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A NATIONAL PROFILE OF THE CLASSROOM EXPERIENCES AND ACADEMIC PERFORMANCE OF STUDENTS WITH LEARNING DISABLITIES:

A Special Topic Report from the Special Education Elementary Longitudinal Study

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A National Profile of the Classroom Experiences and Academic Performance of Students with Learning Disabilities

In 1977, the term "learning disability" (LD) was included as a category of exceptionality in the Education for All Handicapped Children Act (P.L. 94-142), now called the Individuals with Disabilities Education Act (IDEA). Since that time, the LD category has remained in federal legislation, and the percentage of students with LD has increased steadily. Students with LD now account for 7% of the student population and for more than 50% of students with disabilities (Bradley, Danielson, & Hallahan, 2002; U.S. Department of Education, 2002). Thus, LD is the largest of the disability categories defined in IDEA. Despite the size of the population of students with LD, relatively little is known at the national level about the ways in which special education policy has shaped their educational services.

Underlying IDEA is the principle that students should receive their education in the least restrictive environment (LRE). The law requires "that to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are nondisabled" [20 U.S.C. 1412(1)(5)]. Policy about the best settings for students receiving special education services is complex, and questions concerning that policy are not easily answered. According to Kavale and Forness (2000),

> *"the studies of special education placement included a number of service delivery options and, because no service arrangement proved more effective, it appears that outcome differences were related to indeterminate and imperceptible variables not easily assessed or controlled."* (p. 306).

Thus, the issue is not whether special education or general education classes are "better" or whether a placement equals a treatment, but where the individual needs of the students are best met (Haynes & Jenkins, 1986; Kavale & Forness, 2000). The most pertinent questions, therefore, need to focus on the curricula, instruction, and accommodations that are provided in classrooms (Fuchs, Fuchs, Graham, Harris, Williams, & Oxall, 2005; Vaughn & Fuchs, 2003).

The more recent reauthorizations of IDEA (1997 and 2004) and the No Child Left Behind Act (NCLB, 2002) have focused public attention on improving the outcomes of students with disabilities by setting higher expectations for them and by supporting them in accessing the general education curriculum. For most students with LD, participation in the general education curriculum means having access to academic content, as specified in state content standards (Schiller, O'Reilly, & Fiore, 2006); being assessed according to general education

academic performance standards (Nagle, 2005; O'Reilly & Schiller, 2005); and being provided the supports necessary to allow them to benefit from instruction (Baker, Gersten, & Lee, 2002; Nolet & McLaughlin, 2000; Swanson, Harris, & Graham, 2003).

Specifying standards is necessary for setting higher expectations, but is not in itself sufficient to achieve the desired result. Districts and schools make choices about how to support students with LD to meet the state standards. Specifically, an individualized education program (IEP) plan is written by a team of education professionals for each student (Bateman & Linden, 2006). For each IEP, the team must identify goals that reflect state standards and student needs, indicate whether and how to modify the curriculum in accordance with the goals, and describe how instruction is to be delivered to achieve them. The IEP team also identifies accommodations and supports that assist the student to become proficient in the subject matter. Within this set of choices, the team also decides which types of classroom settings best meet the student's individual needs, consistent with the provisions of LRE. Thus, students' school and classroom experiences frame an understanding of the implementation of special education policy.

To date, national information on the school and classroom experiences of students with LD has been limited.[1] As a national study, the Special Education Elementary Longitudinal Study (SEELS) has collected information that can contribute to closing some of the gaps in the existing knowledge base. In particular, SEELS describes the educational experiences of students with LD in both special education and general education language arts classroom settings. These findings will assist policymakers to understand how the individual needs of students with LD are currently being met nationally, as well as how students with LD perform nationally on academic assessments over time.

About this Report

This SEELS special topic report provides a national portrait of school-age children and young adolescents whose school districts have identified as having an LD as a primary disability and who are receiving special education. This report highlights school and classroom experiences, student characteristics, and academic outcomes. More specifically, the report addresses the following questions:

1. To what extent do students with LD receive instruction in general education and in special education settings, both overall and for language arts in particular?

[1] For reports on the school and classroom experiences of elementary and middle school students with disabilities, see SEELS reports at www.seels.net, and for reports on secondary school students with disabilities, see National Longitudinal Transition Study-2 reports at www.nlts2.org.

2. What are the students characteristics and school and classroom experiences of students with LD who receive their primary language arts instruction in general education or special education settings?
3. How does the level of academic performance of students with LD who receive instruction in general education language arts classes compare with that of peers in special education settings?
4. How has the overall level of academic performance of students with learning disabilities changed over time?

The report's sections are organized around these questions.

Data in this report come from SEELS, which is funded by the Office of Special Education Programs, U.S. Department of Education. The study has collected information for a nationally representative sample of more than 11,000 students with disabilities who were ages 6 through 12 when the study began. Over the course of three waves of data collection (2000-2001, 2002, and 2004), SEELS collected longitudinal information from parents, teachers, and students on a range of student characteristics, experiences, services, and outcomes. Thus, SEELS provides extensive nationally representative information on students with disabilities as a whole as well as for each of the 12 federally defined disability categories[2], including LD.[3]

Specifically, the results presented in this report come from the SEELS Wave 3 parent interview, language arts teacher questionnaire, school program questionnaire, and student direct assessment.[4] Students were ages 10 through 17 at the time. The reported data are population estimates from data weighted to represent students classified as having LD nationally.

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[2] SEELS did not include "developmental delay" as a category because of its age restriction and because it was not used by all states. SEELS reclassified students who were classified by their district as having "developmental delay" into one of the other 12 disability categories, on the basis of information obtained during the SEELS Wave 1 parent interview.

[3] Data come from the SEELS parent interview, language arts teacher questionnaire, school program questionnaire, and student direct assessment. Appendix A presents the sample size and standard errors associated with each statistical estimate presented in this report. Differences noted in this report represent findings that were statistically significant at the ($p < .05$) level or less.

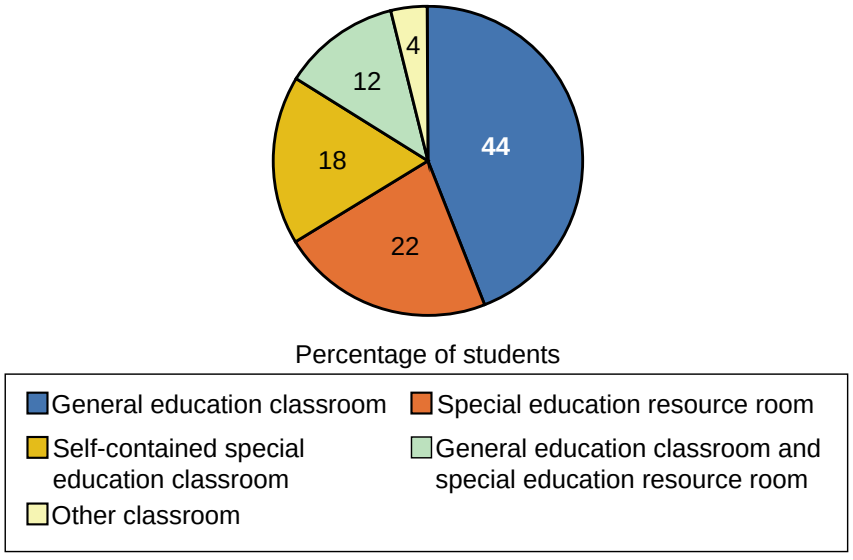
[4] Wave 1 of SEELS data collection included: (1) parent interviews in summer when students were ages 6 through 13; and (2) school surveys, and direct assessments of SEELS students' reading and mathematics achievements in spring 2001 when they were ages 7 through 14 and in first through ninth grades or in ungraded programs. In the spring of 2004 (Wave 3), when students were ages 10 through 17, SEELS data collection repeated the (1) parent interviews; (2) school staff survey; and (3) student direct assessments and in-person interviews for a third time.

The Instructional Settings of Students with Learning Disabilities

SEELS data provide a description of a range of individual and school characteristics of students with LD, including the age at which students first were reported to have a disability or learning problem, the proportion of time spent in general education settings, and the size of their classes. The educational programs provided to students identified with LD as their primary disability for special education purposes are not homogeneous.

- With regard to setting for their primary language arts instruction (Exhibit 1), teachers reported that 44% of students with LD are in general education classrooms, 40% are in either a special education resource room or self-contained setting, and 4% are in another setting (e.g., home instruction).
- Among the 52% of students with LD who receive language arts instruction in special education classrooms, 22% do so in resource rooms, 18% in self-contained classrooms, and 12% in a combination of general education and special education resource rooms.

Exhibit 1
Language Arts Settings for Students with Learning Disabilities

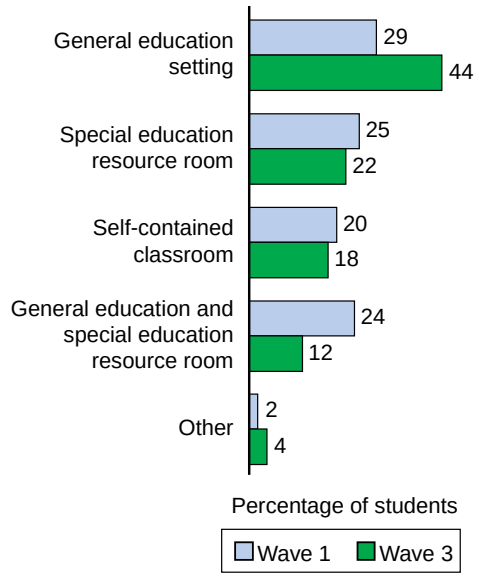


Source: SEELS Wave 3 teacher questionnaire.

This distribution of students with LD across instruction settings constitutes an increase in general education participation since Wave 1 (Exhibit 2). As students progressed through the K-12 education system, the proportion of students with LD whose primary language arts instruction was in a general

education setting increased from 29% to 44% over the 3-year period. Also during that time, the proportion of students with LD who had language arts instruction in both general and special education classes dropped by half, from 24% to 12%.

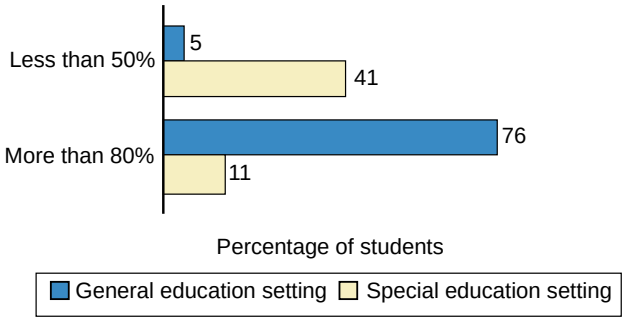
Exhibit 2
Classroom Setting for Language Arts Instruction in Waves 1 and 3



Sources: SEELS Wave 1 and Wave 3 teacher questionnaire.

Although students with LD may receive primary language arts instruction in general or special education settings, students may spend significant portions of their day in other settings for different subjects. To estimate the total proportion of classes taken in general education classrooms, teachers were asked to identify the settings in which students with LD receive instruction for language arts, mathematics, science, social studies, art or music, physical education, life skills, study skills, vocational education, social skills, and other courses. The responses were collapsed into an indicator of the total percentage of classes spent in general education classrooms. Although there is a range in the proportion of the school day students spend in general education, a student's language arts setting is closely aligned with his or her total inclusion in general education classes overall (Exhibit 3).

Exhibit 3
Percent of Classes in General Education for Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 school program questionnaire.

- Students with LD who receive language arts instruction in general education classrooms also are very likely to spend the large majority of the school day in those classrooms. About three-fourths (76%) of students with LD take more than 80% of their classes in general education; about one-tenth of students whose primary language arts instruction is in special education classrooms take more than 80% of their classes in general education settings.
- Although to a lesser extent, the reverse also is evident. Among students who receive their primary language arts in self-contained or resource room settings, 41% take fewer than half of their classes in general education. In contrast, only 5% of those who receive language arts in general education classrooms spend less than half their day in such a setting.

Classroom Composition and Experiences of Students with Learning Disabilities in General Education or Special Education Settings for Language Arts Instruction

This section describes important differences in the experiences of students with learning disabilities who are in different settings for language arts instruction, including differences in the characteristics of students with LD in the two settings and differences in classroom context and experiences, including class size, extent of curriculum modification, instructional groupings, classroom activities, and accommodations and learning supports provided to students with learning disabilities.

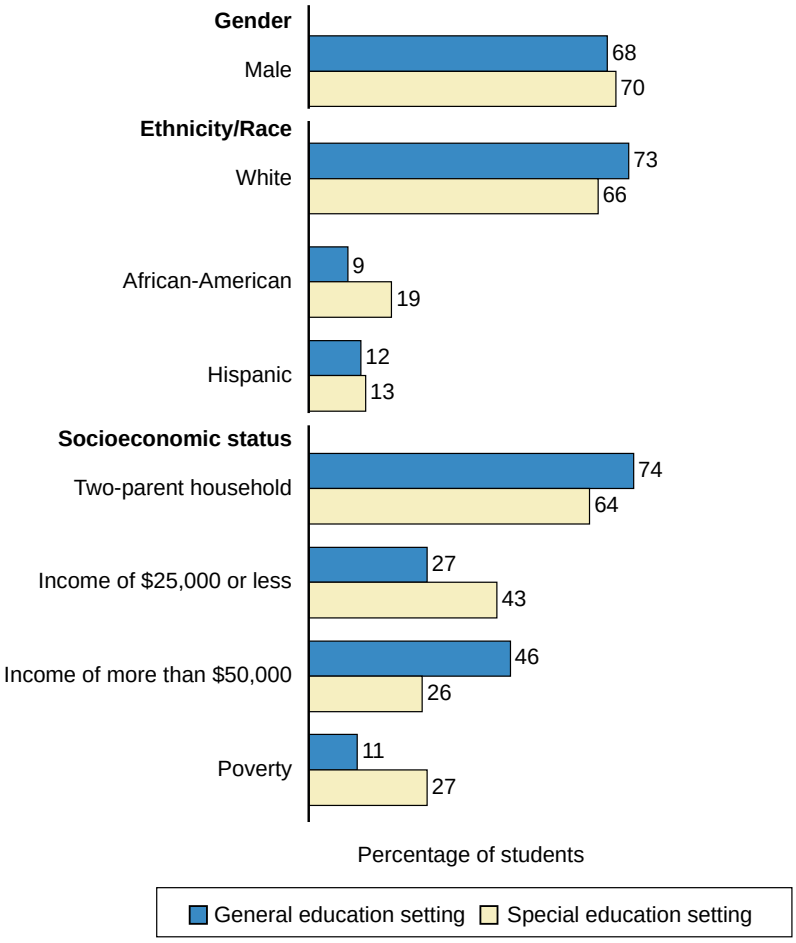
Student Characteristics

Demographics

The demographic characteristics of students with LD vary modestly with whether they receive their primary language arts instruction in general education and or special education settings (Exhibit 4).

- Students in the two types of classroom settings share a number of characteristics. For example, the majority of students with LD in both settings are white (73% in general education and 66% in special education), and although relatively few in number, similar proportions of students with LD in each setting are Hispanic (12% and 13%). Additionally, approximately equal proportions of students with LD live in two-parent households.
- In contrast, African-American students with LD are a larger proportion of students in special education language arts classrooms (19%) than in general education settings (9%).

Exhibit 4
Selected Demographic Characteristics of Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 parent interview.

- Students with LD living in households with annual incomes of $25,000 or less or who are in poverty are a larger proportion of students in special education settings (43% and 27%, respectively) than in general education settings (27% and 11%, respectively).

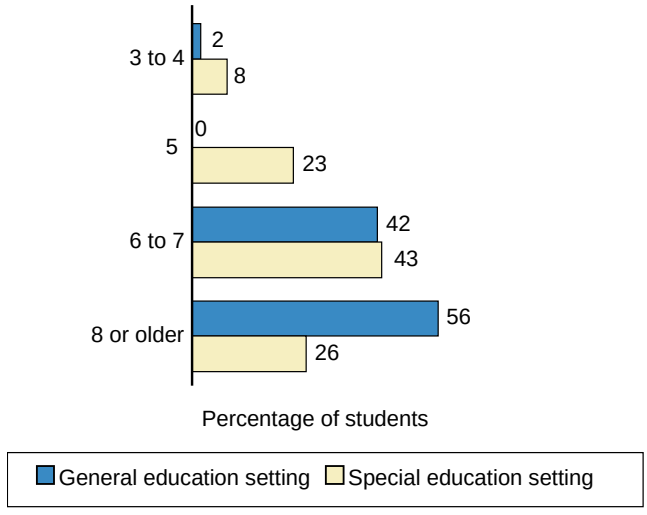
Initial Service for a Disability

Some children and their families have been dealing with the implications of a disability and the related service systems since birth or early childhood, and others have a disability identified and/or first addressed through services only in response to the learning challenges of school. Exhibit 5 presents parental reports of the age at which their children first began receiving special education services.

- More students who receive language arts instruction in special education settings had begun receiving services by age 5 (31%) than had their peers who in general education settings (2%), indicating they had participated in preschool special education or began receiving services virtually upon school entry at age 5.

- More than half of all students with LD instructed in general education settings for language arts first received special education services at age 8 or older, compared with one-quarter of students who were in special education settings for that subject.

Exhibit 5
Age When Students with Learning Disabilities First Received Special Education Services, by Language Arts Setting



Source: SEELS Wave 3 parent interview.

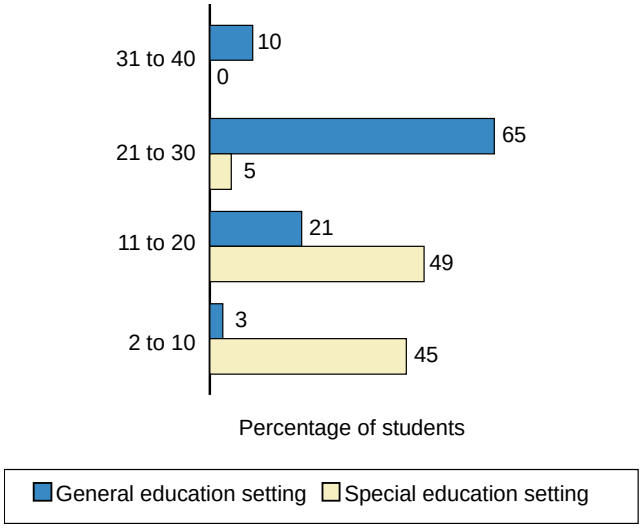
Note: No parents reported services received by children with LD at age 2 or younger. Therefore, this range is not included in the exhibit.

Classroom Context: Class Size

Class size, as measured by the number of students in attendance, has been linked to academic achievement among general education students (Elbaum, Vaughn, Hughes, Moody, & Schumm, 2000). Smaller classes are considered to be more conducive to learning in part because they provide more time for teachers to focus on individual student needs. Not surprisingly, the language arts classes attended by students with LD in general education settings are substantially larger than are special education classes (Exhibit 5).

- Sixty-five percent of students with LD who have their primary language arts instruction in general education classes are in classes that include from 21 to 30 students, whereas only 5% of their peers who are enrolled in special education language arts classes are in classes that are as large.
- Conversely, 45% of students with LD enrolled in special education settings for language arts instruction are in classes with 2 to 10 students per class. Only 3% of students with LD in general education settings are in such small classes.

Exhibit 6
Class Size During Language Arts Instruction for Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 teacher questionnaire.

Note: Percentages do not total to 100 due to rounding.

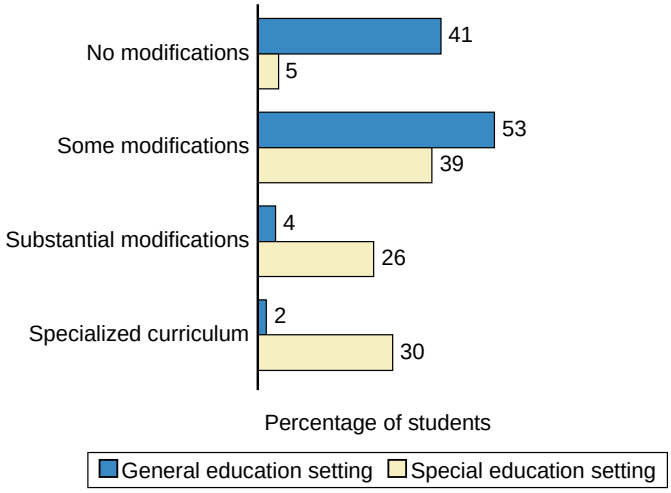
Classroom Curriculum and Instructional Groupings

Curriculum

Many students with disabilities require some alteration of curricula, materials, or methods in order to be successful. Teachers were asked about the extent of their modifications to the curriculum for students with LD from the following four categories: no modifications, some modifications, substantial modifications, and a specialized curriculum (Exhibit 7). For each level of curricular modification, significant differences were found for students with LD by language arts setting, with the two distributions nearly mirror images of one another.

- About 40% of students with LD in general education settings receive no modifications to their curricula, compared with 5% of their peers in special education settings.
- Thirty percent of students with LD in special education settings receive specialized curricula, compared with only 2% of students in general education settings.

Exhibit 7
Modification of Language Arts Curricula for Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 teacher questionnaire.

Instructional Groupings

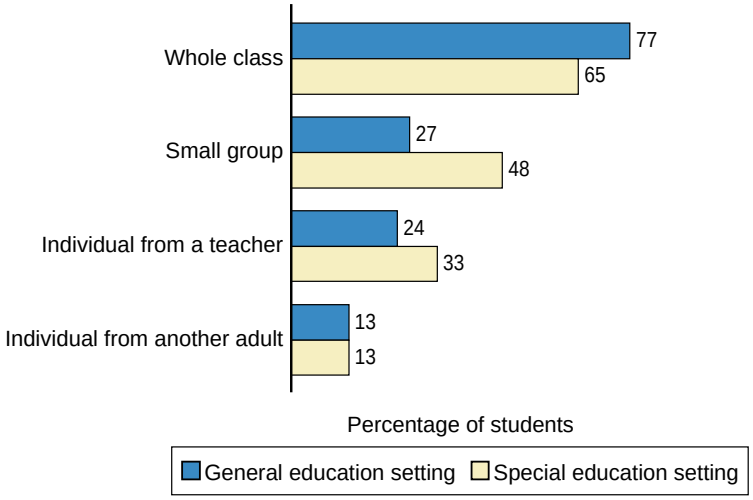
Varying the size of the instructional group is common in many interventions to provide targeted instruction to groups of students and to facilitate peer-mediated instruction. Of course, many students, regardless of disability and language arts setting, receive some mix of whole class, small group, and individualized instruction during the instructional day. However, the relative mix of instructional groups may be varied to accommodate student needs.

- In both general and special education settings, the most commonly used instructional grouping for students with LD is whole-class instruction,

although students in general education settings are more likely to experience whole-class instruction often than are peers in special education classes (77% vs. 65%) (Exhibit 8).

- In contrast, teachers reported that 48% of students with LD in special education settings "often" receive instruction in small groups, compared with 27% of their peers in general education settings.

Exhibit 8
Instructional Groupings for Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 teacher questionnaire.
Note: Percentages in this exhibit exceed 100 because students receive language arts instruction in a variety of ways.

Participation in Language Arts Activities

To measure of student participation in classroom activities, SEELS asked teachers to report on the frequency that students participate in a range of general instructional activities, as well as in those activities more closely associated with language arts and reading content.

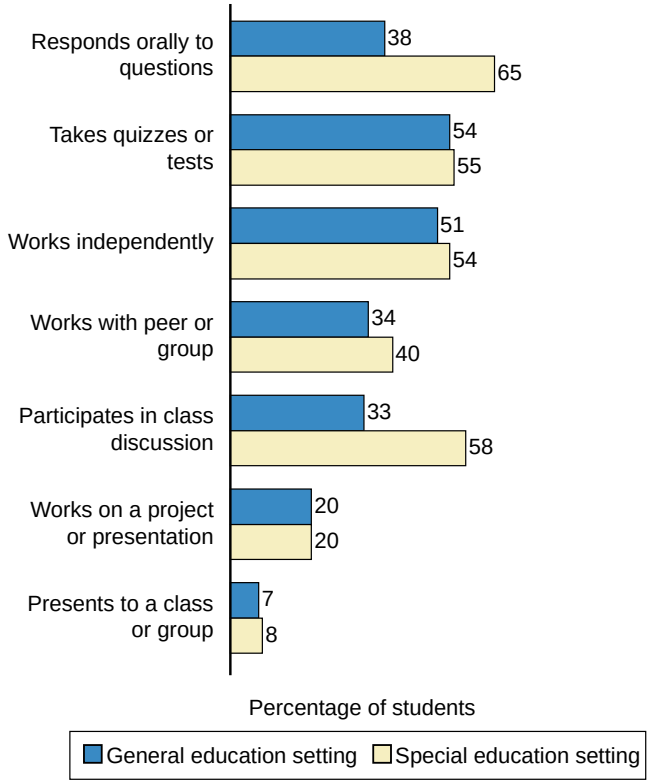
General Instructional Activities

For most measures of classroom activities, students with LD in the two settings demonstrate comparable levels of participation (Exhibit 9).

- Comparable proportions of students with LD take quizzes or tests, work independently, work with a group or peer, and work on a project or presentation in both classroom settings.

- Students with LD in special education settings are more likely to respond orally to questions and participate in class discussions than students in general education settings (65% vs. 38% and 58% vs. 33%, respectively).

Exhibit 9
Participation in General Instructional Activities for Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 teacher questionnaire.

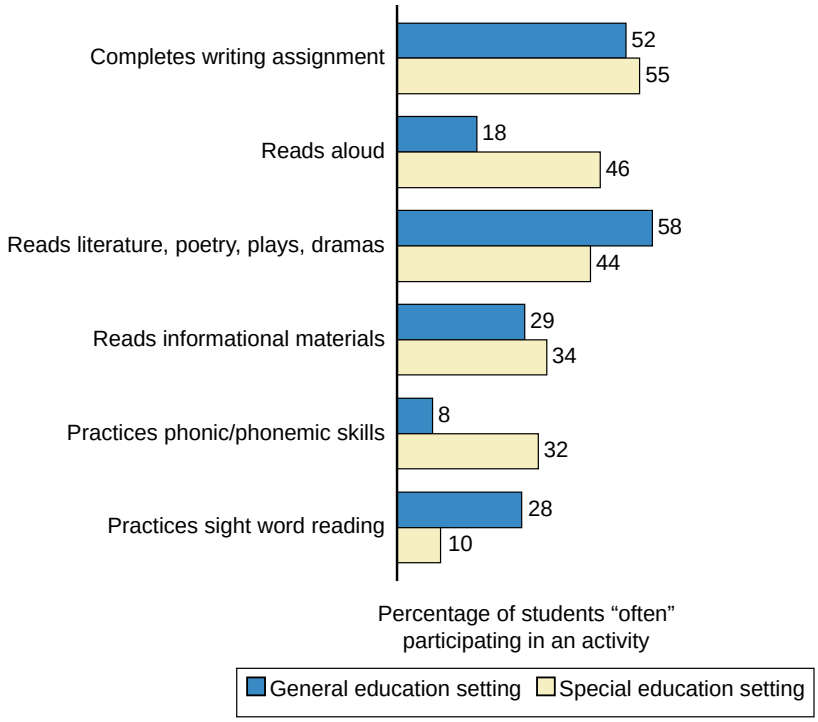
Note: Percentages in this exhibit exceed 100 because students participate in language arts instruction in a variety of ways.

Reading Activities

Teachers reported that comparable numbers of students with LD participate "often" in completing assignments and reading informational materials. However, there are differences between students in the two settings for several of the other reading activities (Exhibit 10).

- Students with LD in special education language arts classes are more likely to read aloud frequently (46%), and practice phonic/phonemic skills (32%) than are students in general education settings (18% and 8%, respectively).
- Students with LD in general education settings are more likely "often" to participate in reading literature, poetry, plays and dramas (58%) and in reading words at sight (28%) than are their counterparts in special education settings (44% and 10%, respectively).

Exhibit 10
Participation in Reading Activities for Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 teacher questionnaire.

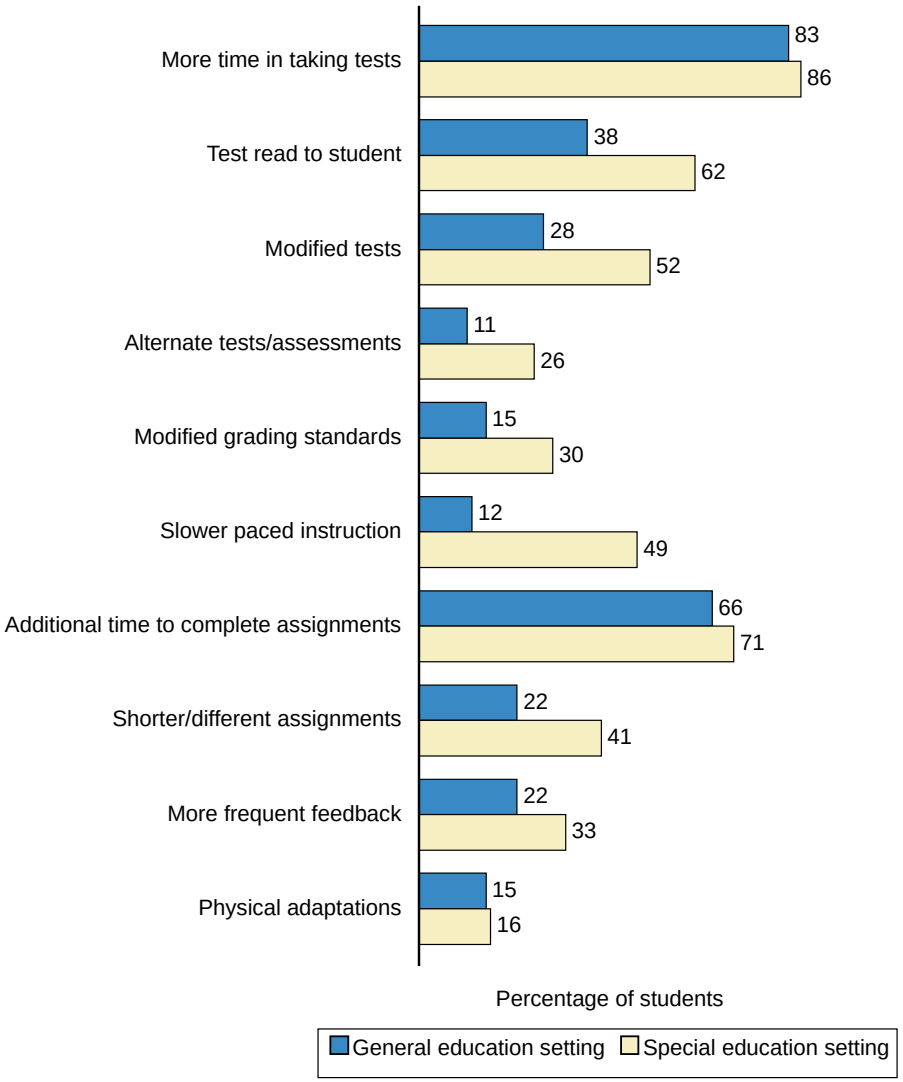
Classroom Accommodations and Supports

Over the past decade, there has been increased policy and instructional attention to the provision accommodations and supports provided to students with disabilities in day-to-day instruction, as well as in assessment. Such accommodations and supports are generally identified through the IEP process. SEELS asked teachers to identify which accommodations and supports are provided to individual students.

Classroom Accommodations

Exhibit 11 shows that accommodations play a significant role in the education of students with LD.

Exhibit 11
Classroom Accommodations for Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 school program questionnaire. Note: Percentages in this exhibit exceed 100 because students may receive multiple classroom accommodations in language arts instruction.

- In both settings, approximately six out of seven students with LD receive more time for taking tests and about two-thirds are given additional time to complete assignments. Few students with LD have physical adaptations as a classroom accommodation, regardless of setting.
- Many other accommodations are provided more often to students with LD in a special education setting than in a general education setting. For example, students with LD receiving language arts instruction in special education classrooms are more likely to have tests read to them (62%) than their peers in general education classrooms (38%), and to have shorter assignments (41% and 22%, respectively). More than half of students with LD receiving

language arts instruction in special education settings take modified tests, compared with fewer than one-third of their peers in general education classrooms.

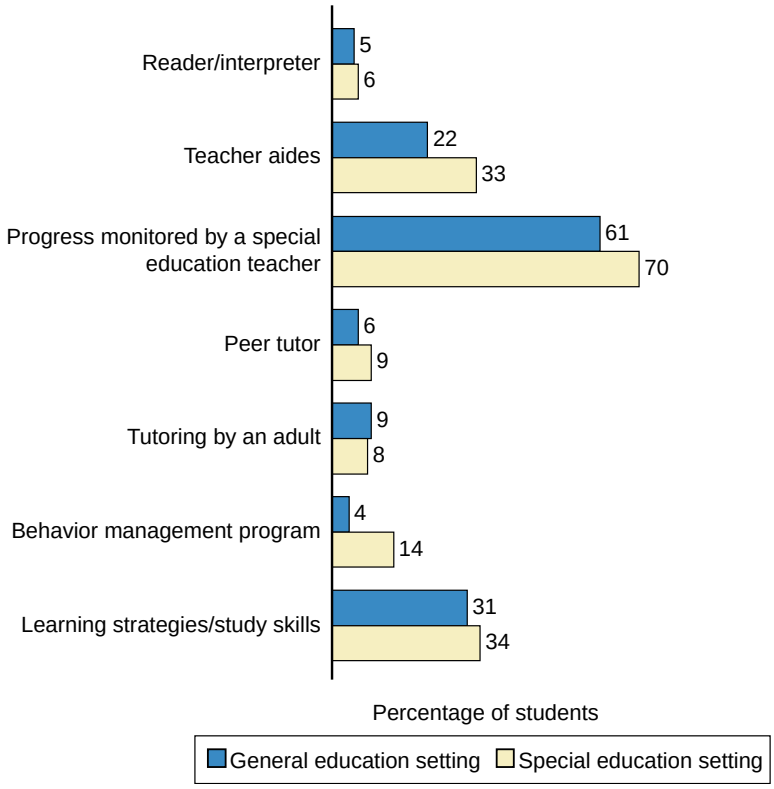
- About 1 in 4 students with LD receiving language arts instruction in special education classrooms take alternate tests, compared with 1 in 10 of their peers in general education classrooms.
- Students with LD are more likely to have their performance judged according to modified grading standards when receiving language arts instruction in special education classrooms (30%) than are their peers in general education classrooms (15%).
- Students with LD are more likely to receive slower paced instruction and shorter or different assignments in special education settings (49% and 41%, respectively) than are their peers in general education settings (12% and 22%, respectively).

Classroom Supports

Teachers report using some classroom supports more than others (Exhibit 12).

- In both settings, many students with learning disabilities have teachers who report monitoring the students' progress frequently (70% of students in a special education setting and 61% of those in a general education setting). Alternatively, few students have teachers who provide a reader/interpreter or a peer or adult tutor as a classroom support for students with LD.
- In both settings, about one-third of students with LD receive learning strategies or study skills instruction.
- One-third of students with LD receiving instruction in special education settings are assigned teacher aides, compared with fewer than one-quarter of their peers in general education settings.
- Although the percentage is low, students with LD in special education settings are more likely to be part of a behavior management program (14%) than those in general education settings (4%).

Exhibit 12
Classroom Supports for Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 school program questionnaire.

Note: Percentages in this exhibit exceed 100 because students may receive multiple classroom supports in language arts instruction.

The Academic Performance of Students with Learning Disabilities

Not only do students with LD who receive instruction in different settings differ in their own characteristics and in the composition of and experiences in their classrooms, they achieve quite different outcomes in the domains of school engagement and academic performance.

School Engagement

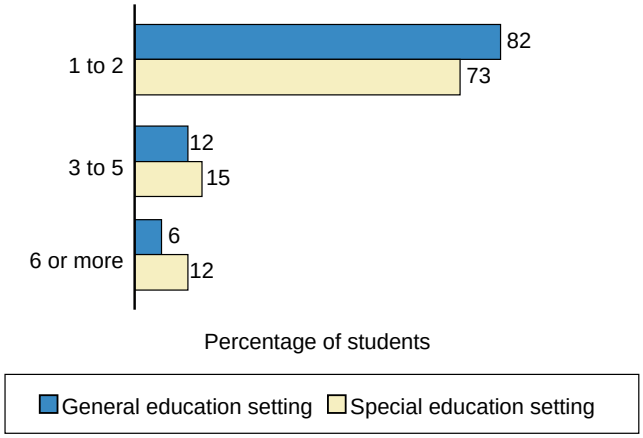
Student's academic achievement can be conditioned on differences in school engagement factors, such as absenteeism and persistence in student learning tasks. Whether due to health problems or truancy, frequent absences from school can be problematic for students in that they miss crucial instruction and in may struggle to keeping up with completing assignments. At the high school level, high levels of absenteeism also correlate with school dropout (Wagner, 1991).

- According to their parents, the majority of students with LD, regardless of setting, missed 1 or 2 days of school in the target month (82% of students in

general education classes vs. 73% in special education settings; Exhibit 13). Few students with LD missed 6 or more days in the target month, although there were differences by setting.

- Twice as many students with LD in special education settings for language arts instruction missed 6 or more days of school in the target month than those in general education settings (12% vs. 6%).

Exhibit 13
Number of Days of School Missed in a Month for Students with Learning Disabilities, by Language Arts Setting



Source: SEELS Wave 3 school program questionnaire.

Academic Performance

To measure academic performance, SEELS conducted face-to-face direct student assessments. Three academic outcome measures of students with LD in special education or general education settings for their language arts instruction are reported below—oral fluency rates and scores on standardized tests of passage comprehension and mathematics calculation.

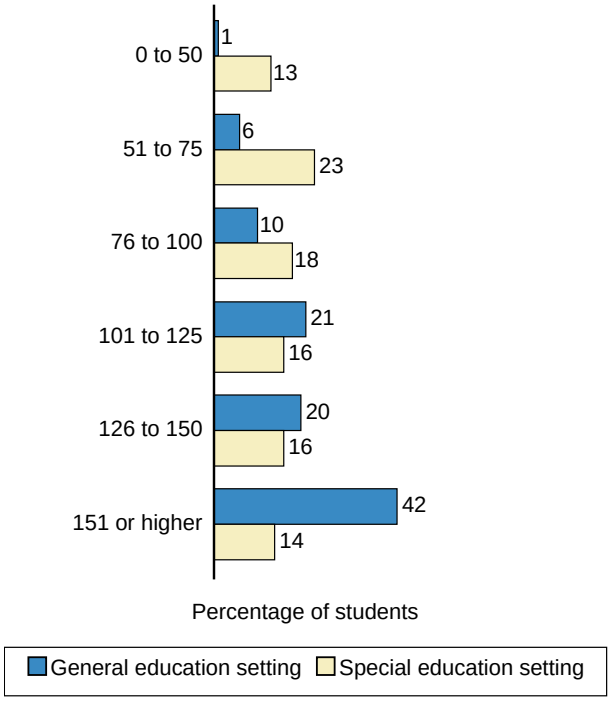
Oral reading fluency. Reading fluency has been identified as a key component of acquiring a developing competency in reading (Fuchs, Fuchs, Hosp, & Jenkins, 2001; National Reading Panel, 2000). In SEELS, oral reading fluency rates were measured by the number of words per minute (WPM) students read correctly a fourth-grade passage.

In general, students with LD receiving language arts in general education settings read at faster than their peers in special education settings (Exhibit 14). Fewer students in general education settings read at the low end of the fluency range (1% vs. 13% reading 50 WPM or fewer) and more read at the high end (42% vs. 14% reading 151 WPM or more), although the reading fluency rates for students with LD in the two settings are comparable for those reading between 101 and 125 WPM and between 126 and 150 WPM.

The typical oral fluency rate of a nondisabled second grader is about 101 WPM at the beginning of second grade (Hasbrouck & Tindal, 1992), and the majority of students with LD read at a rate of at least 101 WPM. Students with LD in general education who read about 150 WPM read at a rate typical of most fourth graders at the beginning of that grade (Hasbrouck & Tindal, 1992). However, virtually all students with LD were in at least the fifth grade, and more than one-third were in high school at the time of the Wave 3 assessment, underscoring the significant limitations in reading ability of students with LD.

Passage comprehension. Deriving meaning from text is the ultimate goal of the reading process for students at any age, although the nature and purpose of comprehending text change as students move through the education system. For example, most students who read at a second-grade level can answer "who," "what," and "where" questions about a story. In later elementary grades, students typically can identify the main character, his or her traits, relation with others, and how that character or other characters have changed in the story. In the older grades, students need to use their reading skills to access content in literature, mathematics, and science.

Exhibit 14
Number of Words Read per Minute by Students with Learning Disabilities, by Language Arts Setting

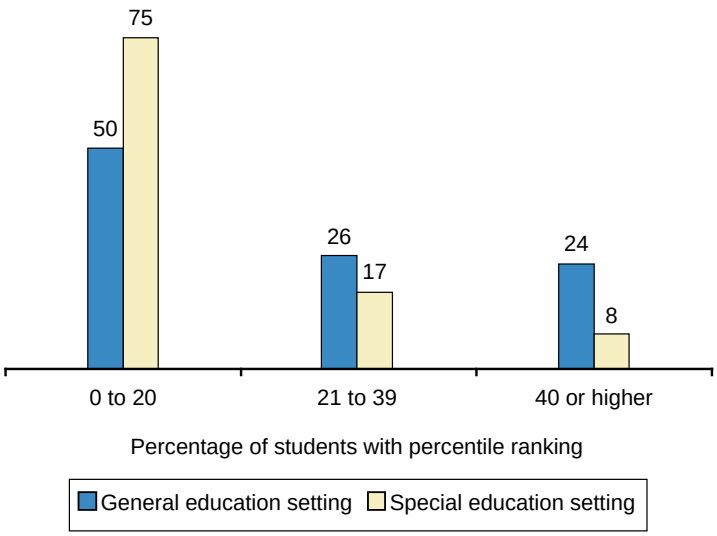


Source: SEELS Wave 3 direct assessment.

To measure reading comprehension among students with LD, SEELS administered passage comprehension subtest from the Woodcock-Johnson III test (WJ-III) (Woodcock, McGrew, & Mather, 2001). This test requires that students "fill in the blank" in a sentence with an appropriate response. The more difficult items require that students increasingly derive meaning from context. Students' raw scores were translated into percentile ratings and organized into three levels of performance. The 40th percentile was used as a cut point to establish the highest level because a number of states use that percentile to establish proficiency for accountability purposes. The two lower categories are 1 to 19 and 20 to 39 percentile points, respectively; students at these two nonproficient levels presumably would require different types, intensities, and durations of intervention to help students progress toward proficiency.

Similar to findings related to oral reading fluency, differences between students with LD who are in general education and special education settings for language arts are statistically significant in regard to passage comprehension scores (Exhibit 15). However, regardless of setting, only 32% of students with LD would be considered proficient in reading comprehension based on a 40th-percentile threshold.

Exhibit 15
Passage Comprehension Percentile Rank for Students with Learning Disabilities, by Language Arts Setting



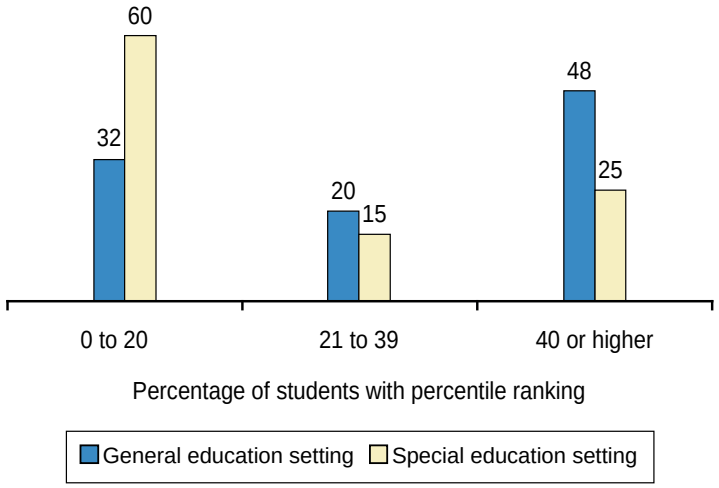
Source: SEELS Wave 3 direct assessment.

- About one in four students with LD receiving language arts instruction in general education settings score at the 40th percentile or higher on the WJ-III passage comprehension subtest, compared with about 1 in 10 among their peers in special education settings.
- Three-quarters of the students with LD receiving language arts services in special education settings have passage comprehension scores that place

them at the 20th percentile or below, compared with one-half of their peers in general education settings.

***Mathematics calculation*.** Mathematics' importance in school curricula is emphasized by its presence in state academic content standards. Furthermore, expertise in mathematics is considered to be an important input into economic competitiveness for the nation as a whole and to good careers for individuals (Woodward, in press). Although it is difficulties with reading for which students are most frequently referred to special education, many students with LD also have difficulty with mathematics. SEELS measured mathematics performance using the WJ III calculation subtest, which requires students to perform operations for problems for which the mathematical operation required is indicated in the question stem. Similar to the findings for reading, students with LD receiving language arts instruction in general education settings have significantly higher mathematics calculation scores than do their peers in special education settings (Exhibit 16). However, regardless of the setting, students with LD demonstrate higher performance in mathematics tests than in reading.

Exhibit 16
Mathematics Calculation Percentile Rank for Students with Learning Disabilities, by Language Arts Setting

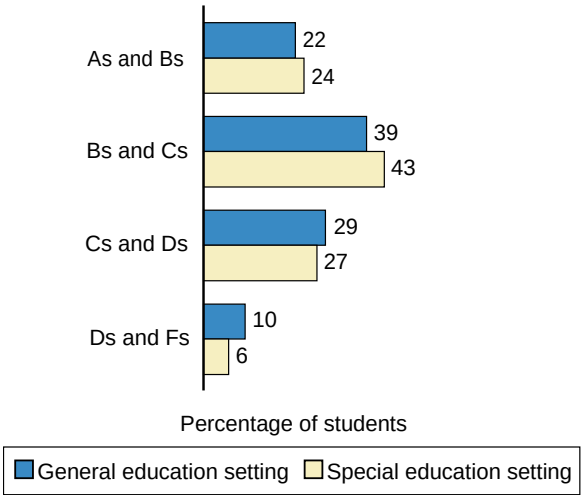


Source: SEELS Wave 3 direct assessment.

- Almost half of students with LD in general education language arts settings score at the 40th percentile or higher on the mathematics calculation subtest, whereas one-quarter of their peers in special education language arts classes do.
- Three-fifths of students with LD in special education settings receive scores at the 20th percentile or below, compared with one-third of their peers in general education settings.

Grades. Standardized tests are an important metric to gauge student achievement. Although considerably more subjective than standardized tests, teacher-given grades also represent an important perspective, as a vehicle for communicating student progress to students and their parents. In SEELS, parents and teachers reported on grades earned by students with LD. Unlike test scores, the pattern of teacher-given grades is generally similar for students in both general and special education settings for language arts (Exhibit 17). Regardless of setting, approximately two-thirds of students with LD receive grades of As and Bs or Bs and Cs. Furthermore, fewer than 10% of students with LD receive grades of Ds or Fs; those grades would indicate significant problems.

Exhibit 17
Grades for Students with Learning Disabilities, by Language Arts Setting



Sources: SEELS Wave 3 parent interview and school program questionnaire.

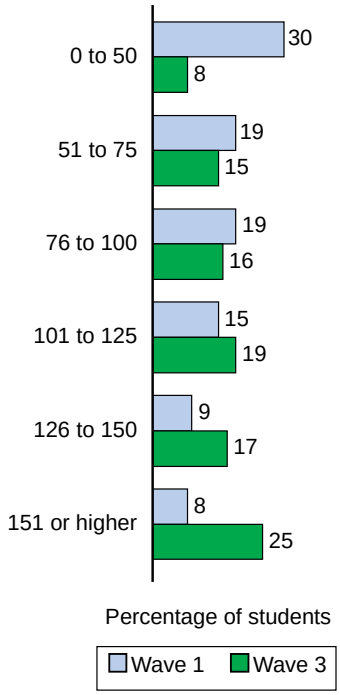
Given the increased emphasis on holding districts and schools accountable for improved performance of students, including those with LD, this section focuses on the academic performance of students with LD. In particular, the evaluation questions answer: (1) how their performance changed between Waves 1 and 3, and (2) how the classroom setting for language arts instruction changed for these students over time as well. Observed changes in performance over time could serve as an indication of students with LD closing the gap with their general education peers in reading and mathematics.

Changes Over Time in Academic Performance

The longitudinal nature of SEELS enables a look at changes over time in the academic achievements of students with LD. This section presents reading and mathematics measures for students with LD as a whole in Wave 1 (2001) and Wave 3 (2004), which depicts the degree of change in achievement over time.

Oral reading fluency. As noted previously, oral reading fluency rates are raw scores on a common metric—words read correctly from a fourth-grade reading passage in 1 minute. Using this measure, the oral reading fluency rates of students with LD improved over the 3-year period (Exhibit 18). Additional, students with LD aged over the 3-year period contributing to their improved oral reading fluency rates. By comparison, students in the general population improved by reading 27 more WPM from 4th grade to 7th grade (Hasbrouck & Tindal, 2005).

Exhibit 18
Number of Words Read per Minute by Students with Learning Disabilities in Waves 1 and 3



Sources: SEELS Waves 1 and 3 direct assessments.

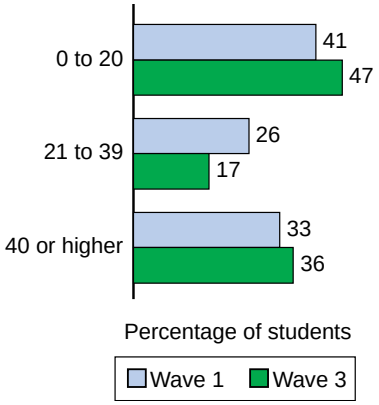
- The percentage of students with LD who read 50 or fewer WPM decreased significantly from Wave 1 to Wave 3 (30% vs. 8%).
- Conversely, the percent of students with LD who read between 126 and 150 WPM significantly increased from Wave 1 (9%) to Wave 3 (17%), as did the percent of students who read 151 or more WPM (8% and 25%, respectively).

Passage comprehension. Unlike the oral reading fluency rate, which is measured on a fixed metric, the percentile ranks of the WJ III measures individual student performance relative to the general student population. On the WJ III passage comprehension subtest, students with LD did not make significant gains relative to students in the general population over a 3-year period. In both Waves 1 and 3, 15% of students with LD scored at the 40th percentile or higher, and 66% of scored below the 20th percentile. Thus, as a group, students with LD

did not close the gap with the general student population over the 3-year period, but neither did they fall further behind.

Mathematics calculation. As mentioned earlier, greater numbers of students with LD scored at the 40th percentile or higher in mathematics calculation than in reading comprehension as measured by WJ-III (Exhibit 20). However, like reading, significant gains in percentile rank were not observed across the data collection periods. Approximately one-third of students with LD scored at the 40th percentile or higher on the WJ-III mathematics calculation subtest. Almost half of students with LD scored below the 20th percentile rank, with comparable results in Wave 1.

Exhibit 19
Mathematics Calculation Percentile Ranks for Students with Learning Disabilities in Waves 1 and 3



Sources: SEELS Waves 1 and 3 direct assessments.

Summary

Students with learning disabilities are the largest category of students served under IDEA. National data on this population show that these students are highly heterogeneous in their characteristics, educational programming, and performance. When students with LD were in the fifth through twelfth grades, somewhat fewer than half received their primary language arts instruction in general education classrooms, compared with slightly more than half instructed in special education classrooms. These rates represent an increase over a 3-year period in students receiving their language arts instruction in a general education setting only and a decrease in receiving instruction in a special education resource room in addition to a general education classroom.

This report found consistent differences between students with LD who differ with respect to the instructional setting for this critical subject. For example, nearly a quarter of students with LD in special education settings for language arts instruction are identified for special education services at or under age 5, whereas only 2% of students in general education language arts settings

were identified so early; more than half of the latter group received first services at age 8 or older.

Generally, students with LD placed in special education settings for language arts instruction "often" participate in reading activities such as practicing sounds, reading out loud, and reading words at sight. Alternatively, students with LD placed in general education settings for language arts "often" participate in more literature-based activities, such as reading poetry, plays, and dramas; learning vocabulary words; and completing written assignments.

The setting differences of students with LD extend to their academic performance as well. Students with LD receiving their language arts instruction in general education settings have significantly higher achievement test scores than their peers receiving that instruction in special education settings. However, regardless of setting for language arts instruction, few students with LD can be considered proficient in passage comprehension and mathematics calculation, with a proficiency threshold set at the 40th percentile. In contrast, teacher-given grades are comparable for the two groups of students. It is not clear whether the pattern of differences in characteristics, programs, and outcomes among students with LD in general and special education language arts classes reflects pre-placement differences in student abilities and/or that differences result from the nature of the educational experiences they receive in the respective settings.

The longitudinal design of SEELS allows for tracking student progress over time. Students with LD did improve over time as evidenced by increases in their oral reading fluency rates. However, on standardized tests of achievement, they did not close the gap with the general student population in either reading comprehension or mathematics.

Students with LD represent an important segment of the student population, whose outcomes must improve if the challenges of NCLB are to be met. For some students with LD, modest improvements in performance may help them achieve proficiency. For others, considerably more progress will be required. The findings in this report demonstrate that much work remains to be done and serve as a reminder that established best practices need to be more widely implemented and that new interventions are required for students with LD to benefit from their educational services.

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APPENDIX A
Sample Sizes (Ns) and Standard Errors (SEs)

Exhibit A-1
Language Arts Settings for Students with Learning Disabilities in Wave 3

	Wave 3		
	Percent	SE	N
General education classroom	44	2.5	762
Special education resource room	22	2.1	762
Self-contained classroom	18	1.9	762
General education and special education resource room	12	1.6	762
Other classroom	4	1.0	762

Exhibit A-2
Classroom Setting for Language Arts Instruction in Waves 1 and 3

	Percent	SE	N
Wave 1			
General education setting	29	2.4	700
Special education resource room	25	2.2	700
Self-contained special education classroom	20	2.0	700
General education and special education resource room	24	2.2	700
Other	2	1.0	700
Wave 3			
General education setting	44	2.5	762
Special education resource room	22	2.1	762
Self-contained special education classroom	18	1.9	762
General education and special education resource room	12	1.6	762
Other	4	1.0	762

Exhibit A-3
Percent of Classes in General Education for Students with Learning Disabilities, by Language Arts Settings in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
Less than 50%	5	1.5	394
More than 80%	76	3.0	394
Special education setting			
Less than 50%	41	3.7	322
More than 80%	11	2.4	322

Exhibit A-4
Selected Demographic Characteristics of Students with Learning Disabilities, by Language Arts Settings in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
Gender			
Male	68	3.2	392
Ethnicity/Race			
White	73	3.0	404
African-American	9	2.0	404
Hispanic	12	2.2	404
Socioeconomic status			
Two-parent household	74	4.1	218
Household income of $25,000 or less	27	3.4	318
Household income of more than $50,000	46	3.8	318
Poverty	11	3.0	201
Special education setting			
Gender			
Male	70	3.5	323
Ethnicity/Race			
White	66	3.5	332
African-American	19	2.9	332
Hispanic	13	2.5	332
Socioeconomic status			
Two-parent household	64	5.3	154
Household income of $25,000 or less	43	4.2	260
Household income of more than $50,000	26	3.7	260
Lives in poverty	27	5.1	144

Exhibit A-5
Age When Students with Learning Disabilities First Began Receiving Special Education Services, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
3 to 4	2	2.8	42
5	0	0.0	42
6 to 7	42	10.8	42
8 or older	56	10.9	42
Special education setting			
3 to 4	8	6.4	35
5	23	9.9	35
6 to 7	43	11.6	35
8 or older	26	10.2	35

Exhibit A-6
Class Size During Language Arts Instruction for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
31 to 40	10	2.1	399
21 to 30	65	3.3	399
11 to 20	21	2.8	399
2 to 10	3	1.2	399
Special education setting			
31 to 40	0	.4	320
21 to 30	5	1.7	320
11 to 20	49	3.8	320
2 to 10	45	3.8	320

Exhibit A-7
Modification of Language Arts Curriculum for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
No modifications	41	3.4	401
Some modifications	53	3.4	401
Substantial modifications	4	1.4	401
Specialized modifications	2	0.9	401
Special education setting			
No modifications	4	1.4	334
Some modifications	39	3.6	334
Substantial modifications	26	3.3	334
Specialized modifications	30	3.4	334

Exhibit A-8
Instructional Groupings for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
Whole class	77	2.9	393
Small group	27	3.1	395
Individual from a teacher	24	2.9	393
Individual from an adult	13	2.3	385
Special education setting			
Whole class	65	3.6	333
Small group	48	3.7	333
Individual from a teacher	33	3.5	334
Individual from an adult	13	332	2.5

Exhibit A-9
Participation in General Instructional Activities for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
Responds orally to questions	38	3.3	392
Takes quizzes or tests	54	3.5	390
Works independently	51	3.5	388
Works with peer or group	34	3.3	387
Participates in class discussion	33	3.3	388
Works on a project or presentation	20	2.8	389
Presents to a class or group	7	1.8	389
Special education setting			
Responds orally to questions	65	3.5	334
Takes quizzes or tests	55	3.7	330
Works independently	54	3.7	332
Works with peer or group	40	3.7	335
Participates in class discussion	58	3.7	334
Works on a project or presentation	20	3.0	331
Presents to a class or group	8	2.0	332

Exhibit A-10
Participation in Reading Activities for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
Completes writing assignments	52	3.5	393
Reads aloud	18	2.7	392
Reads literature, poetry, plays, dramas	58	3.4	385
Reads informational materials	29	3.2	388
Practices phonic/phonemic skills	8	1.9	385
Practices sight word reading	28	2.1	380
Special education setting			
Completes writing assignments	55	3.7	334
Reads aloud	46	3.7	333
Reads literature, poetry, plays, dramas	44	3.7	333
Reads informational materials	34	3.5	334
Practices phonic/phonemic skills	32	3.5	329
Practices sight word reading	10	3.4	333

Exhibit A-11
Classroom Accommodations for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
More time in taking tests	83	3.0	291
Test read to student	38	3.9	291
Modified tests	28	3.6	291
Alternate tests/assessments	11	2.5	291
Modified grading standards	15	2.8	291
Slower paced instruction	12	2.6	291
Additional time to complete assignments	66	3.8	291
Shorter/different assignments	22	3.3	291
More frequent feedback	22	3.3	291
Physical adaptations	15	2.9	291
Special education setting			
More time in taking tests	86	2.8	294
Test read to student	62	3.9	294
Modified tests	52	4.0	294
Alternate tests/assessments	26	3.5	294
Modified grading standards	30	3.7	294
Slower paced instruction	49	4.0	294
Additional time to complete assignments	71	3.6	294
Shorter/different assignments	41	3.9	294
More frequent feedback	33	3.7	294
Physical adaptations	16	2.9	294

Exhibit A-12
Classroom Supports for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
Reader/interpreter	5	1.8	291
Teacher aides	22	3.3	291
Progress monitored by a special education teacher	61	3.9	291
Peer tutor	6	1.9	291
Tutoring by an adult	9	2.3	291
Behavior management program	4	1.7	291
Learning strategies/study skills	31	3.7	291
Special education setting			
Reader/interpreter	6	1.9	294
Teacher aides	33	3.7	294
Progress monitored by a special education teacher	70	3.7	294
Peer tutor	9	2.2	294
Tutoring by an adult	8	2.2	294
Behavior management program	14	2.7	294
Learning strategies/study skills	34	3.8	294

Exhibit A-13
Number of Days of School Missed in the Target Month for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
1 to 2	82	3.0	314
3 to 5	12	2.6	314
6 or more	6	1.8	314
Special education setting			
1 to 2	73	3.7	272
3 to 5	15	3.0	272
6 or more	12	2.7	272

Exhibit A-14
Number of Words Read per Minute by Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
0 to 50	1	1.1	211
51 to 75	6	2.2	211
76 to 100	10	2.8	211
101 to 125	21	2.8	211
126 to 150	20	3.8	211
151 or higher	42	4.6	211
Special education setting			
0 to 50	13	3.4	185
51 to 75	23	4.2	185
76 to 100	18	3.8	185
101 to 125	16	3.7	185
126 to 150	16	3.7	185
151 or higher	14	3.4	185

Exhibit A-15
Passage Comprehension Percentile Rank for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
0 to 20	50	4.7	214
21 to 39	26	4.1	214
40 or higher	24	4.0	214
Special education setting			
0 to 20	75	4.3	188
21 to 39	17	3.7	188
40 or higher	8	2.7	188

Exhibit A-16
Mathematics Calculation Percentile Rank for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
0 to 20	32	4.4	209
21 to 39	20	3.7	209
40 or higher	48	4.7	209
Special education setting			
0 to 20	60	4.9	183
21 to 39	15	3.6	183
40 or higher	25	4.3	183

Exhibit A-17
Grades for Students with Learning Disabilities, by Language Arts Placement in Wave 3

	Wave 3		
	Percent	SE	N
General education setting			
As and Bs	22	2.8	396
Bs and Cs	39	3.3	396
Cs and Ds	30	3.1	396
Ds and Fs	10	2.0	396
Special education setting			
As and Bs	24	3.2	324
Bs and Cs	43	3.7	324
Cs and Ds	27	3.3	324
Ds and Fs	6	1.8	324

Exhibit A-18
Number of Words Read per Minute by Students with Learning Disabilities in Waves 1 and 3

	Percent	SE	N
Wave 1			
0 to 50	30	3.0	433
51 to 75	19	2.6	433
76 to 100	19	2.6	433
101 to 125	15	2.3	433
126 to 150	9	1.9	433
151 or higher	8	1.8	433
Wave 3			
0 to 50	8	1.5	553
51 to 75	15	2.1	553
76 to 100	16	2.1	553
101 to 125	19	2.3	553
126 to 150	17	2.2	553
151 or higher	25	2.5	553

Exhibit A-19
Mathematics Calculation Percentile Ranks for Students with Learning Disabilities in Waves 1 and 3

	Percent	SE	N
Wave 1			
0 to 20	41	3.2	442
21 to 39	26	2.8	442
40 or higher	33	3.0	442
Wave 3			
0 to 20	47	2.9	551
21 to 39	17	2.2	551
40 or higher	36	2.8	551