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Adolescents with Disabilities in High School Setting: Student Characteristics and Setting Dynamics

Donald D. Deshler[1]*, B. Keith Lenz*, Janis Bulgren*, Jean B. Schumaker*, Betsy Davis, Bonnie Grossen**, and Janet Marquis***

**University of Kansas*
***University of Oregon*

The purpose of this investigation was two fold: (1) to gather descriptive information in the areas of salient student characteristics, level of participation in general education classes, current level of functioning, and student outcomes (e.g., GPAs, performance on state or national exams) for students with disabilities (SWDs) in high school settings; (2) to get a day-long picture of what life is like in the lives of high school students with disabilities. The intention of this study was to move beyond the "one-shot," partial view of the kinds of data sets and information primarily available to educators through traditional studies that generally do not consider the broader array of contextual factors that impact student performance. Collectively, the data from these two studies were seen as being foundational in the eventual design of interventions to enhance student performance.

Keywords: adolescent, disability, characteristics, high school

Since the inception of the learning disability field, considerably less attention has been devoted to adolescents with LD than their younger-aged peers (Deshler, Ellis, & Lenz, 1996). As adolescents enter secondary schools, especially high school, they are confronted with a broad array of curricular and social demands that often exceed their skill level. The resultant outcome is often an escalating failure rate on classroom assignments and a growing sense of hopelessness (Snyder, 1994). The challenges are often greatest in literacy-related areas (i.e., reading, writing, listening). For example, a growing number of adolescents are incapable of reading road signs, newspapers, or bus schedules, let alone high-school textbooks, technical manuals, or basic directions on the job (Hock & Deshler, 2003). Included in the ranks of these illiterate adolescents are many students with learning disabilities who, according to IDEA 1997, are to have access to and benefit from rigorous general education curricula that will lead to standard high school diplomas and success on state outcome assessments (Nolet & McLaughlin, 2000).

Because so many adolescents with disabilities experience difficulty attaining the academic and social competencies required for successful participation in rigorous general education curricula, educators need to have a solid understanding of those factors related to the failure experienced by these students. The most notable and discouraging index of the failure encountered by adolescents with disabilities is the fact that an average of 38% of these students drop out of school compared to 25% of their peers without disabilities (Wagner, Blackorby, & Hebbeler, 1993). As a result,

1. Address correspondence to Don Deshler, Ph.D., University of Kansas, Center for Research on Learning, 518 J. R. Pearson, 1122 West Campus Road, Lawrence, KS 66045. E-mail: ddeshler@ku.edu

they face the real possibility of being undereducated, underemployed, and ultimately under prepared to successfully participate in the mainstream of society in the twenty-first century (Sitlington & Frank, 1990).

Making sound programming decisions on behalf of adolescents with disabilities is also dependent on having a thorough understanding of the attributes of the students in terms of their defining characteristics, including how they are currently performing relative their grade level curriculum demands (Kleinhammer-Tramill & Gallagher, 2001). In the absence of this information, programming decisions for adolescents with disabilities may be inaccurate or inappropriate (Shinn & Hubbard, 1992). Because of the shortness of instructional time available to teach adolescents with disabilities, an accurate profile of the factors that characterize these students as learners is crucial, so programs can best be matched to meet their unique needs (Deshler, Robinson, & Mellard, 2004). Additionally, given the pressing expectation for students with disabilities to perform well on statewide assessments, educators need to understand the degree to which their current performance is at variance with acceptable levels of performance. This knowledge can be used to guide educational programming and decision-making (Mercer, Lane, Jordan, Allsop, & Eisele, 1996).

While trying to create a profile from measures of student characteristics is necessary, it may be insufficient and represent a relatively limited perspective of the variables accounting for these student's achievement problems. That is, the prevailing assumption has been, if an adolescent is not performing well in a criterion environment (e.g., the general education classroom), the problem must reside within the student. Hence, detailed explanations for a student's poor performance have been sought by administering one test battery after another. After a thick file describing the "student's problem" has been assembled, an intervention program has been designed to "fix or change" the student (Stover, Shinn, & Walker, 2002). Furthermore, most of the data that typically have been gathered in order to better understand student performance have tended to be a set of single measures, that generally represent a "snapshot" at a given point in time; or, at best, multiple data points over time (Deshler, 2002).

Thus, in order to get a more complete profile of adolescents with disabilities who struggle to meet demanding requirements of high school curricula as well as to respond to the pressures associated with being accepted within the adolescent peer culture, data should also be collected that goes beyond the "one-shot," partial view of the kinds of data sets and information primarily available to educators through traditional assessments that generally do not consider the broader array of contextual factors that impact student performance. Therefore, to fulfill the purposes of this investigation, two studies were conducted. The purpose of the first study was to gather descriptive information in the areas of salient student characteristics, level of participation in general education classes, current level of functioning, and student outcomes (e.g., GPAs, performance on state or national exams). The measures gathered in the first study generally represented static snapshots of student performance. The purpose of the second study was to get a day-long picture of what life is like in the lives of high school students with disabilities. The intention of this study was to move beyond the "one-shot," partial view of the kinds of data sets and information primarily available to educators through traditional studies that generally do not

consider the broader array of contextual factors that impact student performance. By getting this day-long view, a better sense of the totality of pressures and interactions that adolescents encounter was sought. Collectively, the data from these two studies were seen as being foundational in the eventual design of interventions to enhance student performance.

Methods

Settings (For both Study1 and Study 2)

Nine public high schools serving grades 9 through 12 participated. Three types of high schools participated. Three (hereafter referred to as "urban high schools") represented schools located in high-density areas (i.e., urban/metropolitan areas populated by more than 150,000 people) and in which more than 50% of the student population is comprised of "students living in poverty." "Students living in poverty" were defined for the purposes of this study as students who had applied for and received free or reduced-cost lunch benefits. Three of the high schools (hereafter referred to as "rural high schools") represented schools located in low-density population areas (i.e., towns of fewer than 10,000 people and fewer than 150 people per square mile) and in which more than 10% of the student population was comprised of students living in poverty. Three of the high schools (hereafter referred to as "suburban high schools") represented schools that were located in towns having a population of more than 45,000 people and fewer than 150,000 people and in which fewer than 10% of the student population was comprised of students living in poverty.

Three of the high schools (one urban, one rural, and one suburban) were located in Kansas. Three of the high schools (one urban, one rural, and one suburban) were located in the state of Washington. Two schools (one rural, one urban) were located in California. One school (suburban) was located in Oregon. The student populations in the urban schools ranged in size from 1,031 to 3,508 students, while in the rural schools the populations ranged in size from 330 to 693 students. The student populations in the suburban schools ranged in size from 931 to 1,691 students.

The percentage of students with disabilities in the nine schools ranged from 3.9% in a suburban school to 14.8% in an urban school. Six of the schools had Caucasian majorities, ranging from 67% to 95% of the student population. One school had a Latino/Hispanic majority; one school had an African-American majority; and one had an Armenian majority.

A rigorous general education course was defined as a math, English, social studies/history, science, or foreign language course that a student must pass in order to earn a standard high-school diploma, that contributes credits toward a standard high-school diploma (as in the case of a foreign language course), that has been designed for helping students meet state standards, and that was being taught by a teacher who has credentials in the subject area.

Subjects

Students (For both Study 1 and Study 2) The students with disabilities (SWDs) targeted in each of these studies were students who had been formally classified as having a disability (e.g., a learning disability, emotional disorder/disturbance, behavioral disorder, physical disability, visual disability, hearing disability, or other health

impairment) according to state guidelines. In addition, they were students who had either been enrolled in one or more rigorous general education courses as defined above or who were judged by their special education teachers as students who could successfully have been enrolled in one or more rigorous general education courses successfully if they had had the appropriate instructional support. These were students who were expected to earn standard high-school diplomas.

In some of the participating schools, "at-risk students" participated. "At-risk (AR) students" were students who had each earned more than one failing grade in a required course in a previous semester or who were already failing at least one rigorous general education course as defined above at the time of the study. In addition, they were also students who had not been formally classified as having a disability. It was deemed important to keep these individuals in the investigation because there is often significant overlap between some students who are classified as having a disability and those who struggle in learning (AR students) but who aren't formally classified.

A third group of students who participated was normally achieving (NA) students. These were students who were enrolled in the same ninth-grade English classes as participating students with disabilities and who were earning at least a "C" grade in those course.

Students (Specific to Study 1) A total of 513 students were involved in different aspects of this study—150 were students with disabilities (SWDs), 280 were normally-achieving students (NAs), and 197 were at-risk students (ARs). 145 SWDs completed the Student Survey, 100 SWDs completed the Student Satisfaction Form, 149 SWDs were administered the MAST, and 102 SWDs were administered the Vocabulary subtest of the WISC III or the WAIS III (see Measurement section below for a description of the measures). 252 NAs completed the Student Survey, 217 NAs completed the Student Satisfaction Form. One hundred ninety-one ARs were administered the MAST.

Students (Specific to Study 2) A total of 53 students were involved in this study. Twenty-six were SWDs (10 students were from urban high schools, 8 were from suburban schools, and 8 were from rural schools) and 27 were NAs (11 students were from urban high schools, 8 were from suburban schools, and 8 were from rural schools). Each of the students in this study also was a part of Study 1.

Measurement

Student instruments (For both Study 1 and Study 2) The **Student Demographics Form,** was used to gather personal information about the participating students such as their age, race, sex, and whether they receive free or reduced-price lunches at school. There were 11 items on the form. Students responded by filling in the blank on about half of the items and by indicating the best answer among several answers for the other half of the items.

Second, data related to the participating students were gathered from school records using a form called the **Student Information Form.** Two versions of the form were created, one for the SWDs and one for the normally achieving students. The form was used to gather standardized test scores, the names of classes in which the student was enrolled, the semester grades earned by the student, the number of

days the student was absent, suspended, or expelled, the number of disciplinary actions incurred during each year of high school, and scores on state competency exams. The only difference between the version for the SWDs and the normally achieving students was that there was a place on the version for the SWDs to record the scores earned on individually administered achievement and aptitude tests and information about the students' disabilities.

Student instruments (Specific to Study 1) Students with disabilities were administered two tests. **The Multilevel Academic Survey Test (MAST)** was administered in order to provide a standard measure of student achievement across students with disabilities in the different participating schools. The MAST was also administered to AR students in two of the schools. This test yields achievement scores in reading and math. Percentile scores and grade-level achievement scores were utilized to describe the students. Additionally, the **Vocabulary subtest of the *WAIS-III*** (or the WISC-R, as appropriate for age) was administered in order to obtain a measure of student ability across students with disabilities in the different schools. Raw scores were utilized from this test to describe the students.

Other instruments (Specific to Study 1) The **Types of Classes Form** was used to gather information about the types of classes in which the students with disabilities were enrolled. The form consisted of five pages, each corresponding to a different type of class: (a) classes taken for general education credit that were taught by a special educator (Type A); (b) classes taken for general education credit in which only low-achieving students and students with disabilities were enrolled that were taught by a general education teacher (Type B); (c) rigorous general education classes taught by a general education teacher and in which a heterogeneous population of students was enrolled (Type C); advanced placement classes (Type D); and other classes (e.g., electives such as physical education, art, band) (Type E). On each page were spaces where the teacher could specify the name of the course, the name of the teacher teaching the course, and the number of students with disabilities enrolled in the course.

Other instruments (Specific to Study 2) Two observation forms were used during this study. The first was **The Class Observation Form.** This form was completed during each class period throughout the course of an entire school day. The form consisted of a variety of spaces within which the researcher could record the following information: subject area, time period, type of class (e.g., remedial, rigorous, etc.), seat location, the mood of the target student, number of minutes before the target student was on task, number of direct contacts initiated by the teacher with the student, number of direct contacts initiated by the student with the teacher, number of different students who initiated contact with the target student, and the number of students with whom the target student initiated contact. In addition, space was available to record class activity, assignments, the target's response to activities, accommodations, and homework assignments.

The second observation form was **The Non-Class Observation Form.** This form was completed throughout each out-of-class time period including hall passing, lunch, and before and after school times. Spaces were available on the form to record the following information: target's mood/demeanor, number of different students who initiated contact with the target, number of different students with whom the target initiated contact, number of direct contacts initiated by school staff with the

target, number of contacts initiated by the target with school staff, and description of the nature of the contacts (e.g., any rejections, aggressive behavior, etc.), and a description of where the target chose to walk, stand, or sit in relation to others .

Finally, during each class period, the researcher completed a **Class Description Form.** This form contained seven items related to what had transpired during the class period. For example, the first item asked the observer to provide a general description of the lesson, the fourth item asked the observer to describe the relationship between the target student and other students, and the sixth item asked the observer to describe the general outcome of the class for the target student. All of the items were open-ended, and the observers wrote their answers in sentence form under each item.

Procedures

Procedures for both Study 1 and Study 2 A staff member in each high school volunteered to be the liaison person for the investigation. This person introduced researchers to key people throughout the school, scheduled meetings, and generally assisted researchers in making the necessary arrangements to collect data. As a part of the process of obtaining informed consent from the students and their parents, the types of data to be collected and what would be required of the students was explained to them. To collect information on the Student Demographic Form, research assistants met individually with students during a study hall, resource room period, or at another time convenient for the student that was least disruptive to his or her class schedule. Prior to beginning data collection, the research assistant explained to the students that a study was being conducted to determine how adolescents learn and the kinds of instructional conditions that work best for them in order to eventually determine how to design more effective instructional practices. Students were given an opportunity to ask any questions that they had for clarification. Each student was paid a fee of $25 for participating in this study. Research assistants made arrangements with office personnel within each high school to gain access to student records to collect the information on the Student Information Form. Data on course schedules, standardized test scores (e.g., state assessments or national achievement test scores), grade-point averages, and attendance were collected and recorded on a separate Student Information Form for each student. In some cases, school policy did not permit researchers to have access to these records. In those instances, school personnel completed the Student Information Form for each participating student.

Procedures specific to Study 1 The MAST was group administered in either an English or math class to the entire class of students or, in the case of some of the SWDs, in a resource room/special education classroom. The Vocabulary Subtest of the WISC III or the WAIS III was individually administered to students at the time that information on the other student forms described above was collected.

Procedures specific to Study 2 A staff member in each school volunteered to be the liaison person for the investigation. This person was contacted and asked for a list of ninth-grade students who would be possible participants in this study. Once the list was produced, each student and his/her parents were contacted individually for the purpose of explaining the study and obtaining informed consent. The goal was to recruit three SWDs and three NAs who were matched in term of gender and race

and who they felt would be willing to participate in this study. This goal, however, was not fully met. In one school only two SWDs were involved in the study as one student dropped out at the last minute. Because of difficulties of receiving informed consents from students who were initially targeted for the study, it was not possible to match as well on gender and ethnicity as had been hoped.

The following explanation was given to the volunteering students and their parents: "I will be spending one full day with you at school. I'll meet you when you arrive at school and basically be with you throughout the day. I'll sit in your classes with you and be with you outside of class as well, for instance, in the lunchroom. However, I'll maintain enough distance that it won't be obvious that you are being observed. I'll just be a 'fly on the wall,' observing but not interrupting what happens during the course of a day in your life at school. I'll be observing the kinds of things you are expected to do in your various classes, with whom you interact, and so on. We are interested in learning how you spend your time and what kinds of things are expected of students like you in your high school. Most importantly, nothing will be done throughout the course of the day to disrupt your class work or your normal activities or to draw attention to you. We do not want anyone to know that you are being observed."

On the day of the scheduled observation, the student was met at the agreed upon location and reminded not to talk to others about being "shadowed," but that if explaining the observer's presence became necessary, the student should just say that observer was there "to get an idea of what it's like to be a high school student today." Also, the student was reminded not to talk with the observer during the day. The class and non-class observation forms were used throughout the day. Observers attempted to maintain a six-foot distance between themselves and the student and to remain as unobtrusive as possible.

Results for Study 1

Student Demographic Results

The SWDs in this study were markedly different than students in the NA/AR group in terms of gender, ethnicity, and poverty. Specifically, 61% of the SWDs were males versus 47% males in the NA/AR group. For the SWD group, 22.1% were Hispanic/Latino, and 13.3% were African-American. In the NA/AR group, only 9.5% were African-American, and 1% were Hispanic/Latino.

Reports of free and reduced lunch programs for SWDs indicated that 19.47% received free lunches (versus 3.48% for the NA/AR students) and 6.19% received reduced lunch prices (versus 3.48% for NA/AR).

Relative to special education category, 66.37% of the SWDs were classified as LD, 3.54% were classified as BD, 1.77% were classified as MR, 1.77% were classified as TMR, and 15.92% were classified either having a sensory disability, other health impaired, or having a multiple diagnosis. About 11% did not have a formal special education categorical designation even though they were receiving special education services.

Level of Participation in General Education Classes Results

Searches of school records revealed that, overall, a very small percentage of SWDs participate in rigorous general education courses in which a heterogeneous population of students is enrolled and which are taught by general education teachers.

Table 1 depicts the total number of SWDs enrolled in each site, the possible rigorous enrollments in general education classes (this number was determined by multiplying the number of special education students by four courses—assuming each student should be enrolled in a minimum of four core courses), and the actual number of enrollments at each site. The number of actual enrollments in rigorous general education courses varies widely across the schools, depending on the model of educational programming adopted by the school. For example, in Suburban School #2 and Rural School #2, the majority of students are enrolled in rigorous core courses. In other schools, very few actual enrollments in these types of courses had occurred.

Table 1 *Rigorous general education enrollments for students with disabilities*

	Rural Schools			Suburban Schools			Urban Schools		
	1R	2R	3R	1S	2S	3S	1U	2U	3U
Total number of special education students	48	14	50	62	76	67	89	180	219
Total possible core class enrollments[1]	192	56	200	248	304	268	356	720	876
Actual number of rigorous general education enrollments	15	49	6	35	304	67	4	166	36
Estimated number of students with disabilities by general education teachers	55	24	N/A[2]	24	17	21	13	51	N/A

[1] This number reflects the number of enrollments possible if every student with a disability were enrolled in four rigorous general education classes each day

[2] N/A = not available.

When general education teachers were asked to estimate the number of SWDs in their classes, they estimate nearly twice as many SWDs to be in their classes as there were in reality (218 were estimated versus 130 actual cases). In all but two teachers' cases, they dramatically over estimated the number of SWDs in their classes.

Current Level of Functioning Results

Tables 2 and 3 show the academic achievement of SWDs and AR students, respectively, on reading comprehension and mathematics as measured by the Multilevel Academic Survey Test (MAST). For both SWDs and AR students, the scores are very low. Specifically, for SWDs, the average raw score for reading comprehension was 29.3 (2nd percentile) and the mean raw score for math was 12.2 (1st percentile). Interestingly, the scores earned by the AR students were nearly identical to those earned by the SWDs, with only slightly higher mean raw scores (33.5 and 13.2

respectively); however, their performances also placed them in the 3rd percentile in reading and the 1st percentile in math.

Table 2 *Mean MAST scores for students with disabilities*

	No. of students	Mean Raw Reading Score	Reading percentile	Mean Raw Math Score	Math Percentile
Rural #1	10	37	3	15.6	2
Rural #2	8	25.6	1	12.9	1
Rural #3	71	19.9	1	10.7	1
Total Rural	**89**	**27.5**	**1**	**13.1**	**1**
Suburban #2	8	35.6	3	12.1	1
Suburban #3	9	35	3	11.9	1
Total Suburban	**17**	**30.6**	**2**	**12**	**1**
Urban #1	4	33.5	3	11.8	1
Urban #2	15	27.9	1	8.9	1
Urban #3	24	28.3	1	13.6	1
Total Urban	**43**	**29.9**	**2**	**11.4**	**1**
Overall	**149**	**29.3**	**2**	**12.2**	**1**

Table 3 *Mean MAST scores for at-risk students*

	No. of students	Mean Raw Reading Score	Reading percentile	Mean Raw Math Score	Math Percentile
Rural #3	155	27.5	1	12.5	1
Urban #1	31	37.7	3	16.4	2
Urban #2	5	35	3	10.6	1
Urban Total	**36**	**36.5**	**3**	**13.5**	**1**
Overall	**191**	**33.5**	**3**	**13.2**	**1**

The Vocabulary subtest of the WISC III (or WAIS III depending on age) was given to SWDs as a measure of ability. The average scale score for the 76 students tested with the WISC was 8, with a range of 6 to 9. A scale score of 8 is equivalent to performance in the 25th percentile and an IQ of approximately 90. The average scale score for the 26 students taking the WAIS III was 7, with a range of 6 to 9. No ability measure was administered to the NA and AR groups.

Student Outcome Results

Table 4 shows that SWDs performed considerably poorer than their NA/AR counterparts in their coursework as reflected by grade-point averages (GPAs). Specifically, in core courses, 51.3% of the SWDs achieved GPAs of D or F, and 44% received GPAs of C. Thus, even though the majority of students are not enrolled in

rigorous general education courses, they are still doing poorly in the courses in which they are enrolled. In contrast, only 22.4% of the NA/AR group received GPAs of D or F, and 46.6% received GPAs of C. Only 4.61% of the SWDs received grades of B or A, whereas 31% of the NA group had GPAs in the B or A range.

Table 4 *Percentage of students earning certain grade point averages*

Grade	SWDs*	NA/AR**
A	0.01%	2.48%
B	4.60%	28.57%
C	44.00%	46.58%
D	37.30%	16.77%
F	14.00%	5.60%

*Students With Disabilities
**Normal Achieving and At-Risk Students

Table 5 contains a summary of the performance of SWDs and NA/ARs on state assessments and national tests (e.g., the Metropolitan Achievement Test or the Iowa Test of Basic Skills); the data reveal that SWDs performed markedly poorer than NA/AR students. The percentage of SWDs receiving a score at or below the 20th percentile for reading achievement ranged from 86% to 100% across the participating schools. For math achievement, between 68% and 100% of SWDs scored at or below the 20th percentile, and for written expression, all of the SWDs scored at or below the 20th percentile. In contrast, the percentage of the NA/AR students scoring at or below the 20th percentile was less than half of the percentage of SWDs scoring at or below that level in each school.

Table 5. *Percentage of students earning State/National Achievement Test Scores at or below the 20th percentile*

	SWDs*	NA/AR**
Reading	86-100%	0-43.75%
Math	68-100%	0-41.67%
Written Expression	100%	0-50.00%

*Students With Disabilities
**Normal Achieving and At-Risk Students

Results for Study 2

Student Demographic Results

The SWDs in this study were markedly different from students in the NA group in terms of gender, ethnicity, and poverty. Specifically, 71% of the SWDs were males versus 53% males in the NA group. For the SWD group, 4.76% were Hispanic/Latino, and 28.57% were African-American. In the NA group, only 5.88% were African-American, and there were no Hispanic/Latino students.

Reports of free and reduced lunch programs for SWDs indicated that 9.52%

received free lunches (versus 5.88% for the NA students) and 4.76% received reduced lunch prices (versus 5.88% for NA/AR).

Relative to special education category, 52.38% of the SWDs were classified as LD, 4.76% were classified as BD, 4.76% were classified as MR, 15.92% were classified either having a sensory disability, other health impaired, or having a multiple diagnosis, and 22.18% did not have a formal special education categorical designation even though they were receiving special education services.

Classroom Observation Results

The observation data of in-class behavior by target students suggests that there is considerable similarity in the behavior of SWDs and NAs and in the behavior of teachers and their peers toward them. First, the majority of target students from each group sat near the front of the classroom (40% SWDs and 34% of NAs), whereas more NAs sat in the back of the classroom than did SWDs (28% versus 19%). However, NAs began work at the beginning of class more quickly than did the SWDs (1.45 minutes versus 2.23 minutes before the student was on task).

The pattern of contacts between the target students and others (peers or teachers) suggests that SWDs are part of the ongoing flow and dynamic of the classroom in terms of frequency of contacts and interaction with others. Table 6 summarizes these findings. Specifically, teachers initiate more contacts with SWDs than with NAs (2.08 contacts per class period versus 1.49 contacts per class period, respectively), and SWDs initiate slightly more contacts with the teacher than do NAs (2.66 contacts/class period versus 2.07 contacts/class period). Table 7 shows that while the NAs initiate slightly more contacts with their peers (4.05 contacts/class period versus 3.77 contacts/class period, respectively) and receive more initiations from them than do the SWDs (3.45 initiations/class period versus 2.77 initiations/class period, respectively), these data indicate that SWDs are very much a part of and not apart from nor isolated in the social and academic milieu of the classroom.

Table 6. *Mean number of contacts initiated by and toward target students*

	SWDs*	NA/AR**
Contacts with targets initiated by teacher	2.08	1.49
Contacts initiated by target with teacher	2.66	2.07

*Students with Disabilities
** Normal Achieving

Table 7. *Mean number of students initiating contacts*

	SWDs*	NA**
Students who initiated contacts with target	2.77	3.45
Students with whom target initiated contacts	3.77	4.05

*Students with Disabilities
** Normal Achieving

Table 8 shows the mean number of responses by students to in-class assignments. The mean number of in-class activities in classrooms of target SWDs and target NAs is approximately the same (2.14 activities/class period versus 2.25 activities/class period respectively). The majority of responses made by both SWDs and NAs to in-class activities was positive (1.48 versus 1.68), with fewer SWD responses than NA responses falling into the neutral category (.33 for SWDs and .58 for NAs) and the negative category (.12 for SWDs and .23 for NAs). None of the factors reported in Tables 6, 7, and 8 reached levels of significance.

Table 8. *Responses by students to in-class activities*

	SWDs*	NA**
No. of activities per class period	2.14	2.25
No. of positive responses to activity by target	1.48	1.68
No. of neutral responses to activity by target	.33	.58
No. of negative responses to activity by target	.12	.23

*Students with Disabilities
** Normal Achieving

Classroom teachers made some accommodations and provided individual attention to meet the needs of SWDs assigned to their classes. Specifically, accommodations and individual attention were observed being made in 14% of the targeted class periods. No special accommodations were observed being made for the NA students. In some settings (Rural School #2), accommodations were identified in 52% of the observed class periods. To put the nature of these accommodations in perspective, it is important to note that of the 285 class periods observed, only 22 contained instances of accommodations. The majority of these accommodations consisted of individual attention provided by the teacher (e.g., working with a student prior to class, or sending the student to the resource room for help). In only 5 instances were accommodations ones that required significant planning and adjustments by the teacher (e.g., making enlarged worksheets or making arrangements for the student to take the test outside of class).

Finally, homework was assigned in 37% of the classes attended by the NAs and 21% of the classes attended by SWDs. The largest discrepancy between the amount of homework given to NAs and SWDS was seen in the rural and suburban schools. Namely, SWDs received homework in only 15% of their classes in rural schools and 19% of their classes in suburban schools (compared to 29% in urban schools). In contrast, their NA counterparts were given homework in 40% of their rural school classes and 43% of their suburban classes.

Class Description Results

Closely related to the classroom observation results are the findings related to such factors as the overall atmosphere of the classroom, the quality of interactions

between the teachers and students, and the attitudes of the students toward learning during each class period. Regarding the teacher-created atmosphere within the classes observed, it was judged to be positive in 64% of the SWD classes and 63% of the NA classes. It was judged to be negative in 11% of the SWD classes and 8% of the NA classes. These findings did not vary significantly across school type (i.e., urban, rural, suburban). The attitude of students toward learning was rated as being positive in 55% of the SWD classes and 51% of the NA classes, with negative ratings being attributed to 8% of the SWD classes and 11% of the NA classes.

Overall, the rapport/relationship between teachers and the target students was rated to be positive for 45% of the SWD classes and 39% of NA classes and negative in only 3% of each of the SWD and NA classes. The lowest positive ratings were reported for the suburban schools (SWD = 37% and NA = 28%). Regarding relationships between target students and other students in the class, there was a marked difference between the two groups. For the SWDs, in only 40% of the classes were these students deemed to have positive relationships with their peers (in the suburban schools it was as low as 34%), whereas the NA students were judged to have positive relationships in 67% of their classes. The major descriptor used to depict the relationship between SWDs and their peers was "neutral."

The general outcomes of the observed classes were rated to be positive for 62% of the classes in which SWDs were enrolled and 74% of the classes in which NAs were enrolled. Negative outcomes were reported in twice as many of the SWD classes as in the classes in which NAs were enrolled (14% versus 7%). The least favorably rated outcomes occurred in the rural schools. The outcomes were rated to be positive for 53% of the classes in which SWDs were enrolled and 84% of the classes in which NAs were enrolled.

Finally, reports of disruptions/interruptions per class period revealed an interesting pattern. First, in about half of the classes for both target SWDs and NAs, no disruptions/interruptions per class period were observed (46% for SWD classes and 51% for NA classes). However, in 27% of the classes in which SWDs were enrolled and 28% of the classes in which NAs were enrolled, respectively, students were observed making 2-5 disruptions/interruptions per class period. In 11% of the classes in which SWDs were enrolled, target students were observed making in excess of 5 disruptions/interruptions per class period. The most disruptions occurred in the rural schools. In only 27% of the classes with SWDs and 36% of the NA classes in rural schools were no disruptions/ interruptions reported, whereas 45% of classes in which SWDs were enrolled and 40% of the classes in which NAs were enrolled were reported as having 2-5 disruptions/ interruptions per class period. In both the urban and suburban schools, 15% of the SWDs were observed making in excess of 5 disruptions/interruptions per class period.

Non-Class Observation Results

The general mood/disposition of 60% of the non-class times observed with SWDs (e.g., in hallway, lunchroom, etc.) and 74% of the non-class times observed with NAs was judged to be positive and in only small minority of cases (3%) was it judged to be negative. This finding held across all school types (urban, rural, suburban). The mean number of students with whom the target SWDs initiated contact

was 2.01 per non-class period compared to 2.99 for the NAs. The mean number of students who initiated contact with the target student per non-class period was 1.62 in the case of SWDs and nearly double that in the case of NAs (2.97). The number of contacts between target students and school staff during non-class observations was considerably lower than the number of contacts target students made with other students. The mean number of contacts with staff initiated by the SWDs was .23 per non-class period compared to .19 for the NAs whereas the mean number of contacts initiated by staff with students was .22 per non-class period for SWDs and .16 for NAs. No notable differences were observed across school types.

Qualitatively, the contacts observed between target students and others were overwhelmingly judged to be normal. For example, 75% of the contacts between SWDs and others were judged as normal compared to 85% for the NAs. Only 1% of the contacts were judged to be rejection-type responses for the SWDs and only 2% for the NAs. Likewise, 4% of the contacts were judged to be ones of aggression in the case of SWDs and 7% for NAs. No notable differences were observed across school types.

Finally, observations were made as to where the target students chose to walk, sit, or stand in relation to other students or staff during non-class times. SWDs were observed in the company of others during 76% of the non-class periods; NAs were observed in the company of others during 84% of the non-class times. SWDs were observed as being alone during three times as many of the non-class periods as NAs. Similar patterns were observed across all school types.

Discussion

The results of Study 1 show that only a very small handful of all SWDs are participating in rigorous general education classes in the participating high schools. The vast majority of SWDs are placed in subject-area classes taught by special education teachers (Type A Classes) or general education classes that contain only low-achieving students (Type B Classes). There are several concerns related to this finding. First, this placement pattern is clearly at variance with the spirit and intent of IDEA in which SWDs are expected to be placed in instructional arrangements that afford them authentic access to the general education curriculum. Any placement other than attending heterogeneous classes taught by a fully certified (in the appropriate content area) general education teacher is less than ideal. Second, when SWDs are placed in classes that contain only at-risk and other low-achieving students, the level of expectations is generally lower, and the amount of content covered is less than what is typically taught in rigorous classes (Bartholomay, Wallace, & Mason, 2001). Third, typically, special education teachers are not certified to teach content-area subjects; hence, SWDs in these classes receive lower quality educations (Skrtic & Brownell, 2002). Finally, in light of the clear trend and expectation for all students to meet standards-based outcome standards, the current trend of not including SWDs in rigorous general education classes is setting these students up for almost sure failure.

The finding that general education teachers estimated that nearly twice as many students in their classes were students with disabilities is troubling because it suggests these teachers may not be meaningfully involved in the entire IEP process. If they were, they would know which students were classified as needing special education services and which students were not. This is consistent with other findings

that suggest that adolescents with disabilities in high school settings are often disconnected from their teachers and often "unknown" by them (e.g., Adams, Lenz, Laraux, Graner, & Pouliot, 2002).

The demographic data collected in this study clearly support an existing trend that has existed in the field of special education for decades, namely that students from minority backgrounds and those who are poor are disproportionately classified as having a disability (Artiles & Trent, 1994; Artiles & Zamora-Duran, 1997). This is cause for concern because of the fact that factors other than learning dysfunction may be at the root of the decision-making process that leads to these classification outcomes.

The fact that SWDs have significantly lower GPAs than their NA/AR counterparts, even though the vast majority of these NA/AR students are in low-track classes or classes taught by special education teachers may account, in part, for the fact that there is such a high drop-out rate among the SWD students. That is, such course placements are often deemed to be boring and unchallenging by students (Lipsky & Gartner, 1997) and when they receive poor grades in these courses, their feelings of hopelessness might increase while the perceived value of the educational experience they are receiving might decrease. The cumulative effects of these factors may lead students to leave school for what they believe will be a more attractive alternative. The dismal performance of SWDs on national achievement exams and statewide assessments is a very troubling trend. Increasingly, performance on such exams is being used as a benchmark for exiting a system or gaining access to future educational or job opportunities.

Of particular note, was the very low performance of the SWDs on the reading and math subtests of the MAST (in the 1^{st}-3^{rd} percentile range). These data are at variance with the results of a similar study conducted by Warner, Schumaker, Alley, and Deshler (1980) in which they reported that the achievement level of SWDs was in the 10^{th}-12^{th} percentile. The difference in the performance of the students in the two studies may be due to the fact that Warner, et al. (1980) used an individual achievement measure (the Woodcock-Johnson Psychoeducational Battery) whereas the MAST is a group-administered test. For students with disabilities, their performance may be enhanced under the more favorable conditions of individual test administration (i.e., the examiner ensures that students are focused and attending before reading each item; whereas, under group administration conditions, students must monitor their own behavior). Secondly, the norms on the MAST at the lower end of the scale may not be sufficiently sensitive to slight differences in student performance.

Finally, the data reported in this investigation clearly support several of the key findings from the landmark National Longitudinal Transition Study (Wagner, Blackorby, & Hebbeler, 1993). Namely, there is a higher proportion of students from minority and poverty backgrounds in special education, many SWDs took non-academic core courses (such as vocational training), and most SWDs had records of poor academic performance. There is one point of difference between the two investigations. While the NLTS reported that SWDs spend the majority of time in "regular class settings," they did not differentiate the types of regular class placements as was done in this study. The fact that this study found that SWDs are mainly enrolled in Type A and Type B courses is a concern in light of the expectations on students in

today's world to perform well on state outcome assessments. Placement in Type A and Type B "regular classes" will, in all probability, not prepare SWDs to be successful on those assessments.

The results of Study 2 show that understanding the broader context within which SWDs function can be helpful in painting a more complete profile of what constitutes their experiences in high-school settings. Much of the professional literature has portrayed SWDs as being isolated and on the fringes of the social fabric of school settings (e.g., Forgan & Vaughn, 2000; Gresham, 2002; Kolb & Hanley-Maxwell, 2003; Wong, 2002). Much of the data that emerged from this investigation suggest that SWDs are often more like than different from their NA peers relative to their interactions with teachers and peers. However, their relationships and interactions with teachers appear to be more positive than their relationships with peers, although the latter relationships are not totally negative. Specifically, the majority of SWDs sat near the front of the classroom rather than retreating to the back or fringes of the classroom, and numbers of initiations for SWDs to and from their teachers were very comparable to what their NA peers experienced. The rapport/relationships between teachers and SWDs was rated more positively than the rapport/relationships between teachers and NAs. These data are somewhat at variance with many of the commonly held notions of the social interactions of students with disabilities (e.g., Pearl & Bryan, 1994; Rothman & Cosden, 1995; Sabornie, 1994). This is an interesting finding in light of the fact that SWDs engaged in considerably more disruptions/interruptions than did their NA counterparts.

Relative to relationships with peers, SWDs showed several signs of being, at least partially, a part of the school's social fabric. For example, SWDs initiated contact with peers, but about two-thirds as frequently as the NA group, and nearly twice as many peers initiated contact with the NA students as with the SWDs. While the large majority of interactions between SWDs and peers were judged to be normal and where they choose to stand, sit, and interact was similar to the NAs, SWDs were observed to be alone three times as much as their counterparts, but their solitude was infrequent (9% of the time). Again, these findings are at variance with depictions of at-risk youth (including those with disabilities presented in the literature (e.g., Galanaki & Kalantzi-Azizi,1999).

On the other hand, these data require further analysis and follow-up study. Specifically, if one were to assume that students attend seven class periods per day and have nine passing periods between classes and the times prior to and immediately following school and lunch, the total number of interactions during the course of a school day would be approximately 106 for the NAs and 78 for the SWDs (i.e., taking the total number of interactions that were initiated by or toward the target student during one class session and one non-class segment and multiplying that figure by seven class periods and nine non-class time periods, respectively, the total number of daily interactions could be estimated). Assuming that these estimates are accurate, these data imply that SWDs engage in only three-fourths as many interactions as do their NA counterparts. To be determined is the degree to which this difference, indeed, influences the quality of life of SWDs.

There are some areas for concern that are reflected in these data. The SWDs took nearly twice as long to become engaged in their work in class than their NA peers,

and the number of homework assignments given to SWDs was nearly half the number given to the NA students. This is a disturbing finding because during the high school years, one of the primary avenues for students getting practice on concepts being taught is through homework. The substantially lower levels of homework assignments may be due to a couple of factors. First, many SWDs are placed in lower level classes (that is, ones that contain only low-achieving students or are taught by a special education teacher), and thus most work is done within the classroom under the supervision of the teacher. Second, the fewer homework assignments may simply reflect a much lower set of expectations for SWDs. The long-term implications of this for overall achievement for SWDs, including their ability to perform well on state and national outcome assessments, must be carefully examined.

The amount of accommodations observed being made by general education teachers on behalf of SWDs (14% of the class periods observed) appears to be low given the complexity of the content taught in rigorous high school classes (e.g., Schumaker & Deshler, 1988; Schumaker, Deshler, Vernon, & Bui, 2001), the significant deficits evidenced by adolescents with disabilities (e.g., Deshler, Grossen, Marquis, Schumaker, Bulgren, Lenz, & Davis, 2002), and the expectations of IDEA to create circumstances that enable authentic access for SWDs to rigorous courses. In order to put students in a position to not only get passing grades but to master critical concepts and skills, the amount of accommodations made by general education teachers will probably need to increase.

Overall, the findings of this study underscore the importance of researchers understanding the contextual realities within which SWDs function in high-school settings. In order to design interventions that will result in significant outcomes for students, they must account for and address the realities of the settings within which students are expected to learn. The complex realities of adolescence as a developmental period and of high schools as social organizations require that researchers attend to the influence and role of these factors.

Finally, the results of Study 2 may have been influenced by the students who were designated as NAs. While the intention of the researchers was to select NAs who would be matched with SWDs who were placed in rigorous general education classes, we indeed, found hardly any SWDs in such classes. Rather, the large majority of SWDs were placed in "general education classes" that were either taught by a special education teacher (hence, most of the students were classified as having a disability and in some instances included other low-achieving students) or the classes were low-track classes that included only students who were low achievers. Attempts to match students by selecting them from the same classes may have resulted in several of students being called NAs, while they were, in truth, more like at-risk students. If, indeed, this is the case, the reported differences in this study may have been greater had the comparison group been made up entirely of NA students who were enrolled in rigorous general education classes.

Donald D. Deshler, Ph. D. *is the Director of the University of Kansas Center for Research on Learning. His research focus is academic interventions for adolescents at-risk for academic failure.* ***B. Keith Lenz, Ph. D****. is a Senior Scientist at the University of Kansas Center for Research on Learning. His research focus is teacher planning and secondary school reform.* ***Janis Bulgren, Ph. D.*** *is the Senior Scientist at the University of Kansas Center for Research on Learning. Her research focus is academic instruction in*

core curriculum areas. ***Jean B. Schumaker, Ph. D.*** *is the Associate Director at the University of Kansas Center for Research on Learning. Her research focus is social and academic interventions for adolescents at-risk for academic failure.* ***Betsy Davis, Ph. D.*** *is the Senior Scientist at the University of Oregon. Research focus: Benchmark assessment models and interventions for at-risk youth* ***Bonnie Grossen, Ph. D.*** *is the Senior Scientist at the University of Oregon. Her research focus is instructional material design for at-risk adolescents.* ***Janet Marquis, Ph. D.*** *is the Director of the Research and Design Unit at the University of Kansas. Her research focus is statistical models (including latent variable and general linear) for educational research.*

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