PROJECT AAIMS: ALGEBRA ASSESSMENT AND INSTRUCTION – MEETING STANDARDS
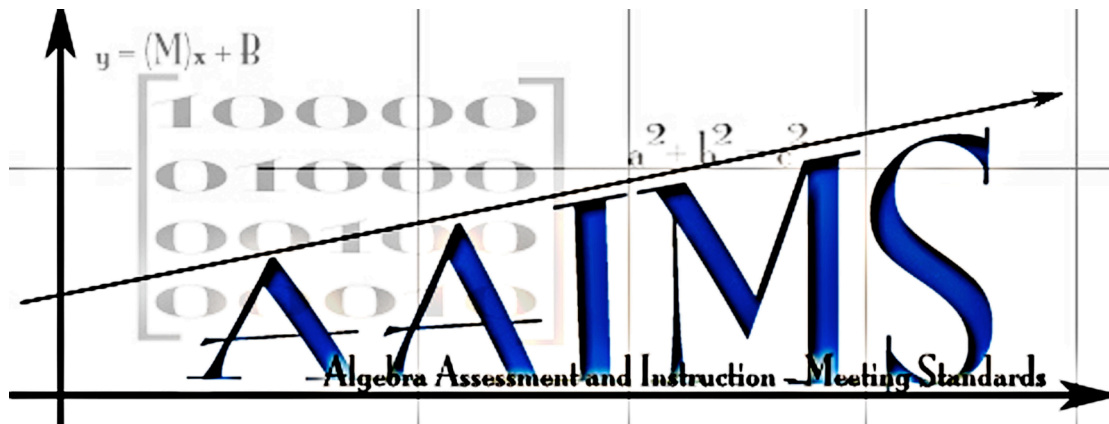

Classroom Observation Data for District C:

Momentary Time Sampling

Technical Report #5

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June 2006

Executive Summary

This report documents the results of momentary time sampling observations conducted in District C during the fall of 2004. It identifies typical student and teacher behaviors, as well as typical instructional organization patterns and task formats in Algebra I classes in this district. We found that District C beginning algebra teachers devoted nearly equal amounts of class time to whole class and independent work. These teachers spent about one half of the time we observed engaged in talking to their students about algebra or listening to students' questions or comments about the day's lesson. Their students were assigned paper and pencil tasks for more than half of the observational intervals and were expected to listen to lectures or participate in discussions for slightly more than 40% of the time. The most typical student behavior was listening to teachers (or displaying some other appropriate behavior) with taking notes, working on an assignment, or answering a teacher's question (all active academic responses) as the second most typical type of student behavior.

For the most part, typical general education students and their low achieving peers displayed similar types of behavior during our observations. For many of the comparisons low achieving students displayed more off task behavior than their typical peers. The most interesting difference between these two groups of students occurred during small group paper and pencil activities. Under this condition low achieving students were more actively engaged in the algebra task and displayed less off task behavior than their typical peers.

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

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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.

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 C during the fall of 2004. This is the third 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 types 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 (see Project AAIMS Technical Report 1, Olson, Foegen, & Lind, 2006) because they have separate general education and special education algebra classes. This was not the case in District B or C; 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 C serves five small towns and a Native American settlement. Approximately 17,700 people reside in the school district. The senior high school has an enrollment of about 450 students; about 15 percent of these students receive special education services. Approximately 44 percent of the district's students are eligible for free and reduced lunch, and 25 percent are of diverse backgrounds in terms of race, culture and ethnicity.

Four terms of math are required for graduation in District C. Because there are many different math options, students are not required to take Algebra I to graduate. Nevertheless, a majority of the students take Algebra I before they graduate. Students also have the option of taking Algebra I during eighth grade. These students take this class in a different building; therefore, they were not included in this study.

This district operates on a block schedule with four 90 minute periods each day. The Algebra I classes that we observed are designed to take one half of the academic year while addressing content that would be the equivalent of a full year Algebra I class in a district with a traditional schedule. There was one Algebra class at the high school that spread the Algebra I content out over the full academic year, but this class was taught by a teacher not participating in this study. Although the majority of general education students took Algebra I in ninth grade, there were some 10th, 11th, and 12th grade students enrolled in algebra in District C.

Participants

The participants included in this study included general education teachers and general education students. Two Algebra I teachers from District C 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. The two participating general education algebra teachers held initial Iowa teacher's licenses with 7-12 mathematics endorsements. Both had earned Bachelor's degrees and had one year of teaching experience. Two special education teachers also consented to be part of this project, but they did not teach any classes that were observed for this study.

Students. Student participants included youth in the ninth through twelfth grade who were currently enrolled in Algebra I. We hoped to have general education and special education students participate in this study; however, there were no special education students enrolled in the algebra classes taught by the District C teachers who chose to participate in Project AAIMS during Fall 2004. When we conducted the observations in the other two schools we chose to observe a low achieving student whenever there were no special education students in a class on a particular day. We included the data for these students with the data for special education students. Since we do not have any data for special education students in District C, we have compared the behavior of typical general education students with that of low achieving general education students for all of the analyses included in this report.

Instruments and Measures

A primary objective of this study was to describe the types of instructional interactions occurring in 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.)

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 taking 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 alternated between a typical general education student and a low achieving general education student.

Observation Schedule

Observations spanned a five-week period with three observations occurring in each of the three algebra classes participating in this study to ensure that representative samples of classroom activities were reflected in the data. Most of the observations were conducted in October and November 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 because two of the nine 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 2 checks was 95%; individual agreement rates for each of the checks were 95%, and 94%.

Table 1. Observation Schedule

Observation	Alg I Teacher 1 Period 1	Alg I Teacher 2 Period 1	Alg I Teacher 2 Period 4
Obs 1	10/28/04	10/28/04	10/28/04
Obs 2	11/04/04	11/04/04	11/04/04
Obs 3	11/23/04	11/23/04	11/23/04

Results

Nine class periods were observed. All of the observations were conducted in general education algebra classrooms. Of the 2498 observational intervals recorded, 1,260 intervals (50.4%) focused on typical general education students while 1,238 (49.6%) focused on low achieving students.

Instructional Organization

We started analyzing the data by examining the instructional organization of the class periods that were observed. Algebra I teachers in District C spent nearly equal amounts of time using whole class instruction (40%) and independent work (41%). Small groups were used during 18% of the observational intervals, and about 2% of the time the instructional organization was labeled "other."

Task Format

Next, we examined the task formats used during the observations conducted in District C. The data on task format revealed that paper/pencil activities and lectures/discussions were the most common task formats, accounting for 97% of the observational intervals. Students were assigned paper and pencil activities during slightly more than half of the class time (55%). During our observations, teachers lectured or led discussions during 42% of the observational intervals and used computers or other media as learning tools in their algebra classes for five observational intervals, which is less than 1% of the total number of these intervals. Only three percent of the time was spent doing tasks that were labeled "other."

Teacher Behavior

The third dimension of the SOS-AIMS that was examined was teacher behavior. An analysis of teacher behavior indicated that teachers in District C spent the most time engaged in academic talk/listening (52%). Twenty-two percent of the observational intervals were devoted to task management, 15% were labeled "other," and 12% were characterized as academic monitoring. Combining the academic talk/listening and academic monitoring categories to make a composite "instruction" category, one can see that teachers spent almost two-thirds of their time engaged in instructional activities.

Student Behavior

The last aspect of the SOS-AAIMS to be considered was student behavior. Students were engaged in active academic responses (40%) or other appropriate behavior (45%) for most of the observational intervals. There was some off task behavior (15%) and no competing behavior displayed during this study. Table 2 provides a summary of student behavior, with the results disaggregated by typical general education and low achieving students.

Table 2. Summary of Student Behavior

Participants	Student Behavior			
	Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra I – All students	40%	45%	15%	0%
Algebra I – Typical Students	40%	48%	12%	0%
Algebra I – Low Achieving Students	40%	42%	18%	0%

As one can see from the table, typical general education and low achieving students displayed active academic responses during the same percentage of observational intervals. There was slightly more "other appropriate behavior" exhibited by typical general education students and slightly more off task behavior displayed by low achieving students. When the active academic response percentages are added to the other appropriate behavior percentages to form an "on task" category, we found that the typical general education students were on task for 88% of the observational intervals while their low achieving peers were on task for 82% of these intervals.

Exploring Interactions Among Observational Variables

Instructional Organization and Task Format

In addition to summarizing the data within each of the four observational categories, we were also interested in studying the interactions between the different variables. Table 3 shows the percentages for the combination of instructional organization and task format. As one might guess, the most common whole class activities were lectures/discussions (96%). The most typical task when teachers used small groups was a paper and pencil assignment (76%); however, it is important to note that almost one quarter of small group time was devoted to lectures and discussions. During almost all (99%) of the intervals labeled "independent work" a paper and pencil activity was assigned. About one percent of independent work time was spent doing computer/media tasks.

Table 3. Task Formats During Different Instructional Organization Patterns

Class Type	Instructional Organization	Task Format			
		Lecture/ Discussion	Paper-pencil	Computer/ Media	Other
Algebra I	Whole Class	96%	1%	0%	3%
	Small Group	24%	76%	0%	<1%
	Independent Work	<1%	99%	1%	1%
	Other	0%	0%	0%	100%

Instructional Organization and Teacher Behavior

Table 4 includes our findings when we examined the kinds of teacher behaviors that were typical during each type of instructional organization. We found that academic talk and listening was the most common teacher behavior during whole class (85%) and small group activities (57%), while task management was the most typical teacher behavior during independent work (35%). The greatest amount of academic monitoring occurred during small group work (28%).

Teachers showed the most variation in their behaviors during independent work times, with a fair amount of time devoted to academic talk and listening (19%) and academic monitoring (16%), and at least 30% of the observational intervals engaged in "other" behaviors (30%) or task management (35%).

Table 4. Teacher Behavior During Different Instructional Organization Patterns

Class Type	Instructional Organization	Teacher Behavior			
		Academic Talk/Listen	Academic Monitoring	Task Management	Other
Algebra I	Whole Class	85%	1%	12%	3%
	Small Group	57%	28%	11%	4%
	Independent Work	19%	16%	35%	30%
	Other	5%	11%	18%	66%

Instructional Organization and Student Behavior

The percentages for the different kinds of student behavior during different instructional organization patterns are shown in Table 5. In District C the most typical student behavior during whole class activities was "other appropriate behavior" (70%). During small group activities, there was much more variation in student behavior, with active academic responses exhibited during 40% of these observational intervals; other appropriate behavior was the second most prevalent student behavior (36%). Students were off task for almost one-quarter (24%) of the small group intervals. The most active academic responses (63%) were evident during intervals coded "independent work". When we combined the percentages for active academic responses and other appropriate behavior to form an "on task" category, both whole class and independent work intervals had a very high percentage of on task behavior (87%). Even during small group intervals, students were on task for three-quarters (76%) of this time.

Table 5. Student Behaviors During Different Instructional Organization Patterns

Class Type	Instructional Organization	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra I	Whole Class	17%	70%	14%	0%
	Small Group	40%	36%	24%	0%
	Independent Work	63%	24%	12%	0%
	Other	3%	68%	29%	0%

As one can see from Table 6, when we compared the behavior of typical general education students with the behavior of the low achieving peers, we found similar results for whole class and independent work intervals, but greater differences during small group activities. For both groups of students, the most common behavior during whole class activities was other appropriate behavior (72% and 68%, respectively). The second most common behavior was active academic response (18% and 15%, respectively.) Low achieving students engaged in more off task behavior than their typical peers (17% and 10%). This difference is reflected in the

difference of on task behavior displayed by these two groups of students with typical students displaying on task behavior during 90% of the whole class intervals, and low achieving students exhibiting on task behavior during 83% of these intervals.

During small group activities low achieving students were more likely to show active academic responses than their typical general education peers (46% and 34%, respectively). When we considered on task behavior, the low achieving students were on task for 81% of the small group intervals, while the typical students were on task for only 71% of these intervals, which means they were off task for more than one-quarter (28%) of all small group observational intervals.

The pattern of student behavior during independent work is similar for typical general education students and low achieving students with active academic responses being the most prevalent student behavior (65% and 61%, respectively) and other appropriate behavior (28% and 20%, respectively) being the second most common behavior. Nevertheless, low achieving students were more than twice as likely as their typical peers to exhibit off task behavior during independent work time (18% vs. 7%, respectively). This is very evident when we look at the on task percentages for these two groups of students with typical general education students displaying on task behavior during 93% of the independent work intervals, and low achieving students displaying on task behavior during 81% of these intervals.

Table 6. Student Behavior by Instructional Organization and Student Classification

Class Type	Instructional Organization	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra I					
Typical Students	Whole Class	18%	72%	10%	0%
	Small Group	34%	37%	28%	0%
	Independent Work	65%	28%	7%	0%
	Other	5%	79%	16%	0%
Low Achieving Students	Whole Class	15%	68%	17%	0%
	Small Group	46%	35%	19%	0%
	Independent Work	61%	20%	18%	0%
	Other	0%	58%	42%	0%

The greatest differences between the behavior of typical general education students and low achieving general education students occur when the instructional organization is labeled "other." Under these conditions, the amount of off task behavior exhibited by low achieving general education students increased to 42% as compared to 16% for typical general education students.

Task Format and Teacher Behavior

Table 7 includes the data from the cross tabulation of task format and teacher behavior. As one might guess, teachers were engaged in the most academic talk/listening during lectures and discussions (84%). Relatively little time was spent engaged in academic monitoring or task management activities during lecture or discussion intervals (4% and 9%, respectively). In District C, academic talk and listening was the second most common teacher behavior during pencil and paper activities (29%). This percentage was only one percentage point less than task management (30%). An equal amount of time was devoted to academic talk/listening and academic monitoring during intervals that used computers or other types of media to teach the day's lesson (20%, which was one out of five intervals).

Table 7. Teacher Behavior during Different Task Formats

Course	Task Format	Teacher Behavior			
		Academic Talk/Listen	Academic Monitoring	Task Management	Other
Algebra I	Lecture/Discussion	84%	4%	9%	3%
	Paper-Pencil	29%	18%	30%	24%
	Computer/Media	20%	20%	0%	60%
	Other	4%	5%	57%	34%

When we combined the academic talk/listen category and the academic monitoring category to make an "instruction" category, we found far more teacher time devoted to instruction during lectures and discussion (88%) than in any other task format. Forty-seven percent of the paper and pencil intervals were devoted to instruction, while forty percent of the computer/media intervals fit into the combined "instruction" category.

Task Format and Student Behavior

The next set of interactions we examined compared student behavior during different task formats. Table 8 provides a summary of the data related to this combination of observational categories. Other appropriate behavior was the most prevalent student behavior during intervals that were lectures and discussions (68%) or when some kind of media was used (100%). There were more active academic responses (59%) than any other type of student behavior during intervals where paper and pencil tasks were assigned. When we examined on task behavior

Table 8. Student Behavior During Different Task Formats

Course	Task Format	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra I	Lecture/ Discussion	18%	68%	14%	0%
	Paper/ Pencil	59%	25%	16%	0%
	Computer/ Media	0%	100%	0%	0%
	Other	1%	84%	15%	0%

during the different task formats, we found that student were on task for at least 84% of the intervals under any condition. The 100% on task percentage for computer/media is based on only five intervals when this type of format was used. The on task percentage of 86% for lectures and discussions was based on 1052 intervals and the 84% for paper and pencil activities was based on 1366 intervals. All of the off task percentages were very similar.

Table 9 shows the data for the cross tabulation of student behavior and task format by type of student in Algebra I in District C. The percentage of intervals classified as active academic responses was very similar for typical and low achieving general education students for each of the different task formats. There was a bit more variation when we compared other appropriate behavior and off task behavior.

For lectures and discussions, both typical and low achieving general education students displayed other appropriate behavior for a majority of these intervals (70% and 67%, respectively). For typical students, there were almost twice as many intervals when they displayed active academic responses (19%) as compared to intervals when the coded student behavior was off task (10%), while the low achieving students had equal amounts of active academic responses and off task behavior (17%).

The percentage of active academic responses for typical and low achieving students in Algebra I was nearly the same (58% and 59%, respectively) during paper and pencil intervals. However, low achieving students were less likely to display other appropriate behavior (21% as compared to 28%) and more likely to exhibit off task behavior (19% as compared to 14%) than their typical peers when a paper and pencil task was assigned.

Table 9. Student Behaviors by Task Format and Student Classification

Course and Student Classification	Task Format	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off–Task	Competing Behavior
Algebra I					
Typical Students	Lecture/ Discussion	19%	70%	10%	0%
	Paper/ Pencil	58%	28%	14%	0%
	Computer/ Media	0%	100%	0%	0%
	Other	2%	90%	7%	0%
Low Achieving Students	Lecture/ Discussion	17%	67%	17%	0%
	Paper/ Pencil	59%	21%	19%	0%
	Computer/ Media	0%	100%	0%	0%
	Other	0%	76%	24%	0%

When we looked at the combined "on task" category, we found that with the exception of computer/media intervals, the typical students were more likely to display on task behavior during lectures and discussions (89% as compared to 84%), as well as paper and pencil activities

(86% as compared to 80%) than their low achieving peers. Low achieving students showed the most off task behavior when the task format was labeled "other". For nearly one-quarter of these intervals, low achieving students displayed off task behavior.

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 most closely associated with active academic responses by students in our observations. Table 10 shows the results from a cross tabulation analysis of teacher and student behaviors for Algebra I in District C.

Table 10. Student Behaviors Associated with Different Teacher Behaviors

Course	Teacher Behavior	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra I					
	Academic Talk/Listening	27%	54%	19%	0%
	Academic Monitoring	58%	32%	11%	0%
	Task Management	43%	47%	10%	0%
	Other	64%	24%	12%	0%

For this school district, the teacher behavior with the greatest percentage of active academic responses was "other" (64%), which was followed by academic monitoring (58%) and task management (43%). Academic talk/listening was associated with active academic responses for 27% of the observational intervals. When we looked at on task percentages, we found the same rate of on task behavior for intervals when teacher behavior was coded "academic monitoring" or "task management" (90%), while the on task percentage was 88% for intervals when the teacher was engaged in "other" activities and 81% when teacher behavior was labeled "academic talk or listening." At first glance we were surprised by the percentage for active academic responses when teacher behavior was labeled "other." However, when we looked back at earlier comparisons we noted that 30% of the independent work intervals were associated with "other" teacher behaviors (see Table 4) and 63% of independent work intervals were associated with active academic responses by students (see Table 5); consequently, this finding made more sense. In addition, when we examined the anecdotal records, we found that teachers in this district would often get students started on a written assignment and then work on grading papers or use their computer, which would both be labeled "other" teacher behaviors, while the students were actively engaged in completing the assignment.

To see if there were any differences between the behaviors displayed by typical general education students and low achieving general education students in this district we cross tabulated student and teacher behavior for the two categories of students. The data for these comparisons are shown in Table 11.

We first examined students' behavior when teacher behavior was labeled "academic talk/listening." Student behavior followed a similar pattern for both groups of students with the most prevalent behavior being other appropriate behavior, followed by active academic responses, and then off task behavior during intervals when the teacher was talking or listening to students. Under this condition, low achieving students were less likely to display active academic responses or other appropriate behavior, but more likely to exhibit off task behaviors than their classmates.

Table 11. Student Behavior by Student Classification During Different Teacher Behaviors

Course and Student Classification	Teacher Behavior	Student Behavior			
		Active Academic Response	Other Appropriate Behavior	Off Task	Competing Behavior
Algebra I					
Typical Students	Academic Talk/Listening	26%	58%	16%	0%
	Academic Monitoring	61%	32%	7%	0%
	Task Management	44%	48%	8%	0%
	Other	65%	26%	9%	0%
Low Achieving Students	Academic Talk/Listening	29%	49%	22%	0%
	Academic Monitoring	54%	32%	14%	0%
	Task Management	42%	45%	13%	0%
	Other	62%	22%	16%	0%

Next, we looked at student behavior during intervals when teacher behavior was coded "academic monitoring." Once again, the most common student behaviors displayed by typical and low achieving students followed the same pattern. In this case the most common student behavior was active academic responses, followed by other appropriate behavior, and then off task behavior. Although the pattern was the same, low achieving students engaged in off task behavior twice as often as their classmates during academic monitoring (14% as compared to 7%).

Task management was the third category of teacher behavior we considered. Relatively similar percentages of active academic responses and other appropriate behavior were displayed by typical general education students and their low achieving peers during task management intervals. Low achieving students exhibited slightly more than one and one half times more off task behavior when teachers were engaged in task management activities (13% as compared to 8%).

When active academic responses and other appropriate behavior were combined to make an "on task" category, typical general education students always displayed more on task behavior

than their low achieving peers. Typical general education students were on task for more than 90% of the academic monitoring (93%) and task management (92%) intervals, while their low achieving peers were on task for at least 86% of these intervals. For both groups there was less on task behavior during academic talk/listening intervals (84% for typical students and 78% for low achieving students).

Instructional Organization, Teacher Behavior, and Student Behavior

Table 12 includes the data for the comparisons of student behavior during different instructional organization patterns and teacher behaviors. During whole class activities, which accounted for 40% of all the observational intervals, the most prevalent combination of student and teacher behavior was other appropriate behavior while teachers were talking or listening (57%), the next most common combination was active academic response during teacher talk/listening (16%), and the third most frequent combination was off task behavior when teachers were talking or listening (12%).

When the instructional organization was classified as small group, which was used during 18% of the observational intervals, the most typical combination of student and teacher behavior was active academic response during academic talk and listening (23%). The second most common combination was off task behavior and academic talk and listening (18%). The third most prevalent combination was other appropriate behavior and during academic talk and listening (16%).

During independent work (41% of the intervals) students exhibited active academic responses in three of the four most frequent combinations. Students showed active academic responses when teachers were engaged in "other" teacher behaviors for 23% of the independent work intervals. When teachers were involved in task management, students exhibited active academic responses 21% of this time. During 11% of these intervals students displayed active academic responses while teachers were doing academic monitoring. Students also engaged in other appropriate behavior for 11% of the independent work intervals while teachers were managing tasks.

When we examined the data to see if there were any differences in the behavior of low achieving general education students and typical general education students when different instructional organization patterns were employed, the first two most common combinations of student and teacher behaviors were the same for both groups of students during whole class and independent work intervals; however, during small group activities, the behavior patterns showed more variability (See Table 13.). For intervals when the instructional organization was "whole class" the most common combination of student and teacher behaviors were other appropriate behavior during academic talk and listening (60% for typical students and 54% for low achieving students), and the next most prevalent combination was active academic responses with teacher talk and listening (17% for typical students and 15% for low achieving students). For typical students the third most common combination during whole class intervals was other appropriate behavior by students while the teacher was managing tasks (10%). For their low achieving peers, the third most prevalent combination was off task student behavior when teachers were talking or listening (15%).

Table 12. 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 I	Whole Class	16%	0%	<1%	0%	57%	1%	10%	2%	12%	0%	1%	1%
	Small Group	23%	12%	4%	2%	16%	13%	6%	1%	18%	3%	2%	1%
	Independent Work	9%	11%	21%	23%	5%	3%	11%	5%	5%	2%	3%	2%
	Other	3%	0%	0%	0%	0%	11%	18%	39%	3%	0%	0%	26%

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

Table 13. 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 1													
Typical Students	Whole Class	17%	0%	1%	0%	60%	1%	10%	2%	8%	0%	1%	0%
	Small Group	18%	11%	3%	2%	17%	12%	7%	1%	22%	4%	2%	1%
	Independent Work	8%	13%	21%	24%	7%	2%	12%	7%	3%	<1%	2%	1%
	Other	5%	0%	0%	0%	0%	21%	26%	32%	0%	0%	0%	16%
Low Achieving Students	Whole Class	15%	0%	0%	0%	54%	<1%	11%	2%	15%	0%	2%	0%
	Small Group	27%	14%	4%	1%	15%	13%	5%	2%	14%	2%	2%	1%
	Independent Work	10%	10%	21%	22%	3%	3%	11%	4%	7%	3%	4%	4%
	Other	0%	0%	0%	0%	0%	0%	11%	47%	5%	0%	0%	37%

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

During independent work times, the most typical student behavior for both groups was active academic responses during times when the teacher behavior was coded "other" (24% for typical students and 22% for low achieving students). The next most common combination was active academic responses during task management intervals (21% for both groups). Different combinations were the third most frequent combination of student and teacher behaviors for typical students and low achieving students. For typical general education students, the third combination was active academic responses with academic monitoring, while other appropriate behavior and task management were the third most prevalent combination for low achieving students during independent work.

Small group activities were associated with the greatest differences between typical and low achieving general education algebra students. The most common combination for typical students was off task behavior while teachers were talking or listening (22%). This was followed by active academic responses during academic talk or listening (18%), and then other appropriate behavior and academic talk and listening (17%). For low achieving students, the most typical combination was active academic responses with academic talk/listening (27%), followed by other appropriate behavior during academic talk and listening (15%), and then active academic response coupled with academic monitoring and off task behavior while teachers were talking or listening (14% for both combinations).

Task Format, Teacher Behavior, and Student Behavior
The most common combinations of student behavior and teacher behavior during lectures and discussions were the same as the most typical combinations for whole class activities. (See Table 14.) During lectures and discussions students displayed other appropriate behavior while teachers were engaged in academic talk or listening 57% of this time. They exhibited active academic responses while teachers were talking or listening for 16% of these intervals, and during 12% of the time devoted to lectures and discussions, they were off task as their teachers talked or listened.

When we examined the data for paper and pencil activities, the top three combinations included active academic responses by students. This was similar to the results for the instructional organization pattern labeled "independent work." In both cases the most common combination was active academic response with "other" teacher behavior (18% for paper and pencil activities and 23% for independent work). The second most prevalent combination was also the same – active academic response and task management (17% for paper and pencil activities, and 21% for independent work). The third most typical combination for paper and pencil activities was not the same as that for independent work. Instead, this combination was active academic response with academic talk and listening (13%).

Although computers or other media were only used for five intervals, it is interesting to see that the combinations with the top three percentages include other appropriate behavior on the part of the students, with the most common combination being "other" teacher behavior with other appropriate behavior by the students (60%). Two combinations were observed during twenty percent of the computer/media intervals. These were academic talk and listening by teachers and other appropriate behavior by students and academic monitoring by teachers and other appropriate behavior by students.

Table 14. Student Behavior by Task Format and Teacher Behavior

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 I	Lecture/ Discussion	16%	1%	<1%	<1%	57%	3%	7%	2%	12%	0%	1%	1%
	Paper Pencil	13%	11%	17%	18%	7%	4%	10%	4%	9%	2%	3%	2%
	Computer/ Media	0%	0%	0%	0%	20%	20%	0%	60%	0%	0%	0%	0%
	Other	1%	0%	0%	0%	1%	5%	57%	21%	1%	0%	0%	14%

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

Table 15. 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 1													
Typical Students	Lecture/ Discussion	17%	1%	<1%	<1%	60%	3%	6%	2%	8%	0%	1%	1%
	Paper Pencil	11%	12%	17%	18%	8%	4%	11%	5%	9%	1%	2%	1%
	Computer/ Media	0%	0%	0%	0%	25%	0%	0%	75%	0%	0%	0%	0%
	Other	2%	0%	0%	0%	2%	10%	63%	15%	0%	0%	0%	7%
Low Achieving Students	Lecture/ Discussion	15%	1%	1%	0%	53%	3%	8%	2%	15%	0%	2%	<1%
	Paper Pencil	15%	11%	17%	17%	5%	4%	9%	3%	9%	3%	4%	3%
	Computer/ Media	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%
	Other	0%	0%	0%	0%	0%	0%	48%	27%	3%	0%	0%	2%

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

When we further examined the data by looking at the behaviors displayed by typical general education students and low achieving students, we found that the top three combinations of student and teacher behaviors during specific task formats were the same for both groups of students. (See Table 15.) For lectures and discussions, by far the most common combination for both groups of students was other appropriate behavior and academic talk and listening (60% for typical students and 53% for low achieving students). The next most common combination was active academic responses during academic talk and listening (17% for typical students and 15% for low achieving students). The third most common combination was off task behavior during academic talk and listening; however, low achieving students displayed off task behavior almost twice as often as their peers during the academic talk and listening that was a part of a lecture or discussion (15% as compared to 8%).

For paper and pencil activities, the top two combinations were the same and the percentages for each group were also very close for each of these combinations. Active academic responses occurred with "other" teacher behaviors during 18% of the paper and pencil intervals for typical students and during 17% of these intervals for low achieving students. Both groups of students displayed active academic responses and teachers were engaged in task management for 17% of the paper and pencil intervals. Whereas the third most common combination for typical general education students was active academic responses while teachers exhibited task management behaviors (12%), for low achieving students the third most prevalent combination was active academic responses with academic talk and listening by teachers (15%). It may be that low achieving students asked teachers more questions during paper and pencil tasks or teachers spent more time ensuring that these students understood the assignment.

Since there were so few intervals when computers or other media were used, it is not surprising to see that there was more variation in the most common combinations during this task format. For typical students the combination with the highest percentage (75%) was other appropriate behavior and "other" teacher behavior, followed by other appropriate behavior and academic talk and listening by teachers (25%). For low achieving students, all (100%) of the computer/media intervals were labeled other appropriate behavior by students and academic monitoring by teachers.

SUMMARY

Table 16 includes the top two most typical categories for each of the four dimensions of the SOS-AAIMS for District C. In this district, the most typical student behavior was other appropriate behavior (45%) followed by active academic responses (40%). The most common teacher behavior was academic talk and listening (51%). The second most typical teacher behavior was task management. Nearly the same amount of time was devoted to two instructional organization patterns -- independent work (41%) and whole class activities (40%). The task format that was chosen for 55% of the observational intervals was paper and pencil activities, while lectures and discussions were used for 42% of the time that we observed. 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 16. Most Typical Variables

Course	Student Behavior		Teacher Behavior		Instructional Organization		Task Format	
	Most Typical	Second Most Typical	Most Typical	Second Most Typical	Most Typical	Second Most Typical	Most Typical	Second Most Typical
Algebra I	OAB 45%	AAR 40%	ATL 51%	TM 21%	IW 41%	WC 40%	P/P 55%	L/D 42%

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

Algebra I in District C

       The Algebra I classes in District C used a variety of instructional organization patterns including independent work (1026 observational intervals), whole class (987 observational intervals), and small group (446 observational intervals). For each of the possible instructional organization choices, there was a predominant task format, teacher behavior, and student behavior. If the class was engaged in a whole class activity, the task format was nearly always lecture or discussion (more than 95% of whole class intervals). During the whole class lectures or discussions, students showed other appropriate behavior while their teacher was talking or listening (57%). Some of this time students were engaged in active academic responses (16%) or off task behavior (11%). When small groups were used, there was usually a paper and pencil task to be completed (77% of small group intervals); however, some of this time a lecture or discussion was happening (23% of these intervals). When there was a paper or pencil task to be completed in small groups, students most often displayed active academic responses while their teacher was talking or listening (21%). This was also the condition when students showed the most off task behavior (16%). When there was a lecture or discussion during small group work, students displayed a mix of other appropriate behavior with several different teacher behaviors and some active academic responses with a variety of teacher behaviors. As one might guess, paper and pencil activities dominated the independent work time (99% of these intervals). During this time students exhibited active academic responses while their teachers were engaged in "other" activities including grading papers or working on tasks at their desks (22%) or describing assignments (task management – 21%). There was the least off task behavior during independent work time.

       Overall, we found active academic responses by students occurred most frequently when paper and pencil tasks were assigned during independent work or small group time. Other appropriate behavior was most prevalent during whole class lectures or discussions. (The cell with the highest percentage for any of the combinations was other appropriate behavior with academic talk or listening during a whole class lecture or discussion – 57%.) Off task behavior was most prevalent during small group paper and pencil activities.

Typical and Low Achieving General Education Students in Algebra I Classes

Typical general education students and their low achieving peers in District C displayed similar behavior during all of the whole class intervals. As we pointed out earlier, most whole class time was devoted to lectures or discussions. The most common combination of student and teacher behaviors was other appropriate and academic talk/listening (60% for typical students, 54% for low achieving students). Typical students were slightly more likely to engage in active academic responses during lectures and discussions than their low achieving peers (17% and 15%, respectively), and low achieving students displayed off task behaviors while their teachers were talking or listening during lectures and discussions than their typical peers (15% as compared to 8%).

When we examined the independent work intervals, typical and low achieving students had very similar percentages for each of the combinations. While typical students had more other appropriate behavior when teachers were talking or listening during paper or pencil activities, low achieving students had more off task behavior (7% as compared to 3%) under these circumstances. The most prevalent independent work combination was paper and pencil tasks accompanied by "other" teacher behavior and active academic responses (24% for typical students and 22% for low achieving students). The next most common combination was paper and pencil tasks during which the teacher was engaged in task management and the students exhibited active academic responses (21% for both groups of students).

The greatest differences between the behavior of typical general education students and low achieving students occurred during small group intervals. For typical students the most common combination during small group paper and pencil tasks was off task behavior while teachers were talking and listening (21%). This was followed by active academic responses while teachers were talking or listening (17%). On the other hand, low achieving students were engaged in active academic responses while teachers were talking and listening during 25% of these intervals. For these students, there were two combinations that received the next highest percentage – active academic responses with academic monitoring by teachers and off task behaviors with academic talk and listening (both 11%). When we considered off task behavior across all the teacher behavior categories during small group intervals when there was a paper and pencil task to be completed, typical general education students exhibited off task behavior during 28% of this time, while low achieving students were off task 15% of this time.

When we looked at all the comparisons for typical general education students and low achieving general education students, we found that the most active academic responses occurred during independent paper and pencil tasks for both sets of students; however, low achieving students also exhibited active academic responses during 40% of the small group intervals when paper and pencil tasks were assigned. Other appropriate behavior was most common during whole class lectures and discussions. Typical students had the least off task behavior during independent work and the most off task behavior during small group work while low achieving students had similar percentages of off task behavior across teacher behaviors for whole class, small group, and independent work 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 C. The second view includes an exploration of the data collected during the anecdotal observations conducted in this district and are reported in Technical Report 9. Finally, the most comprehensive look at beginning algebra curriculum and instruction in this district appears in the District C case study.

References

Baker, S., Gersten, R., & Scanlon, D. (2002). Procedural facilitators and cognitive strategies: Tools for unraveling the mysteries of comprehension and the writing process, and for providing meaningful access to the general curriculum. *Learning Disabilities: Research and Practice, 17*, 65-77.

Brophy, J.E. & Good, T. L. (1986). Teacher behavior and student achievement. In M.C. Wittrock (Ed.), *Handbook of research and teaching* (pp. 328-376). New York: Macmillan.

Foegen, A., Marston, D., Robinson, S. R., & Deno, S. L. (1993). *Project Inclusion student observation system: Description, materials, procedures, and training exercises.* Unpublished manual.

Olson, J., Foegen, A., & Lind, L. (2006). *Classroom observation data for District A: Momentary time sampling* (Technical Report 1). Project AAIMS, Department of Curriculum and Instruction, Iowa State University, Ames, IA.

Wallace, T., Anderson, A. R., Barholomay, T. & Hupp, S. (2002). An ecobehavioral examination of high school classrooms that include students with disabilities. *Exceptional Children, 68*, 345-359.

APPENDIX A

Project AAIMS
Student Observation System

Description, Materials, Procedures, and Training Exercises

Anne Foegen
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Iowa State University

Project AAIMS
Student Observation System Manual

Description, Materials, Procedures, and Training Exercises

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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 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

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

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   **Task Management:**   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   **Other:**   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   **Whole Class:**   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   **Small Group:**   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   **Independent:**   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   **Other:**   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   **Lecture/Discussion:**   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   **Paper/Pencil:**   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   **Computer/Media:**   The current class activity involves the use of the computer or some type of media (e.g., video, filmstrip).

OTH   **Other:**   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.

↓ ↑

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.

Instructional Organization

	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 by Instructional Organization, Task Format, and Teacher Behavior											
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
Alg I	Whole Class	Lecture/ Discussion	16%	0%	<1%	0%	57%	1%	6%	2%	11%	0%	1%	1%
		Paper Pencil	0%	0%	<1%	0%	0%	0%	1%	0%	<1%	0%	0%	0%
		Other	0%	0%	0%	0%	<1%	0%	3%	0%	0%	0%	0%	0%
	Small Group	Lecture/ Discussion	2%	3%	1%	<1%	7%	6%	2%	<1%	2%	0%	<1%	0%
		Paper Pencil	21%	9%	3%	2%	9%	7%	3%	1%	16%	3%	2%	1%
		Other	0%	0%	0%	0%	0%	0%	<1%	0%	0%	0%	0%	0%
	Independent Work	Lecture/ Discussion	0%	0%	0%	0%	0%	0%	<1%	0%	0%	0%	0%	0%
		Paper Pencil	9%	11%	21%	22%	5%	3%	11%	5%	5%	2%	3%	2%
		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 Instructional Organization, Task Format, Teacher Behavior, and Student Classification															
Course			**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 I															
Typical Students	Whole Class	Lecture/ Discussion	17%	0%	<1%	0%	60%	1%	5%	2%	8%	0%	1%	1%
		Paper Pencil	0%	0%	<1%	0%	0%	0%	1%	0%	0%	0%	0%	0%
		Other	0%	0%	0%	0%	<1%	0%	4%	0%	0%	0%	0%	0%
	Small Group	Lecture/ Discussion	2%	3%	0%	<1%	7%	5%	2%	<1%	1%	0%	0%	0%
		Paper Pencil	17%	7%	3%	2%	10%	8%	4%	<1%	21%	4%	2%	1%
		Other	0%	0%	0%	0%	0%	0%	<1%	0%	0%	0%	0%	0%
	Independent Work	Lecture/ Discussion	0%	0%	0%	0%	0%	0%	<1%	0%	0%	0%	0%	0%
		Paper Pencil	8%	13%	21%	24%	7%	3%	12%	6%	3%	<1%	2%	1%
		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 Instructional Organization, Task Format, Teacher Behavior, and Student Classification															
Course		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 I														
Low Achieving Students	Whole Class	Lecture/ Discussion	15%	0%	0%	0%	54%	<1%	8%	2%	15%	0%	2%	<1%
		Paper Pencil	0%	0%	0%	0%	0%	0%	<1%	0%	<1%	0%	0%	0%
		Other	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%
	Small Group	Lecture/ Discussion	2%	3%	1%	0%	8%	7%	2%	0%	3%	0%	<1%	0%
		Paper Pencil	25%	11%	3%	1%	7%	6%	3%	2%	11%	2%	1%	1%
		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	10%	10%	21%	22%	3%	3%	11%	4%	7%	3%	4%	3%
		Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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