

**INSTITUTE
FOR
RESEARCH
IN
LEARNING
DISABILITIES** 
The University of Kansas
Lawrence, Kansas, 66045
Emphasis on Adolescents and Young Adults

AN OBSERVATIONAL STUDY OF THE ACADEMIC
AND SOCIAL BEHAVIORS OF LEARNING DISABLED
ADOLESCENTS IN THE REGULAR CLASSROOM
Jean B. Schumaker, Jan Sheldon-Wildgen,
and James A. Sherman

Research Report No. 22

January, 1980

Abstract

Although academic skills have been of primary concern in research with learning disabled students, it is important to consider skills which will lead to the improvement of test scores. Skills such as listening to and following directions, taking notes, planning a study schedule, reviewing study material, and monitoring one's progress are necessary if students are to respond to the demands of the secondary school curriculum.

This study examined the class performance of LD adolescents and the performance of their peers who are successful participants in the classroom environment. Data from live observations of 47 pairs of students (one LD and one non-LD student) were analyzed. The data reveal that the majority of student time was spent attending to work material and that very little interaction occurs between students and teachers. LD students spent more time in reading, writing, and notetaking and spent greater lengths of uninterrupted time in these behaviors. LD students engage in significantly more rule violations in the classroom than non-LD student. Results of this study suggest aht there are many similarities and only a few differences between LD adolescents and their non-LD peers with regard to study, social, and classroom behaviors overtly observed in their regular classroom.

Cooperating Agencies

Were it not for the cooperation of many agencies in the public and private sector, the research efforts of The University of Kansas Institute for Research in Learning Disabilities could not be conducted. The Institute has maintained an on-going dialogue with participating school districts and agencies to give focus to the research questions and issues that we address as an Institute. We see this dialogue as a means of reducing the gap between research and practice. This communication also allows us to design procedures that: (a) protect the LD adolescent or young adult, (b) disrupt the on-going program as little as possible, and (c) provide appropriate research data.

The majority of our research to this time has been conducted in public school settings in both Kansas and Missouri. School districts in Kansas which are participating in various studies include: United School District (USD) 384, Blue Valley; USD 500, Kansas City; USD 469, Lansing; USD 497, Lawrence; USD 453, Leavenworth; USD 233, Olathe; USD 305, Salina; USD 450, Shawnee Heights; USD 512, Shawnee Mission, USD 464, Tonganoxie; USD 202, Turner; and USD 501, Topeka. Studies are also being conducted in Center School District and the New School for Human Education, Kansas City, Missouri; the School District of St. Joseph, St. Joseph, Missouri; Delta County, Colorado School District; Montrose County, Colorado School District; Elkhart Community Schools, Elkhart, Indiana; and Beaverton School District, Beaverton, Oregon. Many Child Service Demonstration Centers throughout the country have also contributed to our efforts.

Agencies currently participating in research in the juvenile justice system are the Overland Park, Kansas Youth Diversion Project and the Douglas, Johnson, and Leavenworth County, Kansas Juvenile Courts. Other agencies have participated in out-of-school studies-- Achievement Place and Penn House of Lawrence, Kansas, Kansas State Industrial Reformatory, Hutchinson, Kansas; the U.S. Military; and the Job Corps. Numerous employers in the public and private sector have also aided us with studies in employment.

While the agencies mentioned above allowed us to contact individuals and supported our efforts, the cooperation of those individuals--LD adolescents and young adults; parents; professionals in education, the criminal justice system, the business community, and the military--have provided the valuable data for our research. This information will assist us in our research endeavors that have the potential of yielding greatest payoff for interventions with the LD adolescent and young adult.

The University of Kansas Institute for Research in Learning Disabilities is supported by a contract (#300-77-0494) with the Bureau of Education for the Handicapped, Department of Health, Education, and Welfare, U. S. Office of Education, through Title VI-G of Public Law 91-230. The University of Kansas Institute, a joint research effort involving the Department of Special Education and the Bureau of Child Research, has specified the learning disabled adolescent and young adult as the target population. The major responsibility of the Institute is to develop effective means of identifying learning disabled populations at the secondary level and to construct interventions that will have an effect upon school performance and life adjustment. Many areas of research have been designed to study the problems of LD adolescents and young adults in both school and non-school settings (e.g., employment, juvenile justice, military, etc.)

Co-Directors: Edward L. Meyen
Richard L. Schiefelbusch

Research Coordinator: Donald D. Deshler

Associate Coordinator: Jean B. Schumaker

Institute for Research in Learning Disabilities
The University of Kansas
313 Carruth-O'Leary Hall
Lawrence, Kansas 66045

*
*
*
* The preparation of this document was supported by a government *
* contract. The views expressed here are those of the Institute, *
* and do not necessarily reflect official positions of the Bureau *
* of Education for the Handicapped, DHEW, USOE. *
*
*

AN OBSERVATIONAL STUDY OF THE ACADEMIC AND SOCIAL BEHAVIORS
OF LEARNING DISABLED ADOLESCENTS IN THE REGULAR CLASSROOM

Academic skills have been the major focus of the intervention research with learning disabled (LD) students (e.g., Glavin, 1973; Jenkins & Mayhall, 1976; Sabatino, 1971; Weiner, 1969; Zigmond, 1978). This seems clearly appropriate since recent research (e.g., Warner, Alley, Schumaker, & Deshler, 1980) suggests that academic skills (especially writing) are the main discriminators of learning disabilities. Nevertheless, as Deshler (1978) indicated learning disabled students may display a wide variety of strengths and weaknesses in different academic areas. Thus, each student may require remedial or compensatory help in different academic topics. Further, the evaluation of the effects of intervention programs has primarily focused on the comparison of achievement tests scores. This also seems appropriate since these scores provide one very important measure of students' academic skills.

At the same time, however, it is important to consider the process skills which lead to the achievement of improved test scores. These skills might include listening to and following instructions, taking appropriate notes in class, planning a study schedule, reviewing study material, and monitoring one's own performance and progress (Alley, 1977; Deshler, 1978). Deshler emphasized the importance of such process skills to learning disabled adolescents who are faced with the task of responding to the demands of the secondary curriculum. Recent research (Moran, 1980) has shown that lectures are the predominant teaching style in secondary schools and that students have few opportunities during class time to provide the teacher with feedback about what they are

learning and understanding. It follows that the secondary student is required to be skilled in listening, note-taking, studying, test-taking, and assignment completion. For the most part, it has not been clearly established whether learning disabled students differ significantly from their peers on these skills, and if so, whether intervention programs are successful in teaching the skills, although the implementation of many intervention programs, e.g., resource rooms, involves explicit steps to teach some of these process skills.

In addition, there may be deficits other than those in academic and process skills which contribute to a student being labeled as learning disabled (Deshler, 1978; Wilcox, 1970). Some of these deficits may be related to the social skills and general deportment of students. Many of the described characteristics of learning disabled students seem to be based on classroom observations of those students, but these observations have not involved systematic, explicit comparisons to student peers who are not labeled as learning disabled. An exception to this is a series of studies conducted by the Bryans (e.g., Bryan, 1974; Bryan, 1976; Bryan & Bryan, 1978) who examined the popularity of learning disabled elementary school children in comparison to their peers. Using sociometric paper and pencil ratings, they found that learning disabled children were rated as less attractive than their peers. These results were both replicated and extended in the later studies where, in addition to being rated as less attractive or popular, learning disabled children were observed both to give and receive more statements of rejection than their peers. Bryan and Perlmutter (1979) investigated the immediate impressions of female undergraduate students after they watched videotapes of learning disabled and non-learning disabled elementary students.

They found LD children more likely to be devalued by the observers than their normal peers even after only a few minutes of observation and after the audio component was removed (i.e., the observers could only watch the children's nonverbal behaviors). Thus, a preponderance of evidence seems to indicate deficits of LD children in other areas besides academics.

Research to date, however, has centered on the elementary student. Little is known about the social skills of LD adolescents. Recent research, though, has shown that LD high school students (Deshler, Schumaker, Warner, Alley, & Clark, 1980) and young adults (White, Schumaker, Warner, Alley, & Deshler, 1980) participate in fewer activities, groups, and clubs than their normal peers. Yet no research has identified the specific problems or deficits LD individuals have in social interactions. The series of studies conducted by the Bryans and others exemplifies the type of relatively detailed analysis of the characteristics of learning disabled adolescents that is needed. Such investigations are critical before possible intervention programs which have a considerable impact on secondary LD students' lives can be designed.

The purpose of the present study was to compare learning disabled adolescents' classroom performances to the performances of their peers who are successful participants in the classroom environment. Live observations were used to obtain objective information about the students. Such an analysis should provide useful information regarding the deficits of LD adolescents in the areas of process skills, social skills, and other characteristics.

Methodology

Subjects

The LD teachers in each of three junior high schools¹ were asked to supply a list of names of students who were currently being served in their LD program and who had been formally classified as LD through school procedures. Further, they were asked to eliminate from the list names of students who had physical or sensory handicaps or had exhibited any evidence of possible cultural, economic, or environmental disadvantage. The parents of students on the list were contacted by phone, the study was described to them, and they were asked for permission to allow their son/daughter to participate. A consent form was mailed to obtain the written consent of those parents who were willing to allow their child to participate.

After written consent was obtained for a given LD student, a visit was arranged with one of the student's teachers. Every effort was made to contact the students' English/Common Learnings teacher. If the LD student received English instruction in the resource room, then a teacher of another core/required subject in which the student was enrolled was contacted. The study was described to the teacher, and the teacher was asked to nominate a student who was considered to be a "model student" and who was enrolled in the same class at the same time and was of the same sex as the LD student. A "model student" was defined for the teacher as a student receiving honor roll grades (A's and B's) and who behaved in the class in a way that other students should emulate. Once a student was nominated by the teacher, the students' parents were contacted, the study described, and their permission solicited. Consent

forms were mailed to obtain written consent. A total of 47 pairs of students (a learning disabled and a non-learning disabled student) in grades 7, 8, and 9 agreed to participate. The numbers for each grade are shown in Table 1. The LD students were 12 yrs. 4 mos. to 16 yrs. 7 mos.

Insert Table 1 about here

old, with a mean age of 14 yrs. 3 mos.; the non-LD students' were 12 yrs. 9 mos. to 16 yrs. 3 mos. old, with a mean age of 14 yrs. 4 mos. Thirty-five of the pairs were males and 12 were females. IQ scores for the LD students ranged from 80 to 116 with a mean of 92.79 (SD = 10.29). These scores were not available for the non-LD students. Percentile scores on either the DAT or the CAT, however, were available for 31 of the 47 non-LD students. The mean percentile score for these students was 68.3%, ranging from 29% to 99% (SD = 18.43). On reading achievement, the LD students' mean percentile score was 21% (SD = 12.95) whereas the non-LD students' mean score was 77.5% (SD = 20.3). On math achievement, the LD students' score was 24% (SD = 21.84), whereas the non-LD students' mean score was 73% (SD = 22.7). These percentile scores were derived from school records of the results of the following achievement tests: the Stanford Achievement Test, the Iowa Test of Basic Skills, and the SRA Achievement Test.

Settings

The three schools in which students were observed are located in two towns, Lawrence and Olathe, Kansas. Lawrence has a population of approximately 55,000 and is a university community, independent of other metropolitan communities. Olathe has a population of about 28,000 and is a rapidly-growing, suburban, bedroom community for the nearby metro-

politan area of Kansas City. Both towns are characterized by a relatively homogeneous middle class population.

The regular classrooms of the students served as the settings for this study. The classes observed included Common Learnings, Social Studies, English, Science, Health, Speech, and Spanish. All of the classrooms were furnished like typical junior high classrooms, with individual student desks, teacher desk, blackboard, etc. The observers sat unobtrusively at the very back of the classroom, behind the students.

Measurement System

The measurement system was a continuous frequency recording system broken into 10-second intervals. That is, every target behavior observed was recorded as it occurred. The 10-second blocks were used for reliability purposes to compare observers recordings and to give an indication of elapsed time. Each recording sheet (see Figure 1 for an example)

Insert Figure 1 about here

allowed room for five minutes of observations. Each behavioral occurrence was recorded within a box using a code letter. If two behaviors occurred simultaneously, the two code letters were recorded within a single box. If a behavior continued to occur without interruption into the next 10-second interval, a slash (/) was placed in the first box of the next 10-second interval. This allowed an approximate measure of the duration of behaviors as they occurred within 10-second time frames. Such a record of behavior was made simultaneously for the classroom teacher (T), the target student (S), and any peer (P) who interacted with the target

The observers also recorded the contexts within which the various behaviors occurred. Seven context labels were defined for the activities that occurred in the classes. They are as follows:

Seatwork: Any activity which involved the student in individual paper/pencil tasks, studying or reading. No interaction with peers had been indicated by the teacher.

Discussion: Any activity which provided the students with opportunities to participate in front of the class by making comments, answering questions, or making some other form of oral response.

Lecture: Any activity involving any type of expository response on the part of the teacher with no opportunities for student participation except perhaps an occasional question asked by a student for clarification.

Group Work: Any activity which involved the students' interaction in completing a task.

Audio-visual Presentation: Any activity utilizing audio visual equipment as the primary part of the presentation (e.g., film-strip, movie, slides, T.V.).

Report: Any activity which involved a student or students presenting a project or where students were involved in a contest in front of the rest of the class.

Free Time: Time designated by the teacher to be free time, usually occurring at the end of class when work is done.

These contexts were recorded above the appropriate interval on the recording sheet to indicate when the activity began. In Figure 1, for example, Seatwork (S) was the first activity observed. This activity continued until the second half of the third minute where Group Work (G) began. The figure also shows the behaviors exhibited by the target student and the interactions the target student had with peers and with the teacher. For example, under the seatwork context the time had been designated for reading by the teacher. The target student wrote (W) for the first three 10-second intervals. Then he spoke to the first peer with whom he interacted (Sp), the peer spoke back (S), and a short conversation (Cv) ensued which continued into the next interval. The

student then wrote for 5 intervals and was reprimanded for writing by the teacher (SR) when he was supposed to be reading. Thus, the recordings capture the student's behaviors and interactions with others.

A simpler recording system was used to record behaviors which could be observed only once or a very limited number of times. For example, coming on time to class can occur only once in a given class. Thus, the observers gave the student a "+" score if the student arrived on time or a "-" score if the student was late. Other behaviors which were scored once only included bringing basic supplies to class, grooming appearance, clothing appearance, walking posture, and activity level.

Behaviors Observed

A large number of student behaviors were observed. For the most part, these behaviors fell into three categories: study behaviors, social behaviors, and classroom conduct behaviors. The study behaviors were defined as behaviors a student might engage in while completing classroom assignments or while participating in the academic activity designated by the teacher. Social behaviors included all those behaviors involved in interacting with the teacher or peers in the classroom, with the exception of behaviors involved in participating in a discussion which were designated study behaviors. Classroom conduct behaviors were those that are commonly expected of students by their teachers at the junior high school level. To determine these behaviors, junior high teachers were interviewed and asked to list the "rules" they asked their students to follow with regard to classroom deportment. These rules were compiled and the applicable behaviors defined. Lists of the behaviors observed are shown in Table 2. The definitions of these behaviors are in Appendix A.

In addition, several social behaviors of teachers and the students' peers were observed and recorded. They were only recorded, however, when these individuals were directly interacting with the target student currently being observed. These behaviors are listed in Table 3.

Insert Tables 2 and 3 about here

Interobserver Reliability

The interobserver reliability of the measurement systems was assessed by having two observers independently record behaviors for five pairs of students in one of the students' class periods. Their recordings were then compared interval by interval. To have an agreement on a given behavior, both observers had to record the same code letter within the same or a neighboring interval. If the behavior was not recorded in the matching interval, it had to be recorded within the same order with respect to other behaviors recorded by both observers. Otherwise, a disagreement was scored. Percentage of agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. Tables 4 and 5 show the percentages of agreement for the two observers for all the behaviors recorded.

Insert Tables 4 and 5 about here

Overall, the observers agreed on 2,115 behaviors out of 2,210 opportunities for agreement for a total percentage of agreement of 96%. In addition, the observers agreed on 61 out of 62 context scores for a total percentage agreement on contexts of 98%.

Procedures

Names of the LD and non-LD students were obtained from the teachers in the three participating schools. The lists of student pairs were given to the observers without identifying who was diagnosed as learning disabled. After obtaining written consent from the parents, the observers arranged to visit each classroom. Sitting at the rear of the class, behind the students, they gathered the necessary data using clipboards and stopwatches. At no time was a given student informed that he/she was being observed. The observers took great care not to "stare" at a student while observing the student. If the student looked at the observers (which was an infrequent occurrence), the observers pretended to be observing other students in the vicinity.

Observers alternated their observations between both members of the pair. They watched one student for five minutes, then the other student for five minutes, then rotated back to the first student for five minutes and so on. The student to be observed first on a given day was randomly selected. In this way, each student was observed for at least 40 minutes.² One-time-only observations were taken at the beginning or end of the class, depending on what was more appropriate for the particular behaviors involved.

Data were transferred from the original data sheets to tabular form for each student and were then entered into a computerized, data base management system for compilation and easy retrieval.

Results

Study Behaviors

Tables 6 - 12 show the results for the students' study behaviors observed in the classroom. Each table reports the percentage of intervals

in which the students in each grade engaged in a certain behavior,³ as well as the average number of intervals in which the students engaged in the behavior uninterrupted by other behaviors. Table 6 reports the results for the behavior "attention to work" which involved looking at or being involved in the assigned activity; of the moment. In seventh grade, the LD and non-LD students spend about the same proportion of time in this activity; by 8th and 9th grade, however, the non-LD students spent more time attending to work. The non-LD students in all grades attended to their work for longer periods of time than the LD students.

The results for the behavior, "alternating reading and writing", are reported in Table 7. This behavior involves using a textbook or other aid while writing. Thus, the student continues to check back with the book every few seconds while the student writes. As the students advanced in grade level, the percentage of time they spent in this behavior diverged more, until by 9th grade the non-LD students are spending 8% more time at this behavior than the LD students, and each time they engaged in the behavior in 9th grade, they did so for twice as long as the LD students (10.8 intervals vs. 5.4 intervals).

Insert Tables 6 and 7 about here

It is interesting to note that these two behaviors, attending to work and alternating reading and writing, accounted for a very large percentage of the students' behavior in class. The LD students engaged in these two behaviors 50.8% of the time while the non-LD students engaged in them 60.4% of the time.

The LD students engaged in three study behaviors more than the non-LD students. These behaviors were reading (Table 8), writing (Table 9), and note-taking (Table 10). The length of uninterrupted time they spent was also greater than the non-LD students.

Insert Tables 8, 9, and 10 about here

Table 11 shows the percentage of time the students spent attending to test materials. Although test-taking did not account for more than 6% of their behavior, the non-LD students spent slightly more time than their LD peers attending to test materials, and length of time attending increased greatly over the three grades.

Insert Table 11 about here

Table 12 shows the summed results for the study behaviors thus far reported. In all grades, a larger percentage of the non-LD students' behaviors were study behaviors.

Insert Table 12 about here

Tables 13, 14, and 15 show student behaviors of organizing papers, bringing proper materials, and upkeep of work areas, respectively. The LD students spent slightly more time than their peers in organizing papers (e.g., getting paper out of notebook, putting papers in order, putting paper away in notebook). Table 14 shows the number of students who brought basic supplies to class, who didn't bring basic supplies, and for whom data were missing. No differences were apparent between LD and non-LD students' data. Table 15 reports the percentage of opportunities where the students' work areas were kept neat. This observation was recorded once, at the end of each 5 minute observation period for each student. The data show that the LD students' work areas became more messy as they advanced in grade level, whereas the non-LD students' work areas became less messy by 9th grade.

Insert Tables 13, 14, and 15 about here

Tables 16 and 17 show students' participation in classroom discussion. Table 16 shows the number of times students gave appropriate answers to the teachers' discussion questions. Neither of the groups participated very often, nor were there many opportunities to participate. In 3016 minutes of observation, the teachers asked 109 questions which the students could offer to answer. The LD students had 71 opportunities and the non-LD students had 38 opportunities. The LD students raised their hands to offer an answer to 2% of the questions, whereas the non-LD students raised their hands for 6% of the questions. The non-LD students did emit appropriate answers more often than the LD students. There were only one and two instances of inappropriate or incorrect answers for the LD and non-LD groups respectively.

Table 17 shows the number of complex answers offered by the students. These were answers that had at least two independent clauses and could have included a reason, example, qualification, or a comparison. These complex answers made up one fourth of all the LD students' contributions to the discussions and one third of the non-LD students' contributions. The average duration of the LD students' complex contributions was slightly higher than the non-LD students' duration.

Insert Tables 16 and 17 about here

In summary, the students spent a large percentage of their time in class engaged in study behaviors. The non-LD students engaged in about 7% more study behaviors than the LD students. They especially spent more time attending to work and alternating between reading and writing.

The LD students spent slightly more time than the non-LD students engaged in uninterrupted writing, reading, note-taking, and organizing. Their work areas are messy a greater percentage of the time than the non-LD students' work areas. Finally, the non-LD students participated more than the LD students in discussions, and their contributions were more complex than the LD students'. However, neither group participated very often.

Statistical Analysis. In order to test the null hypothesis that no differences existed between the LD and non-LD groups, in terms of the percentage of intervals in which students were exhibiting study behaviors, the following procedures were followed. First, for each student, the number of intervals in which the student was involved in one or more of the six behaviors listed in Table 12 was computed. This number was then divided by the total number of intervals and multiplied by one-hundred to determine the percent of intervals which included study behaviors. With this percentage serving as the dependent variable, a two-tailed t-test for independent samples was computed. The mean percent of intervals for the LD group was 67.92 (SD = 36.37). For the NLD group, the mean percent of intervals was 74.8 (SD = 42.50). The obtained t value was -0.84, which is not significant at alpha .05. Thus, the null hypothesis was not rejected; LD students were not found to be significantly different from non-LD students with regard to study behaviors.

Classroom Conduct

The data depicting the students' classroom conduct with regard to generally accepted classroom rules are shown in Tables 18 - 25. Table 18 shows the percentage of time the students were out of their seats. The LD students spent slightly more time out of their seats than the non-LD students, especially in 7th and 8th grades.

Insert Table 18 about here

Table 19 shows the percentage of intervals the students spent in verbal disruption of the class (i.e., speaking loudly without raising hand and being recognized by the teacher). The non-LD students spent more time engaged in this behavior than the LD students. In fact, they spoke out twice as much as the LD students (50 vs. 23 times), usually to participate in discussions.

Insert Table 19 about here

Table 20 depicts the time spent eating in class. The LD students spend considerably more time than the non-LD students engaged in this behavior. The observers reported this behavior to primarily consist of gum chewing.

Insert Table 20 about here

The amount of time spent playing with objects (e.g., making paper airplanes, twirling a pencil around) is shown in Table 21. The LD students spent a little more than twice as much time as the non-LD students engaged in this behavior, and they did it for longer periods of time than the non-LD students.

Insert Table 21 about here

Table 22 shows the time spent in grooming activities (e.g., combing hair, looking at self in a mirror) by the students. The LD students spent slightly more time engaged in this behavior than the non-LD students. Similarly, they spent slightly more time engaged in inappropriate posture than the non-LD students (Table 23), although for shorter periods of time.

Insert Tables 22 and 23 about here

Student compliance to teacher requests is shown in Table 24. Both groups of students complied with about equal percentages to requests to do something and requests to stop doing something.

There were several other classroom conduct behaviors where no differences appeared between the groups. For example, there were only five instances where students in each group were discourteous to a teacher. The students in both groups raised and lowered their hands in an appropriate manner when they engaged in these behaviors, with only five instances where students in each group were discourteous to a teacher. The students in both groups raised and lowered their hands in an appropriate manner when they engaged in these behaviors, with only a couple of violations emitted by the non-LD group. Other behaviors which were infrequent were leaving the room without permission (one instance for each group), taking material from another student (one instance in the non-LD group), and coming late to class (two instances in the LD group and one instance in the non-LD group). There were eight intervals of sleeping by the LD group and four for the non-LD group.

Insert Table 24 about here

Table 25 shows the percentage of total behaviors emitted which involved any type of classroom "rule violation." Across all grades the LD students engaged in more rule violations than the non-LD students. As the LD students got older, their rule violation behaviors increased relative to those of the non-LD students (9% more in 7th grade, 17% more in 8th grade and 26% more in 9th grade).

Insert Table 25 about here

It is interesting to note that when the teacher had occasion to leave the room, the non-LD students did not emit a single rule violating behavior. The LD students, however, emitted rule violating behaviors during 92% of the intervals that a teacher was out of the room (a total of 109 intervals or about 18 minutes).

Statistical Analysis. As with the study behaviors, a test was made of the null hypothesis that no difference existed between the LD and non-LD groups in terms of the percentage of intervals in which students exhibited one or more rule violations. In computing the total number of intervals for each student, in which rule violations were recorded, the following 13 behaviors were included: noncompliance with instructions, failure to have appropriate materials, inappropriate posture in seat, playing with objects, sleeping in class, eating, verbal disruption, discourteous behavior toward the teacher, property destruction, grooming, leaving the room without permission, taking others' materials, and out-of-seat behavior. The mean percent of intervals in which rule violations were recorded for the LD groups was 34.68 (SD = 31.17). The mean percent of intervals for the NLD group was 18.41 (SD = 18.80). The obtained t value, using a two-tailed t test for independent groups, was 3.01. The null hypothesis associated with this test was rejected at $\alpha = .01$. The LD group had significantly more intervals than the non-LD group in which rule violations were recorded.

Social Behavior

Interactions with the teacher. A large proportion of the intervals in which student-teacher interaction occurred involved the student

simply attending to (i.e., watching and listening to) the teacher. This is an important behavior in that a student must receive a large amount of information regarding the day's activities, assignments, and content material from the teacher. Recent research (Moran, 1980) indicates that the most frequently used instructional format in the secondary classroom is the lecture format. Thus, attending to the teacher takes on a crucial meaning for the secondary student. Table 26 shows data on the percentage of intervals the students attended to their teachers. The two groups spent about equal amounts of time attending to their teachers and their teachers and their attention lasted about equal lengths of time. The non-LD students attended to the teacher in about 1% more of the intervals than the LD students. This data reports the number of intervals in which "free attending" occurred. That is, the teacher could be working at his/her desk, saying nothing and the student could have been watching the teacher.

There are particular moments when a student should be attending to the teacher, however. These are the moments during which a teacher is speaking to the class as a whole or to the particular student: giving initial instructions about the day's activities and making statements

Insert Table 26 about here

of fact. Table 27 shows data regarding the students' attentiveness to these teacher behaviors. The data appear as the percentage of intervals in which the students were directly attending to the teacher while he/she was speaking. The table shows that the LD and non-LD students attend equally to teachers' initial instructions. However, the non-LD students attend about twice as much as the LD students when the teacher

makes statements of fact (e.g., imparts content information to the students).

Insert Table 27 about here

Interactions with the teachers occurred very infrequently. Data for interactions in which a student spoke to a teacher, had a conversation with a teacher, or asked a question of a teacher are shown in Tables 28, 29, and 30, respectively. The data indicate that the students spent less than 1% of the intervals engaged in speaking with a teacher. The non-LD students spoke slightly more times than the LD students (33 vs. 27 times), but the two groups spent about equal time engaged in conversations (which are close to non-existent). The non-LD students' conversations with the teacher were about twice as long as the LD students' conversations, however. They asked about equal numbers of questions, with the LD students as a group asking 21 questions and the non-LD students asking 19 questions.

Insert Tables 28, 29, and 30 about here

Table 31 shows the percent of intervals where students engaged in requesting teacher help. Three instances of this behavior were observed in the non-LD students and only one instance in the LD students. As the table shows, very little time is spent in this behavior. No instances of requesting permission or requesting feedback from a teacher were observed in either group.

Insert Table 31 about here

Two other interactions the students had with their teachers involved the delivery of praise and criticism by the teachers. This was a very

infrequent behavior by the teachers. In about 50 hours of observations, 27 instances of praise and 35 instances of criticism directed at the class as a whole or at a target student were observed. Nevertheless, a larger percentage of this praise and criticism was directed at the LD students than the non-LD students. The LD students received 20 instances of praise and 28 instances of criticism, whereas the non-LD students received 7 instances of praise and 7 instances of criticism.

Interactions with Peers. Table 32 shows the percentage of intervals where the students spoke to peers in class. Virtually equal percentages of intervals, about 3%, involved this behavior. Table 33 shows similar data on conversation with peers, but here the LD students spent slightly more intervals engaged in this behavior. In fact, in both tables (32 & 33) the LD students showed gradual increases in the behaviors as they advanced in grade level. The non-LD students remained about the same in speaking to peers, and dropped off slightly in 9th grade on conversations. The length of the conversations is about equal for both groups. Forty percent of the LD students' interactions with peers and 37% of the non-LD students' interactions with peers resulted in conversations.

Insert Tables 32 and 33 about here

Table 34 shows the average number of different peers to whom the students spoke. Each student spoke to more than two peers, on an average. The LD students gradually increased this number (although not greatly) as they advanced in grade level, whereas the non-LD students gradually decreased the number of peers as they grew older. Thus, the LD students in 9th grade are similar to the non-LD students in 7th grade and vice versa.

Insert Table 34 about here

The question of who initiates interactions with peers is answered in Table 35. LD students were the initiators in 5% more of their interactions with peers than the non-LD students. Table 36 displays the percentages of target student initiations which were ignored by peers and Table 37 shows the percentages of peer initiations which were ignored by target students. The LD students and non-LD students are fairly comparable on these measures. The LD students were ignored on about 4% more occasions by their peers than the non-LD students. Neither group ignored their peers' initiations very much, though the LD students ignored 2% more initiations than the non-LD students.

Insert Tables 35, 36, and 37 about here

Table 38 displays data on the positive touching of peers. The non-LD students touched peers more often and for longer periods of time than LD students. There were only a few instances of aggressive touching of peers; for the LD group there were three instances and for the non-LD group there were two instances.

Insert Table 38 about here

The students' use of gestures is depicted in Table 39. The LD students used slightly more gestures than the non-LD students. However, the percentage of intervals in which this behavior occurred is less than .2%; thus, it is not a very frequent behavior.

Insert Table 39 about here

The students' laughing behavior is shown in Table 40. The non-LD students laughed slightly more than the LD students, although, again, this was an infrequent behavior. The non-LD students had 99 instances of laughter and the LD students had 70 instances in all of our observations.

Insert Table 40 about here

Other Behavior

A few other behaviors were observed which did not seem to fit in the categories of study, classroom conduct, and social behaviors. Glancing around the room was one of these. In less than 2% of the intervals were this behavior recorded for either group (Table 41). The LD students spent slightly more time than the non-LD students glancing around the room.

Insert Table 41 about here

Talking to oneself also occurred infrequently (Table 42), and both groups seemed to engage in this behavior about equally.

Insert Table 42 about here

Table 43 shows the percentage of intervals where the students engaged in passing papers to each other. Although this behavior occurred infrequently, it appears that the LD students engaged in it twice as often as their non-LD peers. This may reflect the observer's informal observation that the LD students passed more notes to peers.

Insert Table 43 about here

Engaging in repetitive motor movements was a relatively more frequent behavior than others reported in this section. Table 44 displays the data, and they show the LD students engaged in this behavior three times as much as the non-LD students. Repetitive motor movements include such behaviors as swinging a leg and body rocking.

Insert Table 44 about here

"Doing nothing" required no movement, on the other hand. Table 45 shows that the LD students engaged in this behavior three times as often as their non-LD peers. Since the behavioral definition for "doing nothing" required the student to engage in none of the defined behaviors for a full 10 seconds, the data indicate that the LD students are spending about 3% of their time doing nothing while the non-LD students spend 1% of their time likewise disengaged.

Insert Table 45 about here

Table 46 lists the appearance factors which were observed for 46 of the 47 pairs and the numbers of students exhibiting or not exhibiting each factor. A large majority of each group was neatly dressed, groomed, physically attractive, etc. However, 16 of the LD students (or 35% of the LD sample) were observed to have a problem in one or more of these appearance categories. Only 3 of the non-LD students appeared to have similar problems, and each student only had one problem area.

Insert Table 46 about here

The activity level of each student was judged to be either high, normal, or low. The data in Table 47 show that there were more LD students reflecting high activity levels than non-LD students.

Insert Table 47 about here

The seating location of each student was also recorded. The data in Table 48 indicate that the students in both groups were spread throughout the room.

Insert Table 48 about here

Finally, there were very few instances where the observers could not see the target student. These obstructions occurred in about .2% of the intervals for each group for a total of 44 intervals.

Classroom Contexts

Table 49 shows the percentage of intervals observed within each classroom context across the three grades. By far, the largest percentage of time was spent within the seatwork context. In fact, teachers devoted almost half of the class time to seatwork. Lectures were the next most time consuming activity. Discussions were used frequently in seventh grade, but their use diminished greatly by ninth grade. Audio-visual activities consumed about 10% of the intervals at each grade level, as did group work in the seventh and ninth grades. Reporting and free time were less emphasized activities.

Insert Table 49 about here

Discussion

The results of this observational study present an interesting picture of junior high school classrooms as well as the behaviors of both learning disabled and non-learning disabled students. The majority of student time was spent doing seatwork. More specifically the students

spent a majority of their time attending to work materials, and alternating reading and writing. There appeared to be very little student interaction with the teachers. The teachers rarely asked questions of students, did not make suggestions to students and gave little immediate feedback to them. Students, in turn, rarely asked questions of teachers, requested help, or conversed with the teachers. When students were not working on written assignments or reading, the teachers often explained material to students in the form of a lecture. During these lectures, there were few questions or comments by the students. Thus, while students worked, teachers monitored but did not often directly interact with students, and while teachers lectured, students monitored without much direct interaction with teachers.

The results show that the LD students and the non-LD students differ in a number of ways. Perhaps more striking, though, is the extent to which LD and non-LD students were similar to each other on the behaviors measured. It is difficult to determine without additional evaluations which, if any, of the similarities and differences between the LD and non-LD students are important for their successful performance in school. In the absence of this additional evaluation, it seems appropriate only to comment on those behaviors which occur very frequently or take up a great deal of the class period and those where there seem to be clear distinctions between LD and non-LD students.

The majority of the class day was spent attending to work and alternating reading and writing by both LD and non-LD students, although the overall amount of this behavior by the non-LD students was higher than the LD students. LD students, however, had somewhat higher levels of time spent in the specific study behaviors of reading, writing and

note-taking and spent greater lengths of uninterrupted time in these behaviors. How these differences are to be interpreted is not entirely clear. On one hand, it may be that LD students have greater difficulty with the material than other students and, for example, need more time to read an assignment or write a paragraph. On the other hand, it may be that the definitions of reading, writing, and note-taking for observation purposes were simply too permissive to allow a clear distinction between academic work and non-academic work. For example, the definitions of reading and writing and the conditions of observation did not permit observers to distinguish between reading a textbook or reading comic books hidden in students' desks, or between writing a class theme or writing a note to be passed to a peer. In a separate study (Schumaker, Sheldon-Wildgen, & Sherman, in preparation), teachers were asked to display the written products that resulted from student work periods. It was found that non-LD students handed in assignments a greater percentage of the time than did LD students. Thus, while LD students seemed to spend roughly as much time "working" as non-LD students, they do not seem to be producing the same amount of written material. This may, in fact, be due to the fact that many assignments require homework and LD students may do very little homework. Additionally, although LD students are capable of appearing to be "working" in the structured setting of a classroom, they may have difficulty actually completing the assignment. It appears to us that the behavior of "alternate reading and writing" is a particularly critical skill for secondary students. Very often the work that they are assigned to do involves reading and answering questions of one form or another. Good performance, or at least highly accurate performance, seems to involve looking at the reading material, looking

at the question, writing an answer, checking the answer against the written material and so on. It is on this study behavior that non-LD students spent more time than LD students.

Regarding classroom conduct, the LD students engage in what are traditionally thought of as classroom rule violations in 18% more of the intervals than the non-LD students. Thus, it is possible that the 7% of the intervals that non-LD students are engaged in more studying may be replaced with "cutting up" by the LD students.

The results of the social behavior comparisons indicate that LD junior high students are not social isolates in the classroom. They talk to as many different peers as the non-LD students and spend slightly more time engaged in conversations with peers than the non-LD students. Peers do not seem to ignore their initiations much more often than they ignore the non-LD students' initiations. The LD students, however, initiated 5% more of their interactions than the non-LD students. On the surface, these results seem inconsistent with the results of other studies that have assessed the social behavior of LD students. The Bryans and their colleagues, in a number of studies (e.g., Bryan, 1974; Bryan, 1976; Bryan & Bryan 1978), have found LD elementary students to be less socially skilled than their non-LD peers. Deshler, Schumaker, Warner, Alley, & Clark (1980) found that LD adolescents spend less time engaged in social activities with peers than their non-LD counterparts. Nevertheless, strong conclusions cannot be drawn about LD adolescents' social behaviors until more specific measures of what they say and do in social interactions with peers can be taken. It is possible that by adolescence they "catch up" with their peers in the social realm. It is also possible, however, that even though they interact as frequently as non-LD peers, the quality of those interactions are not comparable.

The data derived from the teacher-student interactions indicate that very few direct interactions between a single student and the teacher occur in junior high classrooms. These results replicate the findings of Moran (1980) and Skrtic (1980), emphasizing the importance of written products in evaluating student performance. It is interesting that the LD students received more verbal feedback from the teachers than their non-LD peers, but, again this is very infrequent. The amount of feedback given to the LD students did not equal one instance per student. The amount of individual help given these students was close to non-existent, encompassing a total of 12 intervals (2 minutes) for all the LD students combined.

The differences in amount of different behaviors between LD and non-LD students suggest some possible directions for intervention. Perhaps interventions to increase the overall level of work behavior and alternate reading and writing, to decrease rule violations, and to improve grooming and appearance are the most obvious. As was mentioned earlier, however, perhaps the similarity of the amounts of different behaviors between LD and non-LD students was more striking than were the differences. These similarities suggest that subsequent studies might concentrate more on evaluating the quality of students' academic performance. One such study which is being completed is analyzing the quality of the written products turned in by LD and non-LD students as it occurs to analyze possible differences in what is done and the quality of it. Another possible area of investigation might attempt to evaluate the LD student's ability to complete academic tasks in a non-structured learning environment (something comparable to a home situation) as compared with the non-LD student's ability.

In conclusion, results of this study suggest that there are many similarities and a few differences between LD adolescents and their non-LD peers with regard to study, social, and classroom behaviors overtly observed in their regular classes. Whether or not these differences are functional ones in handicapping the students should be subject to further study. More detailed examinations of the quality, adequacy, or appropriateness of study, disruptive, and social behaviors seems warranted. Additionally, investigations in the LD students' actual "study processes" may prove beneficial in understanding why these students are doing poorly in academic areas.

5
E
...

References

- Alley, G. Grouping secondary learning disabled students. Academic Therapy, 1977, 13(1), 37-45.
- Bryan, T. H. Peer popularity of learning disabled children. Journal of Learning Disabilities, 1974, 7, 621-625.
- Bryan, T. H. Peer popularity of learning disabled children: A replication. Journal of Learning Disabilities, 1976, 9, 307-311.
- Bryan, T. H., & Bryan, J. H. Social interactions of learning disabled children. Learning Disability Quarterly, 1978, 1, 33-38.
- Bryan, T. H., & Perlmutter, B. Immediate impressions of LD children by female adults. Learning Disability Quarterly, 1979, 2(1), 80-88.
- Deshler, D. D. Psycho-social characteristics of learning disabled adolescents. In L. Goodman, L. Mann, & L. Wiederholt (Eds.), Teaching the learning disabled adolescent. Boston, Mass.: Houghton Mifflin Co., 1978.
- Deshler, D. D., Schumaker, J. B., Warner, M. M., Alley, G.A., & Clark, F. L. An epidemiological study of learning disabled adolescents in secondary schools: Social status, peer relationships, activities in and out of school, and time use (Research Report No. 18). Lawrence, Kansas: The University of Kansas Institute for Research in Learning Disabilities, 1980.
- Glavin, J. Follow-up behavioral research in resource rooms. Exceptional Children, 1973, 40, 211-212.
- Jenkins, J. R. & Mayhall, W. F. Development and evaluation of a resource teacher program. Exceptional Children, 1976, 43, 21-29.
- Moran, M. An investigation of the demands on oral language skills of learning disabled students in secondary classrooms (Research Report No. 1). Lawrence, Kansas: The University of Kansas Institute for Research in Learning Disabilities, 1980).
- Sabatino, D. An evaluation of resource rooms for children with learning disabilities. Journal of Learning Disabilities, 1971, 4, 84-93.
- Schumaker, J. B., Sheldon-Wildgen, J., & Sherman, J. A. A comparison of the written products of LD and non-LD adolescents (Research Report in preparation). Lawrence, Kansas: The University of Kansas Institute for Research in Learning Disabilities.
- Skrtec, T. M. The regular classroom interactions of learning disabled adolescents and their teachers (Research Report No. 8). Lawrence, Kansas: The University of Kansas Institute for Research in Learning Disabilities, 1980.

- Warner, M. M., Alley, G. R., Schumaker, J. B., & Deshler, D. D. An epidemiological study of learning disabled adolescents in secondary schools: Achievement and ability, socioeconomic status, and school experiences (Research Report No. 13). Lawrence, Kansas: The University of Kansas Institute for Research in Learning Disabilities, 1980.
- Weiner, L. H. An investigation of the effectiveness of resource rooms for children with specific learning disabilities. Journal of Learning Disabilities, 1969, 2, 223-229.
- White, W. J., Schumaker, J. B., Warner, M. M., Alley, G. R., & Deshler, D. D. The current status of young adults identified as learning disabled during their school career (Research Report No. 21). Lawrence, Kansas: The University of Kansas Institute for Research in Learning Disabilities, 1980.
- Wilcox, E. Identifying characteristics of NA adolescents. In L. E. Anderson (Ed.), Helping the adolescent with the hidden handicap. Belmont, California: Fearon, 1970.
- Zigmond, N. A prototype of comprehensive services for secondary students with learning disabilities. Learning Disabilities Quarterly, 1978, 1, 39-49.

Footnotes

¹Participating schools were South Junior High School, Lawrence, Kansas, and Santa Fe Trail Junior High School and Oregon Trail Junior High School, Olathe, Kansas.

²Although data were gathered for 40 minutes of class time for each student, an unfortunate event led to the destruction of half of the raw data for 20 students (10 student pairs). Thus, the data reported here represent 40 minutes of observation time for 74 students (37 pairs) and 20 minutes of observation time for 20 students (10 pairs).

³Note that the percentages in all the tables cannot be summed to equal 100%. Since the recording system allowed continuous recording, more than one behavior was often recorded in a single interval. Thus, these tables display the percentage of intervals in which the behavior occurred.

Acknowledgements

The authors wish to thank Alison Banikowski and Joan Butcher for their dedicated work in collecting the observational data for this study. We also gratefully acknowledge the help of Triningseh Sarutomo, Nancy Long, Trudy Rinne, Loretta Serna, John Udis, and Shirley Young in converting the data, and the help of Esther Lerner in analyzing the data.

Page 33

TABLE 1

NUMBERS OF STUDENTS PARTICIPATING IN
THE STUDY

	7	8	9	TOTALS
LD	14	15	18	47
NON-LD	14	15	18	47
				94

PAGE No: 1

YOUTH CODE NO: 00456

DATE: 2/22

	S									
T										
S	W		/			/				
P										
T										
S	Sp ₁	Cv	/			W				
P	S									
T										
S	/		/			/				
P										
T		SR						Ⓢ		
S	/	R	/			At				
P										
T	/									
S	/			Vo	Sp ₂	Cv	/	V _φ		
P					S					

10 sec.
10 sec.
10 sec.

	G									
T										
S	Ap				Sp ₁ Cv			Sp ₃		
P				S				S		
T										
S	R		/					R		
P					S					
T										
S	Sp ₁ Ap R		/					/		
P										
T										
S	/		/			/				
P										
T										
S	Aw Sp ₁		Av	/				/		
P			S							

35

FIGURE I

TABLE 2

TARGET STUDENT BEHAVIORS OBSERVED

Study Behaviors

1. Writing
2. Reading
3. Note taking
4. Test taking
5. Attending to work or class activity
6. Alternate reading and writing
7. Attending to the teacher when he/she speaks
8. Attending to peers in discussion
9. Attending to teacher and peers simultaneously
10. Organizing papers
11. Having appropriate materials
12. State of work area (neat vs. messy)
13. "Don't know" answer to teacher question
14. Inappropriate answer to teacher question
15. Incomplete answer to teacher question
16. Appropriate answer of more than 4 words
17. Appropriate answer of more than 4 words including one independent clause
18. Appropriate answer including 2 or more independent clauses
19. Appropriate answer including 2 or more independent clauses with a reason
20. Appropriate answer including 2 or more independent clauses with an example
21. Appropriate answer including 2 or more independent clauses with a qualification
22. Appropriate answer including 2 or more independent clauses with a comparison

(continued)

Table 2 (continued)

Classroom Conduct Behaviors

1. Appropriate/Inappropriate posture in chair
2. Staying in seat
3. Eating or chewing gum in class
4. Coming on time to class
5. Property destruction
6. Grooming behaviors
7. Discourteous behavior toward teacher
8. Leaving room without permission
9. Taking other students' materials
10. Playing with objects
11. Verbal disruption
12. Compliance with teacher instructions
13. Raising hand before speaking
14. Lowering hand while others speak
15. Bringing basic supplies to class
16. Sleeping

Social Behaviors

1. Making a statement to a peer
2. Making a statement to a teacher
3. Having a conversation with a peer or teacher
4. Asking a question to a peer or teacher
5. Laughing
6. Requesting feedback from the teacher
7. Requesting help from the teacher
8. Requesting permission from the teacher
9. Touching teacher or peer in appropriate/inappropriate manner
10. Hand gestures to peer or teacher

(continued)

Table 2 (continued)

Other Miscellaneous Behaviors/Variables

1. Glancing around room
2. Day dreaming/doing nothing for a whole 10 sec. interval
3. Repetitive motor movements
4. Passing papers
5. Seat location
6. Walking posture
7. Grooming
8. General attractiveness
9. Clothing neatness
10. Facial expression
11. Physical abnormalities
12. Activity level
13. Self talk
14. Obstruction

11

TABLE 3

TEACHER AND PEER BEHAVIORS OBSERVED

Teacher Behaviors

1. Giving initial instructions on day's activities
2. Making a statement to the target student or to the group
3. Instructing target student or the group on content or method
4. Requesting target student or group to do something
5. Requesting target student or group to stop doing something
6. Touching target student
7. Acknowledging target student
8. Giving positive feedback to target student or the group
9. Giving negative feedback to target student or the group
10. Asking a question to the target student or the class
11. Leaving the room

Peer Behaviors

1. Making a statement to the target student
2. Touching the target student in appropriate or inappropriate manner

TABLE 4

RELIABILITY FIGURES FOR TARGET STUDENT BEHAVIORS OBSERVED

<u>Student Behavior*</u>	<u>Number of Agreements</u>	<u>Number of Agreements Plus Disagreements</u>	<u>Percentage of Agreements</u>
Writing	38	39	97.44 %
Note taking	27	28	96.43
Test taking	148	148	100.00
Attending to work	263	268	98.13
Writing & Reading	443	444	99.77
Attending to teacher	140	145	96.55
Attending to peer	15	17	88.24
Attending to teacher/peer	16	18	88.89
Organizing papers	66	69	95.65
Appropriate materials	2	2	100.00
Work area	54	54	100.00
Appropriate answer	1	2	50.00
Ans. with 2 or more clauses	1	1	100.00
Answer with example	1	1	100.00
Statement to peer	35	46	76.29
Statement to teacher	7	9	77.78
Conversation with peer	95	95	100.00
Question to teacher	3	3	100.00
Laughing	10	11	90.91
Touching peer	0	1	0.00
Gesture	1	1	100.00
Posture	13	15	86.67
Out of seat	117	121	96.69
Eating	124	124	100.00
On time	10	10	100.00
Destructiveness	3	3	100.00
Grooming	24	27	88.89
Taking materials	0	1	0.00

(continued)

TABLE 4 (continued)

<u>Student Behavior*</u>	<u>Number of Agreements</u>	<u>Number of Agreements Plus Disagreements</u>	<u>Percentage of Agreements</u>
Object play	106	108	98.15 %
Compliance	18	21	85.71
Raising hand	9	9	100.00
Lowering hand	3	3	100.00
Basic supplies	10	10	100.00
Glancing	41	48	85.42
Doing nothing	47	47	100.00
Rep. motor movements	46	49	93.88
Passing papers	1	1	100.00
Seat location	10	10	100.00
Walking posture	4	4	100.00
General attractiveness	4	4	100.00
Clothing neatness	4	4	100.00
Facial expression	4	4	100.00
Physical abnormalities	4	4	100.00
Activity level	<u>4</u>	<u>4</u>	<u>100.00</u>
Totals	1960	2021	96.98 %

* Note: Behaviors not appearing in these tables did not occur during the reliability recording sessions.

TABLE 5

RELIABILITY FOR TEACHER AND PEER BEHAVIORS OBSERVED

<u>Teacher Behavior</u>	<u>Number of Agreements</u>	<u>Number of Agreements Plus Disagreements</u>	<u>Percentage of Agreements</u>
Initial instructions	36	38	94.74
Statements	19	26	73.08
Teaching	1	1	100.00
Positive requests	11	15	73.33
Negative requests	2	2	100.00
Acknowledgements	5	7	71.43
Positive feedback	5	5	100.00
Negative feedback	1	1	100.00
Questions	<u>42</u>	<u>50</u>	<u>84.00</u>
Totals	122	145	84.14 %
 <u>Peer Behavior</u>			
Statements	33	44	75.00 %

TABLE 6
ATTENTION TO WORK

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	20.89%	20.97%	4.5	5.9
8	26.56%	34.95%	6.73	8.0
9	37.13%	39.12%	7.12	8.46
ALL	29.06%	32.43%	6.24	7.7

TABLE 7
ALTERNATING READING AND WRITING

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	26.53%	30.91%	7.7	9.8
8	23.41%	28.86%	9.5	9.1
9	16.86%	24.98%	5.44	10.8
ALL	21.74%	27.93%	7.2	9.6

TABLE 8

READING

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	4.68%	6.74%	6.8	10.1
8	3.26%	.66%	7.5	9.0
9	8.82%	6.54%	9.4	9.0
ALL	5.89%	4.81%	8.3	9.4

TABLE 9

WRITING

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	1.83%	.26%	4.3	1.2
8	2.58%	1.36%	4.2	2.3
9	6.45%	4.50%	7.0	6.4
ALL	3.89%	2.28%	5.8	4.4

TABLE 10

NOTE TAKING

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	1.06%	.37%	4.8	1.7
8	5.27%	4.03%	11.9	11.0
9	4.71%	1.26%	17.1	7.5
ALL	3.79%	1.83%	12.2	7.5

TABLE 11

ATTENDING TO TEST MATERIALS

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	.37%	5.96%	5.7	5.4
8	1.33%	2.75%	5.3	12.5
9	2.42%	2.74%	9.8	24.5
ALL	1.47%	3.70%	7.2	8.9

TABLE 12

TOTAL STUDY BEHAVIORS: Attending to Work, Alternating Reading and Writing, Reading, Writing, Notetaking, and Test Attending

GRADE	Percentage of Behaviors		Average Duration in Intervals	
	LD	NLD	LD	NLD
7	55.36%	62.21%	5.8	7.3
8	62.41%	72.61%	7.7	8.3
9	76.39%	79.14%	7.1	9.2
ALL	65.84%	72.98%	6.8	8.3

TABLE 13

ORGANIZING PAPERS

GRADE	Percentage of Intervals		Average Duration in Intervals	
	LD	NLD	LD	NLD
7	3.66%	3.50%	3.4	2.6
8	4.62%	3.52%	3.8	3.3
9	3.31%	2.60%	2.7	2.7
ALL	3.81%	3.15%	3.2	2.8

TABLE 14

BRINGING BASIC SUPPLIES TO CLASS

Students Who:	LD	NLD
Brought Supplies	44	45
Didn't Bring Supplies	2	1
Had Missing Data	1	1

TABLE 15
CONDITION OF WORK AREA

GRADE	NEAT LD	MESSY	NEAT NLD	MESSY
	% of Time	% of Time	% of Time	% of Time
7	67 %	33 %	63 %	37 %
8	53 %	47 %	57 %	43 %
9	48 %	52 %	69 %	31 %
ALL	55 %	45 %	63 %	37 %

TABLE 16
 APPROPRIATE ANSWERS TO TEACHER QUESTIONS

GRADE	Number of Appropriate Answers		Average Duration in Intervals	
	LD	NLD	LD	NLD
7	11	15	1.45	1.07
8	2	12	1.00	1.42
9	3	2	1.00	1.00
ALL	16	29	1.00	1.34

TABLE 17
 COMPLEX ANSWERS TO TEACHER QUESTIONS

GRADE	Number of Answers		Average Duration in Intervals	
	LD	NLD	LD	NLD
7	4	7	2.25	1.14
8	0	3	--	2.33
9	0	0	--	--
ALL	4	10	2.25	1.50

TABLE 18
OUT OF SEAT

GRADE	Percentage of Intervals		Average Duration in Intervals	
	LD	NLD	LD	NLD
7	7.90 %	4.66 %	7.0	4.2
8	9.10 %	3.70 %	5.9	3.7
9	4.55 %	4.67 %	6.1	5.96
ALL	6.94 %	4.37 %	6.5	4.6

TABLE 19
VERBAL DISRUPTION

GRADE	Percentage of Intervals		Average Duration in Intervals	
	LD	NLD	LD	NLD
7	.62 %	1.23 %	1.2	1.1
8	1.04 %	.88 %	3.2	1.5
9	.03 %	.14 %	1.	1.
ALL	.57 %	.69 %	1.95	1.24

TABLE 20 (VC)
EATING

GRADE	Percentage of Intervals		Average Duration	
	LD	NLD	LD	NLD
7	1.43 %	3.31 %	19.5	--
8	12.08 %	7.51 %	42.	14.6
9	20.25 %	.34 %	56.5	20.
ALL	12.14 %	3.40 %	49.8	21.15

TABLE 21 (VP)
OBJECT PLAY

Grade	Percentage of Intervals		Average Duration in Intervals	
	LD	NLD	LD	NLD
7	8.34 %	4.80 %	3.4	2.15
8	13.37 %	6.12 %	4.9	2.8
9	5.62 %	1.12 %	8.5	3.3
ALL	8.79 %	3.74 %	4.8	2.5

TABLE 22
GROOMING

GRADE	Percentage of Intervals		Average Duration in Intervals	
	LD	NLD	LD	NLD
7	1.79 %	.97 %	2.0	1.2
8	2.90 %	3.04 %	2.7	2.6
9	1.74 %	1.31 %	2.07	1.4
ALL	2.11 %	1.73 %	2.3	1.8

TABLE 23

INAPPROPRIATE POSTURE

GRADE	Percentage of Intervals		Average Duration in Intervals	
	LD	NLD	LD	NLD
7	8.53 %	5.70 %	7.5	8.4
8	5.13 %	6.59 %	10.1	11.4
9	2.34 %	.11 %	9.4	2.
ALL	5.04 %	3.75 %	8.5	12.6

TABLE 24

PERCENT COMPLIANCE TO TEACHER REQUESTS

Requests to Do Something		Requests to Stop Doing Something	
LD	NLD	LD	NLD
75 %	78 %	50 %	55 %
(39/52)	(32/41)	(3/6)	(6/11)

TABLE 25

PERCENTAGE OF BEHAVIOR ENGAGED IN RULE VIOLATION

GRADE	LD	NLD
7	29.82 %	20.82 %
8	45.12 %	28.43 %
9	34.86 %	8.44 %
ALL	36.48 %	18.27 %

TABLE 26

ATTENTION TO TEACHER.

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	6.62 %	9.16 %	3.13	3.72
8	7.78 %	9.45 %	4.20	4.37
9	5.48 %	4.83 %	5.11	5.24
ALL	6.52 %	7.53%	4.04	4.28

TABLE 27

PERCENT ATTENTIVENESS TO TEACHER BEHAVIORS

Teacher Behavior	LD	NLD
Giving Initial Instructions	53 %	52 %
Making Statements of Fact	26 %	54 %

TABLE 28

SPEAKING TO TEACHER

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	.26 %	.82 %	1	1.4
8	.54 %	.48 %	1.25	1.6
9	.22 %	.39 %	1	1.4
ALL	.33 %	.54 %	1.1	1.45

TABLE 29

CONVERSATION WITH TEACHER

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	.00 %	.37 %	--	3.3
8	.25 %	.00 %	1.75	--
9	.06 %	.00 %	2	--
ALL	.10 %	.11 %	1.75	3.33

TABLE 30

QUESTION TO TEACHERS

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	.29 %	.26 %	1.1	1
8	.25 %	.40 %	1.2	1.6
9	.33 %	.14 %	1.5	1
ALL	.29 %	.26 %	1.8	1.2

TABLE 31

REQUESTING HELP

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	.43	.22	12	3
8	--	--	--	--
9	--	.03	--	1
ALL	.13	.08	12.0	2.33

TABLE 32

SPEAKING TO PEERS

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	3.11 %	3.31 %	1.09	1.01
8	3.01 %	3.00 %	1.01	1.04
9	3.58 %	3.02 %	1.05	1.04
A11	3.27 %	3.10 %	1.03	1.09

TABLE 33

CONVERSATION WITH PEERS

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	8.2 %	7.71 %	3.5	3.0
8	10.82 %	11.83 %	3.41	4.2
9	13.94 %	10.14 %	3.9	3.7
ALL	11.27 %	9.93 %	3.6	3.6

TABLE 34

AVERAGE NUMBER OF PEERS TO WHOM THE STUDENTS SPOKE

	LD	NLD
7	2.2	2.8
8	2.4	2.6
9	2.7	2.1
ALL	2.4	2.4

TABLE 35

INITIATORS OF PEER INTERACTIONS

	LD	NLD
Peer Initiates	35 %	40 %
Target Initiates	65 %	60 %

TABLE 36

RESPONSE TO INITIATIONS BY TARGET STUDENTS

	LD	NLD
Percentage Ignored	21 %	17 %
Percentage Receiving Response	79 %	83 %

TABLE 37

RESPONSE TO INITIATION BY PEERS

	LD	NLD
Percentage Ignored	3 %	1 %
Percentage Receiving Response	97 %	99 %

TABLE 38

TOUCHING PEERS IN A POSITIVE MANNER

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	.40 %	2.61 %	2.25	4.67
8	.65 %	.48 %	2	1.75
9	1.16 %	4.19 %	2.5	6.76
ALL	.78 %	2.59 %	3.07	5.11

TABLE 39

GESTURES

GRADE	- Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	.18 %	.11 %	1	1
8	.25 %	.04 %	2.3	1
9	.14 %	.00 %	1.4	--
ALL	.19 %	.04 %	1.4	1.0

TABLE 40

LAUGHING

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	.47	1.2	1	1.2
8	.71	.67	1.1	1.05
9	.99	1.4	1.4	1.2
ALL	.75	1.1	1.2	1.17

TABLE 41

GLANCING BEHAVIOR

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	1.32 %	2.16 %	1.2	1.3
8	2.29 %	1.17 %	1.3	1
9	2.20 %	1.31 %	1.2	1.2
ALL	1.97 %	1.52 %	1.25	1.20

TABLE 42

TALKING TO ONESELF

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	.18 %	.15 %	1.6	1
8	.14 %	.18 %	2	1
9	.17 %	.14 %	1.2	1
ALL	.15 %	.14 %	1.5	1

TABLE 43

PASSING PAPER

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	1.43 %	.41 %	2.3	1.2
8	.29 %	.15 %	1.1	1
9	.14 %	.25 %	1	1.3
ALL	.57 %	.27 %	2.3	1.2

TABLE 44

REPETITIVE MOTOR MOVEMENTS

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	5.49 %	2.35 %	4.8	2.3
8	2.37 %	.44 %	3.9	1.3
9	1.90 %	1.42 %	1.8	2.0
ALL	3.11 %	1.40 %	2.3	1.9

TABLE 45

DOING NOTHING

GRADE	Percentage of Intervals		Duration/Average in Intervals	
	LD	NLD	LD	NLD
7	2.01 %	.26 %	4.8	2.3
8	3.62 %	1.08 %	8.4	3.83
9	2.92 %	.87 %	5.6	4.4
ALL	2.86 %	.93 %	5.2	3.8

TABLE 46

NUMBERS OF STUDENTS EXHIBITING CERTAIN APPEARANCE FACTORS

Appearance Factor	Yes		No	
	LD	NLD	LD	NLD
Pleasant Facial Expression	36	46	10	0
Straight Walking Posture	42	46	4	0
Neat Grooming	40	46	6	0
Clothing Neatness	42	46	4	0
Positive General Attractiveness	36	44	10	2
Absence of Physical Abnormality	41	45	5	1

TABLE 47

STUDENTS' ACTIVITY LEVELS

Activity Level	LD	NLD
HIGH	10	4
NORMAL	35	42
LOW	1	0

TABLE 48
SEATING ARRANGEMENTS

LD Seating

	Left	Middle	Right
Front	6	6	8
Middle	4	5	4
Back	4	3	5

NLD Seating

	Left	Middle	Right
Front	5	5	7
Middle	3	4	5
Back	6	3	7

TABLE 49

Percentage of Intervals Observed in Each Classroom Context

	<u>7th Grade</u>	<u>8th Grade</u>	<u>9th Grade</u>
Seatwork	45.8	47.5	49.5
Lecture	12.7	23.1	17.0
Discussion	17.6	10.7	3.4
Audio-Visuals	9.8	8.3	12.9
Group Work	11.8	.5	9.6
Report	0.0	8.7	1.2
Free Time	2.3	1.2	6.4

APPENDIX A

CLASSROOM OBSERVATION CODE AND DEFINITIONS

CLASSROOM OBSERVATION CODE AND DEFINITIONS

TARGET STUDENT BEHAVIORS

A. Study Behaviors

1. The writing category (W) will be scored for each interval that the target student spends entirely with writing instrument in hand which is in contact with paper producing writing. A class period designated for the writing of a "theme" would probably provide scorable instances of this category.

2. The reading category (R) will be scored for each interval during which the target student is seated at a desk, hands empty except for possibly holding the reading materials and directs his/her gaze toward these reading materials during the full ten second interval. An example of a scorable instance of this category might be a free reading period where the target student appears to be reading a TIME magazine while not engaging in other activities (e.g., writing) during the full recording interval.

3. The notetaking category (N) will be scored for each interval during which (1) there has been a previous announcement by the teacher to the class that notetaking is expected, (2) there is some auditory stimulus toward which the student appears to be oriented, and (3) there is paper on the student's desk and writing utensil in the student's hand which is periodically coming into contact with the paper. A situation where the teacher provides notetaking materials (outlines) and instructs the class to take notes on a filmstrip being shown may provide scorable instances of this category.

4. Test taking (TT) will be scored for each interval that the target student is seated at a desk taking a test which has been specifically announced by and is being administered by the classroom teacher. The target student's behavior will be very similar to that of the AW category as the student will be alternately reading test questions and writing or otherwise indicating answers on appropriate materials.

5. The attending to work category (A) will be scored for each instance that the target student is orienting his/her head and/or eyes toward some appropriate visual stimulus as designated by the majority of the class orienting toward that visual stimulus and not engaging in other activities. An example of the general attending (A) category would include a student watching a film on the Civil War during a social studies class.

6. The alternate reading and writing category (AW) will be scored for each instance that the target student is seated at a desk performing written schoolwork that requires the student to alternate reading (looking at) written instructions on his/her desk or class blackboard or instructions dictated by the teacher and writing on appropriate materials. An example of this category would be when the target student was doing study questions over a chapter in a social studies book requiring the student to alternately look at written questions and to write answers to them.

7. The attending to teacher category (At) will be scored for each instance that the target student is orienting his/her head and/or eyes toward the teacher and is not engaged in other activities. An example of scorable instances of this category would be a student's attention to a teacher lecturing.

8. The attending to peer category (Ap) will be scored for each instance that the target student orients his/her head and/or eyes toward a peer or group of peers and is not engaged in other activities. Examples of scorable instances of this category would be overt eavesdropping on peer(s) conversations or watching a peer participate in discussion. Ap is not scored for an acknowledgment and orientation toward a peer when that peer is initiating a conversation with the target student.

9. The attending to the teacher and peers category (Atp) will be scored for each instance that the target student is orienting his/her head and/or eyes toward the teacher and peers and is not engaged in other activities. An example of this attention category might include an instance where the classroom teacher asked a question during a discussion to the class, called on a (non-target) student to respond and then debated that response with the other student while the target student sat passively observing, orienting toward and seeming to listen to the exchange.

10. The organizing of school materials category (Sh) will be scored for each instance during which the target student's hands are in motion and in contact with school materials (primarily papers, notebooks). For example, this category would be scored when the target student spent time leafing through a notebook, possibly to find an assignment to hand in to the teacher or to find a "clean" sheet of paper to write new assignments on.

11. The insufficient materials category (M) will be scored during the interval that it becomes apparent to the observer that

the target student lacks the materials to perform the teacher-designated task at any particular time. For example, after the teacher asks students to open a certain book, the student may ask the teacher or peer for a book to indicate to the observer that the student is unprepared with necessary class materials.

12. The state of the work area category will be scored every five minutes (one per observation data sheet) to indicate the "neatness" of the student's personal work area (usually student's desk and floor immediately surrounding it). A positive (+) rating is scored if the student has only materials with which he/she seems to be working on the desk (e.g., only paper, pen and social studies book for writing answers to study questions) with all other materials (e.g., other texts, purse, comb, etc.) beneath the desk in a rack provided or on the floor immediately under the desk and out of the aisle. A negative (-) rating will be scored if any additional materials to those that seem necessary for task completion (e.g., school materials, personal articles or garbage (shredded paper)) are in the student's immediate work area.

13. The don't know answer category (?) will be scored for each instance where a student is asked to answer a question in class discussion and says he/she doesn't know the answer.

14. The inappropriate answer category (-) will be scored for each instance where a student is called upon to answer a question in class discussion and he/she gives either a wrong answer or an irrelevant response (e.g., "May I go to the bathroom?")

15. The incomplete answer category (I) will be scored for each instance where a student is called upon to answer a question

in class discussion and he/she gives only part of the answer correctly. An example of this is the answer "Paper", to the question, "Name three products from trees."

The appropriate answer category will be scored for each instance where a student is called upon to answer a question in class discussion and he/she gives a correct answer. Further, the following categories will be scored to denote the type of appropriate answer:

16. An appropriate answer of 4 words or less (1).

17. An appropriate answer of more than 4 words including one independent clause (2).

18. An appropriate answer of more than 4 words including two or more independent clauses (3).

19. An appropriate answer of more than 4 words including two or more independent clauses and a reason (R). (Example: "When I'm in strange places I get very nervous, because I don't know what I'm supposed to do".)

20. An appropriate answer of more than 4 words including two or more independent clauses and an example (E). (Example: "Sometimes we have fights in my family, like a situation where I want something and they won't give it to me.")

21. An appropriate answer of more than 4 words including two or more independent clauses and a comparison (C). (Example: "Cars have four wheels, bicycles only have two wheels.")

22. An appropriate answer of more than 4 words including two or more independent clauses and a qualification (Q). (Example: "There are all men in my family; the sole exception is my mother.")

B. Social Behaviors

1. The statement to peer category (Sp) will be scored for each interval during which the target student orients head and/or body toward a peer and moves his/her mouth. Verbalizations to peers need not be audible to the observer. Each different peer with whom the target student interacts is specified by one unique numerical subscript during the course of an observation (Sp_1, Sp_2). Examples of this category could include the target student initiating a conversation by saying "hello" to a peer or responding to a greeting.

2. The statement to teacher category (St) will be scored exactly as previously outlined in the Sp category except that the verbalizations are directed toward the teacher.

3. The conversation category (Cv) will be scored for each interval following a single verbal interchange between the target student and another person that the dialogue is continued. For example, if a peer initiates a verbal interchange an "S" would be recorded in the peer column on the recording sheet. If the target student responds to the initiation verbally "Sp₁" would be recorded next in the student column. Any further verbalizations by these two persons would be recorded as "Cv" thereafter until another behavior or a ten second pause in the conversation occurred. If an observation begins, and the target student is in a conversation, "Cv" is simply recorded and sequence of initiations and verbalizations are not specified.

4. The laughing category (La) will be scored for each interval that the target student emits an audible or inaudible laugh.

5. The question category (Q) will be scored when the target asks an audible question of the teacher (Qt) or of a peer (Qp).

6. The requesting feedback category (RF) will be scored when the target student asks the teacher to give feedback about the work he/she is currently working on or has finished. An example of this category would be a student asking the teacher, "Did I do this right?"

7. The requesting help category (RH) will be scored when the target student asks the teacher for help on an assigned task. An example of this category would be a student saying to the teacher, "I don't understand this" or "Could you help me with this?"

8. The requesting permission category (RP) will be scored when the target student asks the teacher if she/he may do something. For example, the student may ask to sharpen a pencil, etc.

9. The touching category is scored in any interval during which the target student physically touches a peer (Tp) or the teacher (T_t). Touching not eliciting an overt unpleasant reaction in the person touched is scored as "T+". Physical aggression toward a specific person is scored as "T-". Examples of this category include any direct physical contact between the target student and another person in the setting. Positive instances might include a "Give me five!" greeting, and negative instances would include a slug delivered by the target student to a peer which provokes a frown or angry comment from the recipient.

10. The hand gestures category (G) will be scored when the target student makes a communicative gesture toward another person with his/her hands. An example of this category would be a wave of the hand in greeting a peer.

C. Classroom Conduct Behaviors

1. The inappropriate posture category (P-) will be scored for each interval that the target student changes the orientation of the trunk of his/her body from facing forward to rotating from 90° to 180° in an assigned seat, rotates back onto the posterior two legs of the chair on which he/she is seated or rests both feet for more than five seconds anywhere other than on the floor in front of the chair during any on-task academic activity. An example of this category would include the target student resting feet on a desk while leaning back in a chair.

2. The "out-of-seat category (V_o) will be scored during the interval that the target student's rear end breaks contact with the seat of his/her chair. Examples of scorable instances of this category include the target student leaving his/her desk to get paper or to talk to another student.

The "return-to-seat" category (V_{ϕ}) will be scored for the interval that the target student's rear end re-establishes physical contact with the seat of his/her chair after having previously broken contact with it. An example of the scoring of this interval would be to record this category during the interval that the target sits down after having, for example, obtained a sheet of paper from a distant peer.

3. The eating category (V_c) is scored for each interval that the target student appears to be chewing or eating as defined by at least three nonverbal identical jaw movements during an interval. An example of this category would occur when a student chews gum.

4. The on time to class category will be scored "+" if the student's posterior was in contact with a chair the moment class was scheduled to begin. A "-" was scored for any other location of the target student, in the classroom or otherwise.

5. The destruction of property category (Vd) is scored for each interval that the target student is involved in the destroying or marring (leaving lasting, visible effects) of school materials or property. Examples of this category would include writing on desks, breaking pencils, shredding paper, breaking lab equipment or crumpling paper.

6. The grooming behavior category (Vg) will be scored for each interval that the target student makes some manipulation of his/her own body, hair or clothing. Examples of grooming behaviors include cleaning fingernails, stroking or combing hair, readjusting contacts, or smoothing or straightening clothes.

7. The discourteous to teacher category (V_D) is scored for each interval that the target student makes negative comments or gestures within two intervals of some directive by the teacher. Examples of scorable instances of this category would include making obscene gestures to the teacher upon being instructed to stop talking or making threats toward the teacher like "My dad will take care of you."

8. The leaving the room category (V_L). Any unauthorized departures from the classroom proper will be scored in the interval that the target student exits from the classroom without having first requested permission to leave from the teacher or being specifically instructed to leave by the teacher.

9. The taking materials category (Vm) will be scored in each interval that the target student physically removes objects from another student's desk or person without requesting permission from that person. An example of this category would be taking another student's pencil or assignment from their desk without asking permission to do so.

10. The object play category (VP) will be scored during each observation interval that the target student manipulates objects to the possible distraction or disruption of others. Examples of this category would include throwing spit wads, tapping a pencil or pen on a desk, or making paper airplanes.

11. The verbal disruption category (VV) will be scored when the target student makes an unauthorized comment or noise that is fully audible to the observer. An example of this category would be a shouted comment regardless to whom it is directed.

12. The compliance category (C) will be scored for the specific interval during which the target student begins to follow a directive, command or request given by the teacher. Examples of scorable instances of compliance would include stopping talking upon being told to do so, taking out appropriate books upon request and putting away materials upon request at the end of a class.

13. The appropriate handraising category (Rh+) will be scored after the teacher has asked a nonspecific question (not directed at any one person by name) or after the teacher has announced a group discussion period and during which the target student raised an arm parallel to the trunk of his/her body, hand pointed toward the ceiling. A scorable instance of the RH+ category would occur if,

in response to a general discussion question asked by the teacher, the target student raised his/her hand as specified (regardless of whether the target student was acknowledged or contributed appropriate information).

The inappropriate handraising category (Rh-) will be scored for any interval in which the target student raises his/her hand in an inappropriate manner (to the side into an aisle and/or accompanied by loud verbalizations) or when it is clearly not appropriate (when someone else is speaking or when the teacher has specified "No more questions."). An example of an inappropriately raised hand could be when the target student raises a hand after another student had already been called upon to answer a question.

14. The appropriate hand lowering category (Lh+) will be scored after the target student has raised a hand, has either been called on or passed over for some other students' response and lowers his/her hand within two seconds of one of the preceding occurrences. An example when the Lh+ category would be scored would be during a class discussion when the target student lowers his/her hand immediately following the teacher's verbal acknowledgment of another student's raised hand.

The inappropriate handlowering category (Lh-) will be scored in an interval in which the target student fails to lower his/her hand after another student has been called upon or after the teacher or activity director specifies "No more questions" or a change in activities (e.g., from discussion to lecture). An example of this category would include persisted handraising during a lecture where the lecturer has specified no questions and is ignoring the target student with raised hand.

15. The basic supplies category will be scored "+" if the student arrives in class and shows evidence within the first five minutes of having paper and a writing utensil (regardless of what other material may also be in evidence). If paper and writing instrument are not visible on the student's desk within the first five minutes of class, or if the student has to ask a teacher or peer for one or both during the period, a "-" will be scored in this category.

16. The sleeping category (S1) will be scored for each full interval that the target student spends with eyes closed and body motionless while seated at a desk.

D. Other Miscellaneous Behaviors or Variables Observed

1. The glancing category (G1) will be scored during each observation interval that the target student shifts his/her orientation or gaze momentarily (at least for one second and for not more than five seconds) from ongoing on-task academic activity. Examples of this category would include glancing up away from the desk while writing during a test or glancing momentarily at a sneezing peer while writing definitions to vocabulary words.

2. The inactive or "doing nothing" category (N) will be scored for each full interval that the target student spends motionless, gaze not specifically directed at peers or the teacher or printed matter, with no specific schoolwork (e.g., open books, papers, pen) in evidence in the student's vicinity. A scorable instance of this category would include intervals when the student appeared to be daydreaming; that is, when there were no ongoing auditory distractions (teacher's lecture, peer's conversations) in the student's vicinity and no "ready" assignment visible on the student's desk.

3. The repetitive motor movement category (RM) will be scored during each interval that the target student moves some part of his/her body for three or more essentially identical occurrences during a single ten second interval. These movements are usually considered "absent-minded" and don't interrupt peers or teachers. Examples of scorable instances of repetitive motor movements include leg swinging, foot-tapping, finger drumming, or rocking back and forth while seated.

4. The paper passing category (PP) will be scored during each interval that the target student either passes or receives paper. Examples of scorable instances in this category would include passing notes to peers, passing requested paper for assignments or passing schoolwork to check answers.

5. Seat Location. Each classroom was divided into nine sections. The "front" section was determined by the direction in which most of the students sat facing whatever area the teacher spent most of his/her teaching (speaking to the entire classroom) time during each observation. The front one third of the classroom seating area was then divided into three more sections: right, middle and left of the observer (who observed and recorded this from the back section of the classroom). For example, a student who sits in the front right hand section of the classroom will be recorded as RF, if he/she sits in the two remaining front sections it will be recorded as MF or LF. Likewise, students in the middle (M) sections will be recorded as seated in the RM, MM, or LM and in the back (B) section as seated in the RB, MB, or LB sections, respectively.

6. The walking posture category will be scored positively (+) if the student stands and walks with body upright perpendicular to the floor, both shoulders perpendicular to spine and eyes directed in a line parallel with the floor. A negative (-) score delineates a walking posture with downcast eyes and/or rounded shoulders **and/or** "stooped" posture.

7. The grooming category. A positive (+) rating in this category will be scored when the student's hair seems neat and clean and skin evidences a lack of noticeable dirt. A negative (-) rating delineates any deviation from this.

8. The general attractiveness category will be scored positively (+) or negatively (-) completely on the basis of the observer's own values and judgement with respect to the observer's initial impression of the target student.

9. The clothing category: A positive (+) rating in this category signifies clean, unwrinkled and neatly arranged clothing. A negative score (-) indicates dirty and/or badly wrinkled and/or ill-arranged clothing.

10. The facial expression category will be scored negatively if the student frowns, lowers his/her eyelids or has his/her mouth noticeably open for the majority of an observation period. The absence of any of the previously described facial behaviors (i.e., a "pleasant" expression) will receive a positive (+) score.

11. The physical abnormalities category will be scored positively if the student has no clearly observable physical defects or protheses. If the student evidences any one of the preceding, a "-" will be scored.

12. Activity level category. Three ratings were possible in this category. A "+" score will indicate that the student is noticeably more active than peers in the same classroom. A "-" score will indicate that the student observed is noticeably less active than peers, possibly evidenced by yawning and/or resting on desk. A "0" score will indicate a student who seems to the observer to be no more or less active than peers ("normally" active).

13. The self-statement or self-talk category (Ss) will be scored for each interval that the target student moves his/her mouth in speech-like motions without orientation toward another person and without the orientation of any person in the vicinity toward the target student. An example of Ss would be a semi-audible curse emitted by the target student upon receiving a low grade on a test or mouth movements while completing an assignment or taking a test.

14. The obstruction category (Ob) was scored if a person or persons walked or stood between the target student and the observer such that the observer could not see the student.

TEACHER BEHAVIORS

1. The initial instructions category (I) will be scored when, at the beginning of class or in a transition to a new activity, the teacher tells the class what their daily assignment or activity is and how to complete it.

2. The statement category will be scored when the teacher makes a factual statement to the target student (S) or to the class as a whole (©).

3. The instruction/teaching category (In) will be scored when the teacher instructs the students on how to do something such as how to write a complex sentence. Demonstration may be involved in the instruction.

4. The positive request category will be scored each time the classroom teacher asks the target student to do something either directly or indirectly (i.e., by name specifically (R_1) or by requesting the class as a whole to perform some action (R_1)). An example of this category might be a teacher's request to the target student to clear off a desk or take a book out or the teacher saying "It's time to get to work, Bill."

5. The negative request category will be scored each time the teacher asks the target student (R_2) or class as a whole (R_2), either directly or indirectly to stop doing something. Examples of this category would be requests to be quiet, to stop an activity or to stop being so "messy."

6. The touching category (T) will be scored each time the teacher touches the target student such as patting the student on the shoulder.

7. The acknowledgment category (K) is scored after the target student has been scored for raising his/her hand and has been called upon or acknowledged by the teacher. An instance where the target student raised his/her hand appropriately to answer a teacher's question and was called upon by the teacher would be scored as an acknowledgement.

8. The positive feedback category will be scored when the teacher makes a positive, praising statement toward the target student (SR+) or toward the class as a whole ($SR+$). Instances

of scorable positive feedback or compliments would include statements like "The class did a great job on this test" or "Good paper, Sarah."

9. The negative feedback category will be scored when the teacher makes a negative, critical statement toward the target student (SR-) or toward the class as a whole (SR-). Scorable instances of negative feedback or criticism from the teacher would consist of comments like "Can't you do anything right?" or "This assignment is a disaster."

10. The questioning category will be scored in order to attempt to tally the number of opportunities the teacher presents in the classroom for the target student to participate verbally in class activities. The teacher may ask a question specifically to the target student (Q) or generally to the class as a whole (Q). Examples of scorable questions would include "Can you remember a major product of Spain, Tom?" (when Tom is the target student) or "Who can explain the theme of the movie?" (to the entire class of which Tom is a member).

PEER BEHAVIORS

1. The statement category (S) will be scored when a peer makes an audible or inaudible statement to the target student. This behavior will be characterized by the peer facing the target student and speaking.

2. The touching category will be scored as a T+ when a peer touches the target student in an appropriate way. It will be scored as a T- when a peer aggressively touches the target student.