task behavior with task management.

During observation intervals that were labeled "independent work" for instructional organization, the combination of student and teacher behavior with the greatest percentage for general education students in Algebra IA was other appropriate behavior with academic talk or listening (22%), followed very closely by active academic responses with academic talk or listening (21%). For special education students in Algebra IA, the most common combination was active academic responses with academic talk or listening (23%), and then other appropriate behavior during academic talk or listening (11%). General education students in Algebra IB were most likely to display other appropriate behavior when their teacher was managing tasks (20%), followed by active academic responses with task management (18%). The most prevalent combination for Algebra IB special education students was active academic responses with task management (25%), and the second most common combination was active academic responses during academic talk or listening (19%). For Algebra IA, all of the most prevalent

Table 18. Student Behavior by Instructional Organization, Teacher Behavior, and Student Classification

Course	Instructional Organization (down)	Student Behavior											
		Active Academic Response				Other Appropriate Behavior				Off Task			
	Teacher Behavior (across)	ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Algebra IA													
General Education Students	Whole Class	22%	1%	2%	0%	48%	1%	13%	2%	4%	<1%	1%	1%
	Small Group	0%	0%	0%	0%	17%	7%	13%	7%	20%	33%	3%	0%
	Independent Work	21%	7%	6%	8%	22%	8%	9%	5%	5%	2%	5%	2%
	Other	0%	0%	10%	0%	4%	4%	46%	23%	0%	0%	6%	6%
Special Education Students	Whole Class	18%	<1%	1%	1%	43%	2%	12%	1%	19%	0%	2%	1%
	Small Group	17%	20%	3%	0%	23%	26%	11%	0%	0%	0%	0%	0%
	Independent Work	23%	9%	7%	7%	11%	6%	9%	6%	9%	3%	6%	2%
	Other	0%	0%	0%	0%	0%	0%	70%	9%	4%	0%	13%	4%
Algebra IB													
General Education Students	Whole Class	29%	0%	1%	1%	47%	0%	12%	4%	4%	0%	2%	0%
	Small Group	54%	0%	29%	0%	0%	0%	17%	0%	0%	0%	0%	0%
	Independent Work	12%	9%	18%	6%	13%	2%	20%	5%	1%	1%	12%	1%
	Other	0%	0%	0%	0%	0%	0%	51%	23%	0%	0%	6%	20%
Special Education Students	Whole Class	18%	<1%	1%	1%	56%	<1%	12%	2%	7%	0%	1%	0%
	Small Group	57%	14%	0%	0%	0%	0%	14%	0%	0%	0%	14%	0%
	Independent Work	19%	6%	25%	4%	8%	2%	17%	4%	3%	<1%	9%	2%
	Other	0%	0%	0%	0%	0%	0%	66%	13%	0%	0%	3%	19%

ATL = Academic Talk/Listening   AM = Academic Monitoring   TM = Task Management   OTH = Other

combinations included academic talk or listening for the teacher behavior, while the student behavior varied from active academic responses to other appropriate behavior. On the other hand, the most common combination in Algebra IB usually had task management (for 3 out of 4 combinations) as the teacher behavior and active academic responses as the student behavior (for 3 out of 4 combinations). Special education students in Algebra IB were the only group to display active academic responses during both of the most typical combinations of student and teacher behaviors.

Task Format, Teacher Behavior, and Student Behavior

Our next analysis looked at student and teacher behaviors when different task formats were used. The results of this analysis appear in Table 19. During lecture or discussion intervals the top two combinations were the same for Algebra IA and Algebra IB. The most typical combination was other appropriate with academic talk or listening (48% for Algebra IA and 57% for Algebra IB). The next most common pairing was active academic responses with academic talk or listening (20% for Algebra IA and 26% for Algebra IB).

During paper and pencil intervals student behaviors matched for the two most prevalent combinations across the two classes, but the teacher behavior varied. The most typical combination for Algebra IA was active academic responses with academic talk or listening (22%), while it was active academic responses with task management in Algebra IB (25%). Other appropriate behavior was the second most common student behavior during paper and pencil tasks for both courses. This student behavior was paired with academic talk and listening in Algebra IA (16%) and task management in Algebra IB (19%).

For computer/media intervals, the combination with the greatest percentage was active academic responses and academic monitoring for both courses (19% for Algebra IA and 24% for Algebra IB). The second most common pairing was other appropriate behavior with academic talk or listening in Algebra IA (18%), while it was active academic responses with academic talk and listening in Algebra IB (19%).

Next, we examined the data for the different groups of students in Algebra IA and Algebra IB (see Table 20). Although the two most common combinations of student and teacher behavior stayed the same for three groups of students during lectures or discussions (other appropriate behavior with academic talk or listening, followed by active academic responses with academic talk or listening), this was not the case for special education students in Algebra IA. These students had the same most typical combination, but a different second most common pairing. For this group of students, the second most prevalent combination was off task behavior with academic talk or listening (20%).

For observation intervals that were coded "paper and pencil" for the task format, there was only one combination that appeared twice when we listed the two most common combinations for the four groups of students. All four groups ended up with a different combination of student and teacher behavior during paper and pencil tasks. For the general education student in Algebra IA, 22% of the paper and pencil intervals were coded "other appropriate behavior" for student behavior and "academic talk or listening" for teacher behavior. For special education students enrolled in this course, the most typical pairing was active academic responses during intervals when teachers were engaged in academic talk or listening

Table 19. Student Behavior by Task Format and Teacher Behavior

Course	Task Format (down) / Teacher Behavior (across)	Student Behavior											
		Active Academic Response				Other Appropriate Behavior				Off Task			
		ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Algebra IA	Lecture/ Discussion	20%	<1%	1%	1%	48%	1%	10%	1%	15%	<1%	1%	<%
	Paper-Pencil	22%	7%	7%	8%	16%	7%	10%	6%	7%	3%	6%	2%
	Computer/ Media	16%	19%	2%	1%	18%	17%	9%	1%	8%	6%	1%	0%
	Other	0%	0%	6%	0%	4%	2%	65%	13%	1%	0%	6%	4%
Algebra IB	Lecture/ Discussion	26%	<1%	1%	1%	57%	<1%	8%	<1%	7%	0%	1%	0%
	Paper-Pencil	18%	1%	25%	2%	14%	1%	19%	4%	2%	1%	13%	1%
	Computer/ Media	19%	23%	9%	12%	8%	5%	13%	10%	1%	1%	0%	1%
	Other	0%	0%	2%	4%	0%	0%	59%	19%	0%	0%	7%	9%

ATL = Academic Talk/Listening
AM = Academic Monitoring   TM = Task Management

Table 20. Student Behavior by Task Format, Teacher Behavior, and Student Classification

Course	Task Format (down)	Student Behavior											
		Active Academic Response				Other Appropriate Behavior				Off Task			
	Teacher Behavior (across)	ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Algebra IA													
General Education Students	Lecture/ Discussion	23%	<1%	2%	0%	50%	1%	10%	2%	11%	<1%	1%	<1%
	Paper-Pencil	20%	5%	6%	8%	22%	7%	10%	6%	5%	2%	6%	2%
	Computer/ Media	19%	19%	1%	0%	21%	14%	7%	1%	9%	9%	0%	0%
	Other	0%	0%	8%	0%	3%	3%	62%	15%	0%	0%	4%	4%
Special Education Students	Lecture/ Discussion	18%	0%	1%	1%	45%	1%	11%	1%	20%	0%	1%	1%
	Paper-Pencil	23%	9%	7%	7%	11%	6%	10%	6%	9%	4%	6%	2%
	Computer/ Media	14%	20%	3%	3%	15%	19%	11%	1%	8%	4%	3%	0%
	Other	0%	0%	0%	0%	5%	0%	70%	8%	3%	0%	11%	3%
Algebra IB													
General Education Students	Lecture/ Discussion	31%	0%	1%	1%	52%	0%	9%	<1%	5%	0%	1%	0%
	Paper-Pencil	16%	1%	21%	2%	17%	1%	29%	5%	1%	1%	15%	<1%
	Computer/ Media	19%	27%	9%	13%	6%	2%	12%	10%	0%	1%	0%	1%
	Other	0%	0%	1%	4%	0%	0%	53%	22%	0%	0%	11%	9%
Special Education Students	Lecture/ Discussion	21%	<1%	1%	1%	61%	<1%	7%	0%	9%	0%	1%	0%
	Paper-Pencil	20%	2%	28%	2%	10%	<1%	18%	3%	3%	<1%	12%	2%
	Computer/ Media	18%	19%	9%	10%	10%	8%	13%	10%	2%	0%	0%	1%
	Other	0%	0%	3%	4%	0%	0%	65%	16	0%	0%	4%	8%

ATL = Academic Talk/Listening   AM = Academic Monitoring   TM = Task Management

(23%). General education students in Algebra IB were most likely to display other appropriate behavior while their teacher managed tasks during times when paper and pencil tasks were assigned (29%). The special education students in this course spent 28% of these intervals exhibiting active academic responses while their teacher managed tasks.

General education students in Algebra IA and special education students in Algebra IB shared the second most common combination. Both of these groups of students displayed active academic responses while their teachers talks or listened during 20% of the paper and pencil intervals. Special education students in Algebra IA engaged in other appropriate behavior while teachers talked or listened during 11% of the paper and pencil intervals, and general education students in Algebra IB exhibited active academic responses as their teacher managed tasks for 21% of these intervals.

The data for computer/media intervals reveal that general education and special education students in Algebra IB had the same most typical and next most typical combination of student and teacher behavior while the special education and general education student in Algebra IA did not. Computer/media intervals were associated with active academic responses and academic monitoring 27% of the time for general education students in Algebra IB and 19% of the time for their special education classmates. The second most common combination for both groups of students in Algebra IB was active academic responses with academic talk or listening (19% for Algebra IB general education students and 18% for Algebra IB special education students). The special education students in Algebra IA shared the most typical combination during computer/media intervals with their peers in Algebra IB – active academic responses with acadmic monitoring (20%). The second most common pairing for special education students in Algebra IA was other appropriate behavior with academic monitoring (19%). For the general education students in Algebra IA the most prevalent pairing was other appropriate behavior with academic talk and listening (21%) followed by active academic responses with academic talk and listening along with active academic responses with academic monitoring (both were 19%).

SUMMARY

Table 21 includes the top two most typical categories for each of the four dimensions of the SOS-AAIMS for District B. In this district, there was a tie for the most typical instructional organization in the Algebra IA class with 48% of the observation intervals labeled "whole class" and 48% coded "independent work." The most typical instructional organization for Algebra IB was whole class (53%) followed by independent work (41%). For Algebra IA the percentages for two most typical task formats was nearly the same with 47% of the intervals labeled "paper-pencil" and 46% of them coded "lecture or discussion." There was a clear distinction between the two most common task formats in Algebra IB. Forty-six percent of the intervals were devoted to lectures or discussion while 33% involved paper and pencil activities. The two most typical teacher behaviors and student behaviors were the same for Algebra IA and Algebra IB. The most common teacher behaviors were academic talking and listening (61% for Algebra IA and 55% for Algebra IB) followed by task management (24% for Algebra IA and 32% for Algebra IB). For student behavior, the most prevalent behaviors were other appropriate behavior (51% for Algebra IA and 54% for Algebra IB) and then active academic responses (32% for Algebra IA and 36 % for Algebra IB). The data summarized in this section regarding student

behavior during intervals with specific instructional organization patterns, task formats, and teacher behaviors are presented in Appendix B.

Table 21. Most Typical Variables

Course	Instructional Organization		Task Format		Teacher Behavior		Student Behavior	
	Most Typical	Second Most Typical	Most Typical	Second Most Typical	Most Typical	Second Most Typical	Most Typical	Second Most Typical
Algebra IA	WC and IW		P/P	L/D	ATL	TM	OAB	AAR
Algebra IB	WC	IW	L/D	P/P	ATL	TM	OAB	AAR

WC = Whole Class, IW = Independent Work, P/P = Paper and Pencil Task
L/D = Lecture or Discussion, ATL = Academic Talk/Listening, TM = Task Management
OAB = Other Appropriate Behavior, AAR = Active Academic Response

Algebra IA

The greatest percentage of time in Algebra IA was spent doing whole class activities (1606 intervals). Most of this time was devoted to lectures or discussions with teachers engaged in academic talk and listening. Students displayed other appropriate behavior during 45% of the whole class intervals. During 19% of these intervals, they exhibited active academic responses, and they were off task for 14% of these intervals. The only other combination of note during whole class lectures and discussions was when teachers were engaged in task management and students displayed other appropriate behavior (10%).

Independent work was assigned for 1585 observation intervals in the Algebra IA classes. As one might guess, the majority of this time was devoted to paper and pencil tasks. Although teachers displayed a much larger range of behaviors under these conditions, they were engaged in academic talk or listening most often. Students exhibited active academic responses during 21% of the independent work intervals when teachers were talking or listening and a paper and pencil task was assigned in Algebra IA classes. They displayed other appropriate behavior during 15% of these intervals and off task behavior during 7% of them. The teacher behavior that we observed the next most frequently during Algebra IA was task management. When paper and pencil tasks were assigned during independent work time and the teacher was managing tasks students displayed other appropriate behavior (9% of the independent work intervals), active academic responses (7% of these intervals), or off task behavior (6% of these intervals.)

Small groups were used during only 65 of the Algebra IA observation intervals. The most typical task format during small group time was paper and pencil. The most common teacher behavior during the small group paper and pencil tasks was academic monitoring with students displaying other appropriate behavior and off task behavior at equal rates (15% of the small group intervals) and active academic responses during 11% of these intervals. Teachers also engaged in academic talk and listening during small group paper and pencil intervals. Under this

condition students displayed other appropriate behavior (12% of the small group intervals). Lectures or discussions were used during 17% of the small group intervals. When this occurred, students usually displayed other appropriate behavior as their teachers talked or listened (8%) or managed tasks (5%).

Algebra IB

Fewer Algebra IB classes were observed; consequently, fewer observation intervals are included in our data set for this course. Nevertheless, the instructional experiences followed the same pattern as Algebra IA with whole class activities occurring most often, followed by independent work, and then small group activities. Whole class activities were used during 886 of the Algebra IB observation intervals. As with Algebra IA, the most typical task format during whole class activities was lectures or discussions with teachers engaged in academic talk or listening. During these intervals, students displayed other appropriate behavior most often (49% of the whole class intervals) followed by active academic responses (23%). They were much less likely to display off task behavior under these circumstances than their Algebra IA peers (6% for Algebra IB and 14% for Algebra IA).

Paper and pencil tasks were most typical during independent work time in Algebra IB (497 intervals). Whereas academic talk or listening was the most prevalent teacher behavior during these intervals in Algebra IA, task management was the most common teacher behavior in Algebra IB. Students in these classes displayed active academic responses (19% of the independent work intervals), other appropriate behavior (15% of these intervals), or off task behavior (11%) under these conditions. When Algebra IB teachers did engage in academic talk or listening during paper and pencil tasks during independent work time, students exhibited active academic responses (10%) or other appropriate behavior (9%). About one quarter of the independent work time in Algebra IB was devoted to computer/media activities. When this occurred, teachers engaged in academic monitoring and students displayed active academic responses.

We observed small group activities in Algebra IB classes for 42 observation intervals. Paper and pencil activities were assigned for the vast majority of this time. The teacher spent most of this time talking or listening while students exhibited active academic responses (55%). For 21% of the small group intervals the teacher managed tasks as students displayed active academic responses.

Special Education and General Education Students in Algebra IA and Algebra IB Classes

Special education and general education students in Algebra IA were observed for the same number of whole class intervals (803). Both groups of students displayed the same pattern of behavior when teachers were talking or listening during lectures or discussions. They usually displayed other appropriate behavior or active academic responses. The major difference between the behavior of general education students and special education students in these classes was the frequency of off task behavior under these conditions. Special education students displayed almost twice as much off task behavior as their general education peers during whole class intervals when teachers were talking or listening during a lecture or discussion.

As far as independent work intervals in Algebra IA classes were concerned, general education students were observed for 799 intervals and special education students were observed

for 786 intervals. For both groups the most prevalent task format was paper and pencil and the most common teacher behavior was academic talk or listening. Special education students displayed active academic responses most often under these conditions while their general education peers were more likely to display other appropriate behavior. Special education students also had higher rates of off task behavior during independent work intervals.

Special education students in Algebra IA were observed for 35 small group intervals while their general education peers were observed for 30 intervals. There were major differences in the behaviors exhibited by these two groups of students. General education students were off task for more than half of these intervals and they never displayed active academic responses during small group activities. They had the most off task behavior when teachers were engaged in academic monitoring during paper and pencil tasks. They displayed the second most off task behavior when teachers were talking or listening and a paper or pencil task was assigned. On the other hand, special education students displayed other appropriate behavior or active academic responses when teachers were engaged in academic monitoring or academic talk or listening. These students exhibited no off task behavior during small group intervals.

When we compared the behavior of general education and special education students in Algebra IB, we found both groups of students had similar behavior during whole class intervals. (General education students in Algebra IB were observed for 435 whole class intervals, while the total was 451 for special education students in this class.) While teachers were talking or listening during lectures or discussions, both groups of students were displayed other appropriate behavior most often. This was followed by active academic responses under the same conditions. Special education students in Algebra IB had the highest rate of other appropriate behavior of all four groups of students in District B. General education students in Algebra IB had the highest rate of active academic responses during whole class intervals of all four student groups.

General education students and special education students in Algebra IB were observed for very similar numbers of independent work intervals – 338 for general education and 342 for special education. The most typical teacher behavior in Algebra IB classes when paper and pencil tasks were assigned during independent work time was task management. Special education students displayed active academic responses most often under these conditions. The second most common behavior by special education students in Algebra IB was other appropriate behavior. For general education the pattern was reversed with other appropriate behavior observed slightly more often than active academic responses. Special education students also exhibited more active academic responses when teachers were engaged in academic talk or listening during paper and pencil tasks in independent work times. For general education students other appropriate behavior was more typical under these conditions. When computer/media activities were part of independent work, general education students enrolled in Algebra IB displayed more active academic responses across each category of teacher behavior than their special education peers.

Special education students in Algebra IB were observed for much fewer small group intervals than their general education classmates (7 as compared to 35). Nevertheless, the general education students in Algebra IB displayed very different behavior than their peers in Algebra IA. Both groups of students in Algebra IB had very high rates of academic responses during small group intervals when paper and pencil tasks were assigned. While the special

education students in Algebra IA had no off task behavior during small group intervals, their Algebra IB peers did display some off task behavior when paper and pencil tasks were a part of small group work and teachers were engaged in task management. In Algebra IB classes, the general education students did not exhibit any off task behavior during small group intervals.

As we described near the beginning of this report, the data from the momentary time sampling observations included in this report provides the first of three views of beginning algebra instruction in District B. The second view includes an exploration of the data collected during the anecdotal observations conducted in this district and are reported in Technical Report 8. Finally, the most comprehensive look at beginning algebra curriculum and instruction in this district appears in the District B case study.

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APPENDIX A

Project AAIMS
Student Observation System

Description, Materials, Procedures, and Training Exercises

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Iowa State University

Project AAIMS
Student Observation System Manual

Description, Materials, Procedures, and Training Exercises

Table of Contents

Project AAIMS
Student Observation System

Description

The Project AAIMS Student Observation System (SOS-AAIMS) was developed for the purpose of observing student and teacher behavior in algebra classrooms. It was designed by modifying the Project Inclusion Student Observation System (Foegen, A., Marston, D., Robinson, S. R., Deno, S. L., 1993) to reflect the elements of special education and general education algebra classrooms. The SOS-AAIMS can be used to record the behaviors of students with and without disabilities and general and special education teachers. Observers using the SOS-AAIMS also record information about instructional organization and task format.

The SOS-AAIMS uses a momentary time sampling procedure with 15 second intervals to record data. Observation sessions of 15 to 20 minutes are recommended. A group of targeted students (both general education and special education/low achieving) is observed, with each student being observed for a 1 minute interval and observations alternating between general and special education students. Using this pattern, the following target teachers/students might be observed:

15 second Interval	Target Student	Target Teacher
1	Spec. Ed. #1	Classroom tchr.
2	Spec. Ed. #1	Classroom tchr.
3	Spec. Ed. #1	Classroom tchr.
4	Spec. Ed. #1	Classroom tchr.
5	General Ed. #1	Classroom tchr.
6	General Ed. #1	Classroom tchr.
7	General Ed. #1	Classroom tchr.
8	General Ed. #1	Classroom tchr.
9	Spec. Ed. #2	Classroom tchr.
10	Spec. Ed. #2	Classroom tchr.
11	Spec. Ed. #2	Classroom tchr.
12	Spec. Ed. #2	Classroom tchr.
13	General Ed. #2	Classroom tchr.
14	General Ed. #2	Classroom tchr.
15	General Ed. #2	Classroom tchr.
16	General Ed. #2	Classroom tchr.

The following pages contain copies of the SOS-AAIMS recording forms and descriptions of the behaviors to be recorded. Observers should read the behavior descriptions carefully and memorize the definition and code letters for each category.

Student Observation System-Revised
Project AAIMS

Date of Observation_____   Time of Observation_____

Observer_____   Teacher/Classroom:_____

Student Behavior				Teacher Behavior				Instructional Organization				Task Format			
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH

Student Behavior				Teacher Behavior				Instructional Organization				Task Type			
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH
ActAc	ComBeh	OthAp	OffTsk	Aca T/L	AcaMon	TasMan	OTH	WhGrp	SmGrp	Indpt	OTH	LecDis	PapPen	CompMed	OTH

Category Definitions

Student Behavior

ActAc   **Active Academic Response:**   The student is engaging in an active response to an academic task. Examples: verbally answers a teacher's question, writes to complete an assignment or takes notes, reads aloud, presses keys on a calculator, uses manipulative materials.

CompBeh   **Competing Behavior:**   The student is engaging in an active response that is disruptive or intrusive to class activities. Behaviors such as out of seat/inappropriate place without permission; physical aggression toward other individuals, or objects, including vandalism of school property or materials; and noise are included. Examples: yells across the room to a friend, leaves desk without teacher's permission, hits another student. Key element: disrupts class activities or other students.

OthAp   **Other Appropriate:**   The student is not engaging in an active academic response or a competing behavior, but the behavior s/he is displaying is appropriate to the situation. Examples: raises hand while waiting for the teacher, listens to teacher's lecture/presentation, watches as another student demonstrates, looks at monitor displaying academic material.

OffTsk   **Off Task:**   The student is not engaging in any of the three above behaviors, therefore, s/he is not demonstrating an appropriate academic behavior, nor a competing behavior. Examples: stares off into space as teacher presents new information, draws or doodles on notebook during seatwork time, head down on desk.

   NOTE: If it is unclear whether OthAp or OffTsk, use student eye contact to judge. Example: eyes on teacher, board, or book (when appropriate), label OthAp. If eyes are elsewhere, label OffTsk.

Always code the highest possible behavior in the hierarchy. Off task will only be coded when none of the other categories can be used to describe the student's behavior.

Teacher Behavior

Aca T/L   **Academic Talk/Listening**   The teacher is talking about or presenting academic material with the entire class, a small group, or an individual student or the teacher is listening to a student's answer or question. Examples: presenting new material, asking students a question, answering student questions, providing feedback to students about the correctness of their answers, summarizing important points, writing on board or overhead. Aca T/L comments deal with the substance of the academic material (should be related to algebra concepts), rather than the structure (for example, "Do the first 20 questions" would be coded TasMan)

AcaMon   **Academic Monitoring:**   The teacher is <u>nonverbally</u> monitoring student work. Examples: Looking over a student's shoulder as s/he completes a problem or task, watches the student work a problem on the board, listens to the student read orally.

TasMan   <u>**Task Management:**</u>   The teacher's behavior relates to structuring or organizing the class activity so that `academic responses can occur. Examples: asks if everyone has their homework out, tells student to move chair to group location, turn to a specific page in the book, return to your seats. Does **NOT** include disciplinary comments on classroom behavior.

OTH   <u>**Other:**</u>   The teacher's behavior cannot be appropriately classified using any of the three behaviors above. Examples: wait time, discipline issues, reading daily announcements, speaking to principal or other visitors.

Instructional Organization

WhGrp   <u>**Whole Class:**</u>   The entire class is working as a group on the same activity. Examples: listening to lecture, discussion of content material, watching students put math problems on the board, completing example problems as part of the lesson.

SmGrp   <u>**Small Group:**</u>   The class has been divided into small groups of two or more students, working together to complete an academic task. Examples: students are working with a partner on Algebra assignment, cooperative groups are working on an Algebra problem or assignment.

Indpt   <u>**Independent:**</u>   The class has been given an assignment, and students are working individually to complete it. Examples: seat work, review prior to a test, taking a test.

OTH   <u>**Other:**</u>   The instructional organization of the classroom cannot be classified according to the above categories. If the teacher has not begun the class period or session, code the Instructional Organization as OTH.

Task Format

LecDis   <u>**Lecture/Discussion:**</u>   The current class activity requires that students listen to lecture or watch a demonstration. The class activity may also include discussion or verbal question/answer patterns between teacher(s) and students. Guided practice, as when the teacher and students are working out examples together, would also be included.

PapPen   <u>**Paper/Pencil:**</u>   The current class activity involves the use of books, workbooks, or worksheets. This should only be coded in the absence of lecture/discussion, as when students are working independently and little or no teacher/student interaction is taking place.

CompMed   <u>**Computer/Media:**</u>   The current class activity involves the use of the computer or some type of media (e.g., video, filmstrip).

OTH   <u>**Other:**</u>   The current classroom activity cannot be classified according to the categories described above. If the teacher has not begun the class and students have no activity that they are to be involved in, code the Task Format as OTH.

Directions for Marking the SOS-AAIMS Recording Form

Using the process described in the Procedures section, the observer will note the behavior of the student and the teacher, as well as the instructional organization and task format. To mark the SOS recording form, the observer should make a slash (/) through the appropriate code in each category. The categories have been designed to be mutually exclusive, so only one code should be appropriate within each of the four categories. Unless the observer missed an interval for some reason, every line of the SOS should have four slashes, one per category.

Procedures for Observing

Prior to the Observation Period

Make arrangements with the classroom teacher to do the observation. You may call or email the site coordinator at the school prior to the observation and ask them to let the involved teacher(s) know you will be observing and when. Ask that s/he introduce you (the first time you're in the class observing) as a person who wants to learn about how their class works.

You will also need to have the teacher identify the target special and general education students for you. This should be done so that the students are **NOT** aware that they are the subjects for the observation. It may be easiest to spend some time in the classroom prior to the observation period so that you can learn the names and faces of the target students. You may want to jot first names, initials, or some type of identifying code next to each one minute interval on the recording sheet. Remember to alternate between special and general education target students.

Whenever possible, arrive prior to the observation period to that you can enter the classroom during a natural transition period. If you are observing in multiple classrooms during a period this may not be possible. Position yourself to the side of the classroom, selecting a place where you will be able to see the target students. You may find it necessary to move or change position during the observation period. Select a position that will not be distracting to the students. Avoid engaging students or teachers in conversation or becoming involved in classroom activities during the observation period.

Classroom Observation Procedures

1.   In most cases, you will begin the observation when the bell rings to start the period (middle school/high school).

2.   Record the demographic information at the top of the form. Please mark your initials on each form also.
** Be sure to note characteristic of target student in margin. i.e.: boy in red striped shirt.

3.   Set recording program to fifteen second intervals. To start observing, focus on the coding sheet and listen for the first audio cue.

4.   When cue is heard, look up to locate the first special education student and observe his/her behavior (you will have 5 seconds to observe the student).   When you hear the record cue record the appropriate code (you will have 10 seconds to record the student's and teacher's behavior,

the instructional organization, and the task type). (keep eyes averted from the student and teacher until next cue is heard).

5. You will continue to observe this student for four 15 second intervals (1 minute). At the conclusion of the first minute you will move to observing the second student. You will observe this student for four 15 second intervals.

6. Continue this pattern for recording. Remember to alternate between a special education and general education student each minute.

7. If, for any reason, you must stop recording, mark the last interval coded and note the reason for stopping the observation. If the student being observed leaves the room for an extended period of time (sick and goes to nurse, sent to the principal/counselor, etc.), move to the next target student in the appropriate group (general/special education).

Following the Observation

Leave the classroom during a natural transition time or without drawing attention to yourself. If the teacher is available, thank him/her for letting you observe and indicate when you will be back again. **DO NOT INTERUPT THE TEACHER DURING CLASS**.

Double check the demographic information at the top of your recording sheet. Return the observation materials to the appropriate project staff person.

Directions for Using the SOS-AAIMS Pocket PC Program

Opening up EduMonit file on PC

1. Use the task bar to open the EduMonitor program.

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2. Select the **Open Data File** from the **File** menu. This will open the "save as" screen.

3. On the "save as" screen, enter the teacher's name, period, and date of observation. Example: Smith4th304. After you select **OK** the coding template will appear.

4. Select **Options** from the **Tools** menu. This allows you to change the defaults for the observing and/or recording interval(s). You can also change the number of intervals in the observational period.

5. Select the **Start Timer** menu from the **Tools** menu.

6. A single beep alerts you to observe. A double beep alerts you to record your observation.

7. Each column on the observation screen contains options specific to student behavior, teacher behavior, instructional organization, and task format respectively. The same categories are used as are used on the paper form of the SOS-AAIMS. The only difference is the abbreviations used.

Computerized SOS-AAIMS	Paper format of SOS-AAIMS	Category
Student Behavior		
Ac Acad	ActAc	Active Academic Response
Cp Beh	CompBeh	Competing Behavior
Ot Appr	OthAp	Other Appropriate
Off tsk	OffTsk	Off Task
Teacher Behavior		
Ac Tlk-L	Aca T/L	Academic Talk/Listening
Ac Mon	AcaMon	Academic Monitoring
Tsk Man	TasMan	Task Management
Other	OTH	Other
Instructional Organization		
Wh Cls	WhGrp	Whole Class
Sml Grp	SmGrp	Small Group
Indep	Indpt	Independent
Other	OTH	Other
Task Format		
Lect-Dis	LecDis	Lecture/Discussion
P-Penc	PapPen	Paper/Pencil
M-C-P	CompMed	Computer/Media
Other	OTH	Other

8. When selecting the type of behavior, organization, or task format simply tap on the circle before each option.

9. Save the file when exiting the program.

10. **Coding Practice Exercises**

Directions: After you have memorized the behavior categories and code letters, use this practice exercise to check your understanding of each of the four categories.

Student Behavior:

| | 1. | Bill is kicking the student next to him. |

2. Sally is watching the teacher talk to another teacher in the doorway, rather than working on her math problems.

3. Maria is writing out her algebra problems.

4. Anton is yelling at a girl across the room.

5. Jessie is staring out the door, watching students in the hallway.

6. Rob is raising his hand, waiting for the teacher to call on him.

7. Joe has his head down on the desk. He is looking out the window while the teacher is demonstrating how to do a problem on the board.

8. Sue is throwing spitwads at the students across the aisle.

9. Chen is verbally answering the teacher's question about an algebra concept.

10. Tamika is working on an algebra program on the computer.

11. DeRod is doing his science homework during Algebra class, while the teacher is explaining a new assignment.

12. Carol is drawing animals on the margins of her math notebook.

13. Fred is sitting quietly at his desk, waiting for the teacher to start the lesson.

14. Jon is working on the assignment with his math partner.

15. Ling is carving her initials in the desk.

16. Karl is watching his algebra partner demonstrate how to do a problem.

17. Mary is out of her seat during the lecture, talking to another student.

18. Kinesha is out of her seat during the lecture, sharpening her pencil. She appears to be listening and the teacher does not appear to disapprove of her actions.

19. Beth is out of her seat at the small group table as she answers the teacher's question about how to do the problem.

<u>Teacher Behavior</u>

	1.	Teacher is describing a new behavior management program to the students.
	2.	Teacher is talking to an individual student as she completes a written assignment.
	3.	Teacher is telling students to move to their small groups.
	4.	Teacher is answering a student's question about the algebra concept being presented.
	5.	Teacher is listening to the target student answer a question.
	6.	Teacher is looking over a student's shoulder at the computer monitor.
	7.	Teacher is talking with the principal in the doorway of the classroom.
	8.	Teacher is showing students how to organize the materials in their math portfolios.
	9.	Teacher is reprimanding a student who is behaving inappropriately.
	10.	Teacher is telling students to turn to page 174 in the algebra book.
	11.	Teacher is summarizing important points from the class discussion about graphing linear equations.
	12.	Teacher is demonstrating and explaining a math problem for the target student.
	13.	Teacher is listening to a student answer his question about a math problem.
	14.	Teacher is pausing during her lecture as the daily announcements are read over the public address system.
	15.	Teacher is asking students if they have finished the homework assignment that is about to be corrected.
	16.	Teacher is reading the correct answers to the math homework as students correct their own papers.
	17.	Teacher is calling on the target student to answer a question about the topic being discussed.
	18.	Teacher is praising the class for excellent behavior during the previous day's assembly.
	19.	Teacher is explaining to a student why the answer given was not correct.

<u>Instructional Organization</u>

_____	1.	The class is watching as a small group of students put answers to problems on the board.
_____	2.	The teacher has not yet started to teach and the class is not expected to be doing any particular activity.
_____	3.	Clusters of four students are working together to answer the algebra review questions at the back of the chapter.
_____	4.	Students are completing worksheets and typing their answers on the computer.
_____	5.	The teacher is leading a discussion about graphing linear equations and is asking students to graph the equation on their calculator.
_____	6.	Pairs of students are listening to each other explain how they solved the problem.
_____	7.	Individual students are completing a reading assignment in the algebra book.
_____	8.	Students are taking a math test.
_____	9.	Students are working in groups to build models of an algebraic equation.
_____	10.	Students are lining up at the door to go to an assembly.

<u>Task Format</u>

_____ 1. Students are completing algebra problems and typing their answers on the computer.

_____ 2. Students are working algebraic story problems.

_____ 3. The teacher is waiting for the announcements to be read before beginning the class.

_____ 4. Students are reading their algebra textbooks and answering questions on worksheets.

_____ 5. The class is watching a video about important concepts in algebra.

_____ 6. The teacher is using power point slides to ask students questions about the content they've just read.

_____ 7. The teacher is lecturing about solving algebra word problems.

_____ 8. Students are taking turns orally answering algebra problems.

_____ 9. Students are working on several different math tasks on a computer program.

_____ 10. Students are transitioning between whole group and independent time.

_____ 11. The class is leaving at the end of the period to go to their next class.

_____ 12. The class is watching a computer simulation about graphing algebra equations.

_____ 13. Students working individually on their homework assignment.

_____ 14. The teacher is modeling a new type of algebra problem on the board as students try the same problem at their seats.

_____ 15. The class is using their calculators to generate answers to an algebra equation.

_____ 16. Students are taking a math probe on the computer.

_____ 17. Students are waiting while the teacher speaks with the principal at the door of the classroom.

_____ 18. The teacher has stopped the class activities three minutes before the bell and students are waiting to be dismissed.

_____ 19. Students are completing an algebra test.

_____ 20. The teacher is lecturing about integers.

Answers to Coding Practice Exercises

Student Behavior	Teacher Behavior	Instructional Organ.	Task Format
1. ComBeh	1. OTH	1. WhGrp	1. CompMed
2. OffTsk	2. AcaMon	2. OTH	2. PapPen
3. ActAc	3. TasMan	3. SmGrp	3. OTH
4. ComBeh	4. Aca T/L	4. Indpt	4. PapPen
5. OffTsk	5. Aca T/L	5. WhGrp	5. CompMed
6. OthAp	6. AcaMon	6. SmGrp	6. CompMed
7. OffTsk	7. OTH	7. Indpt	7. LecDis
8. ComBeh	8. TasMan	8. Indpt	8. LecDis
9. ActAc	9. OTH	9. SmGrp	9. CompMed
10. ActAc	10. AcaMon	10. OTH	10. OTH
11. OffTsk	11. Aca T/L		11. OTH
12. OffTsk	12. Aca T/L		12. CompMed
13. OthAp	13. Aca T/L		13. PapPen
14. ActAc	14. OTH		14. LecDis
15. OffTsk	15. AcaMon		15. LecDis
16. OthAp	16. TasMan		16. CompMed
17. ComBeh	17. Aca T/L		17. OTH
18. OthAp	18. OTH		18. OTH
19. ActAc	19. Aca T/L		19. PapPen
			20. LecDis

APPENDIX B

			Student Behavior											
Course	**Instructional Organization**	**Task Format (down)**	Active Academic Response				Other Appropriate Behavior				Off Task			
		Teacher Behavior (across)	ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Alg IA	Whole Class	Lecture/ Discussion	19%	<1%	1%	1%	45%	1%	10%	1%	14%	<1%	1%	<1%
		Paper-Pencil	<1%	<1%	0%	<1%	<1%	<1%	1%	<1%	0%	<1%	<1%	<1%
		Computer/ Media	<1%	<1%	0%	0%	<1%	0%	1%	0%	<1%	0%	<1%	0%
		Other	0%	0%	<1%	0%	<1%	0%	2%	<1%	0%	0%	<1%	0%
	Small Group	Lecture/ Discussion	0%	0%	0%	0%	8%	2%	5%	2%	0%	0%	0%	0%
		Paper-Pencil	9%	11%	2%	0%	12%	15%	8%	2%	9%	15%	2%	0%
		Computer/ Media	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Independent Work	Lecture/ Discussion	<1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Paper-Pencil	21%	6%	7%	7%	15%	5%	9%	5%	7%	2%	6%	2%
		Computer/ Media	1%	2%	<1%	<1%	1%	2%	<1%	<1%	1%	1%	<1%	0%
		Other	0%	0%	0%	0%	0%	0%	<1%	0%	0%	0%	0%	0%

Student Behavior by Course, Instructional Organization, Task Format, and Teacher Behavior															
Course	**Instructional Organization**	**Task Format (down)**	**Student Behavior**												
			Active Academic Response				Other Appropriate Behavior				Off Task			
		Teacher Behavior (across)	ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Alg IB	Whole Class	Lecture/ Discussion	23%	<1%	1%	<1%	49%	<1%	7%	<1%	6%	0%	1%	0%
		Paper-Pencil	1%	0%	0%	0%	2%	0%	<1%	0%	0%	0%	0%	0%
		Computer/ Media	<1%	<1%	0%	<1%	<1%	0%	1%	1%	0%	0%	0%	0%
		Other	0%	0%	<1%	1%	0%	0%	4%	2%	0%	0%	1%	0%
	Small Group	Lecture/ Discussion	0%	0%	2%	0%	0%	0%	7%	0%	0%	0%	0%	0%
		Paper-Pencil	55%	2%	21%	0%	0%	0%	2%	0%	0%	0%	2%	0%
		Computer/ Media	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%
		Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Independent Work	Lecture/ Discussion	0%	0%	0%	0%	0%	0%	0%	0%	<1%	0%	0%	0%
		Paper-Pencil	10%	1%	19%	2%	9%	1%	15%	3%	2%	<1%	11%	1%
		Computer/ Media	5%	7%	3%	3%	2%	1%	2%	1%	<1%	<1%	0%	<1%
		Other	0%	0%	0%	0%	0%	0%	2%	<1%	0%	0%	<1%	0%

ATL = Academic Talk/Listening   AM = Academic Monitoring   TM = Task Management   OTH = Other

Student Behavior by Course, Instructional Organization, Task Format, Teacher Behavior, and Student Classification														
Course	Instructional Organization		Student Behavior											
		Task Format (down)	Active Academic Response				Other Appropriate Behavior				Off Task			
		Teacher Behavior (across)	ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Algebra IA														
General Education Students	Whole Class	Lecture/ Discussion	21%	<1%	2%	0%	47%	1%	9%	1%	10%	<1%	1%	<1%
		Paper-Pencil	<1%	0%	0%	0%	0%	<1%	1%	<1%	0%	<1%	<1%	<1%
		Computer/ Media	<1%	<1%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%
		Other	0%	0%	<1%	0%	0%	0%	3%	0%	0%	0%	0%	0%
	Small Group	Lecture/ Discussion	0%	0%	0%	0%	7%	3%	7%	3%	0%	0%	0%	0%
		Paper-Pencil	0%	0%	0%	0%	10%	3%	7%	3%	20%	33%	3%	0%
		Computer/ Media	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Independent Work	Lecture/ Discussion	<1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Paper-Pencil	19%	5%	6%	8%	21%	7%	9%	5%	4%	1%	5%	2%
		Computer/ Media	1%	2%	<1%	0%	1%	1%	<1%	<1%	1%	1%	0%	0%
		Other	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	<1%	<1%

Student Behavior by Course, Instructional Organization, Task Format, Teacher Behavior, and Student Classification														
Course	**Instructional Organization**		**Student Behavior**											
		Task Format (down)	Active Academic Response				Other Appropriate Behavior				Off Task			
		Teacher Behavior (across)	ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Algebra IA														
Special Education Students	Whole Class	Lecture/ Discussion	17%	0%	1%	1%	42%	1%	10%	1%	19%	0%	1%	1%
		Paper-Pencil	<1%	<1%	0%	<1%	1%	1%	1%	1%	0%	0%	<12%	0%
		Computer/ Media	1%	<1%	0%	0%	<1%	0%	1%	0%	<1%	0%	<1%	0%
		Other	0%	0%	0%	0%	<1%	0%	1%	<1%	0%	0%	<1%	0%
	Small Group	Lecture/ Discussion	0%	0%	0%	0%	9%	0%	3%	0%	0%	0%	0%	0%
		Paper-Pencil	17%	20%	3%	0%	14%	26%	9%	0%	0%	0%	0%	0%
		Computer/ Media	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Independent Work	Lecture/ Discussion	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Paper-Pencil	22%	8%	7%	7%	10%	4%	8%	6%	9%	3%	6%	2%
		Computer/ Media	1%	2%	<1%	<1%	1%	2%	<1%	<1%	1%	<1%	<1%	0%
		Other	0%	0%	0%	0%	0%	0%	<1%	0%	0%	0%	0%	0%

ATL = Academic Talk/Listening   AM = Academic Monitoring   TM = Task Management   OTH = Other

Student Behavior by Course, Instructional Organization, Task Format, Teacher Behavior, and Student Classification														
Course	**Instructional Organization**		**Student Behavior**											
		Task Format (down)	Active Academic Response				Other Appropriate Behavior				Off Task			
		Teacher Behavior (across)	ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Alg IB														
General Education Students	Whole Class	Lecture/ Discussion	27%	0%	1%	<1%	45%	0%	8%	<1%	4%	0%	1%	0%
		Paper-Pencil	1%	0%	0%	0%	2%	0%	<1%	0%	0%	0%	0%	0%
			<1%	0%	0%	0%	<1%	0%	1%	2%	0%	0%	0%	0%
		Other	0%	0%	<1%	1%	0%	0%	4%	2%	0%	0%	1%	0%
	Small Group	Lecture/ Discussion	0%	0%	3%	0%	0%	0%	6%	0%	0%	0%	0%	0%
		Paper-Pencil	54%	0%	26%	0%	0%	0%	3%	0%	0%	0%	0%	0%
		Computer/ Media	0%	0%	0%	0%	0%	0%	9%	0%	0%	0%	0%	0%
		Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Independent Work	Lecture/ Discussion	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Paper-Pencil	6%	1%	15%	2%	12%	1%	16%	4%	1%	1%	12%	<1%
		Computer/ Media	6%	9%	3%	4%	1%	1%	2%	1%	0%	<1%	0%	<1%
		Other	0%	0%	0%	0%	0%	0%	2%	<1%	0%	0%	<1%	0%

Student Behavior by Course, Instructional Organization, Task Format, Teacher Behavior, and Student Classification															
Course	**Instructional Organization**		**Student Behavior**												
		Task Format (down)	Active Academic Response				Other Appropriate Behavior				Off Task			
		Teacher Behavior (across)	ATL	AM	TM	OTH	ATL	AM	TM	OTH	ATL	AM	TM	OTH
Algebra IB														
Special Education Students	Whole Class	Lecture/ Discussion	18%	<1%	<1%	<1%	54%	<1%	6%	0%	7%	0%	<1%	0%
		Paper-Pencil	<1%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
		Computer/ Media	<1%	<1%	0%	<1%	<1%	0%	1%	1%	0%	0%	0%	0%
		Other	0%	0%	<1%	1%	0%	0%	5%	2%	0%	0%	<1%	0%
	Small Group	Lecture/ Discussion	0%	0%	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%
		Paper-Pencil	57%	14%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%
		Computer/ Media	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Independent Work	Lecture/ Discussion	0%	0%	0%	0%	0%	0%	0%	0%	<1%	0%	0%	0%
		Paper-Pencil	15%	1%	23%	2%	6%	<1%	14%	3%	2%	<1%	9%	1%
		Computer/ Media	4%	5%	2%	2%	2%	2%	2%	2%	1%	0%	0%	<1%
		Other	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%

ATL = Academic Talk/Listening   AM = Academic Monitoring   TM = Task Management   OTH = Other