April 2004

SEELS

INSIDE THE CLASSROOM: THE LANGUAGE ARTS CLASSROOM EXPERIENCES OF ELEMENTARY AND MIDDLE SCHOOL STUDENTS WITH DISABILITIES

Prepared for:

Dr. Lisa Holden-Pitt
Office of Special Education Programs
U.S. Department of Education

SRI Project P10656

SEELS has been funded with federal funds from the U.S. Department of Education, Office of Special Education Programs, under contract number ED-00-CO-0017. The content of this publication does not necessarily reflect the views or policies of the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.

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Prepared by:

Jose Blackorby, Mary Wagner, Camille Marder, Renée Cameto, Phyllis Levine, Michael Chorost, and Anne-Marie Guzman

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ACKNOWLEDGMENTS

The comprehensiveness and scale of the Special Education Elementary Longitudinal Study (SEELS) makes it a daunting undertaking that is made possible only by the contributions of a large team. The authors' sincere thanks go to:

- Lisa Holden-Pitt, Judy Holt and Lou Danielson of the Office of Special Education Programs, U.S. Department of Education for their leadership and guidance in helping make SEELS and the OSEP longitudinal studies program such a valuable asset to our field.
- To Peter Goddard, Cynthia Williamson, Hal Javitz, and the rest of SRI's programming and data management team, whose technical expertise and responsiveness to innumerable and sometimes frantic analysts' requests makes a huge analytic task manageable.
- To Sandra Collins, Marlene Fung, Klaus Krause, and SRI's administrative team for their unfailing support in bringing the study's products to the public.
- To our colleagues at Westat for their contributions as subcontractors in collecting the data reported here.

But none of the contributions made by the SEELS team would be meaningful without the generosity of the more than 10,000 students with disabilities whose stories we tell. Our hats are off to them, their parents and guardians, and to the educators who serve them, for their time, openness, and insights.

CONTENTS

EXHIBITS

1. Inside the Classroom *by Jose Blackorby and Mary Wagner*

The No Child Left Behind Act of 2001 (NCLB), the *Individuals with Disabilities Education Act Amendments of 1997* (IDEA '97), and scores of state and local initiatives culminate nearly two decades of increasing emphasis on the improvement of American education. Schools and educators are now being held accountable for the adequate yearly progress (AYP) of all students, including those with disabilities. The success of these ambitious initiatives will depend on changes in many domains, including teacher preparation and training, assessment policies, standards and expectations, and funding. However, the classroom is where "the rubber meets the road." What happens every school day in classrooms is what students experience directly and is the mechanism through which educational interventions are most likely to produce the desired changes in student accomplishments. Indeed, the current focus on the use of scientifically valid instructional methods underscores the importance of high-quality educational experiences in the classroom. Further, classroom practices may be more amenable to intervention than many other factors associated with academic achievement.

In an effort to characterize the classroom experiences of students with disabilities, this report focuses on language arts because of its central role in the educational programming for nearly all elementary and middle school students. However, the language arts classroom experiences of many students with disabilities are different in a fundamental way from those of their peers without disabilities. Some students with disabilities receive their language arts instruction in general education classrooms with those peers, whereas others are instructed in special education settings of various kinds (e.g., resource rooms, self-contained classrooms, individualized settings).

This report focuses especially on the differences between classroom experiences in general education settings and special education settings. Specifically, this document describes differences in seven aspects of the language arts classrooms and classroom practices of elementary and middle school students with disabilities for students who receive their primary language arts instruction in general education and special education settings:

- **Student characteristics.** IDEA '97 requires that students who receive special education services do so in the least restrictive environment appropriate to their individual needs. For some, that environment has been determined to be a general education classroom; for others, it is a special education setting. Yet little is known nationally about the disability-related and demographic characteristics of students in those different settings. Chapter 2 paints a portrait of the diversity of students with disabilities in the two instructional settings.

- **School program context.** Although the learning of language arts is central to the instructional program and fundamental skill set of students, language arts classrooms are potentially only one of several settings in the overall school programs of students with disabilities. To provide context for interpreting the experiences of students with disabilities in their language arts classes, Chapter 3 summarizes the mix of settings in those broader school programs.
- **Classroom context.** Instruction and student learning in schools usually take place in classrooms where students and teachers work together. The characteristics of those students and teachers influence the challenges the two face together, how they face them, and the resources they bring to dealing with the challenges. Chapter 4 presents information on the number of students and teachers in the classroom, the reading levels of peers in the class, and teacher qualifications in general and special education language arts settings.
- **Groupings and activities.** As they try to meet the needs of students in diverse classrooms, teachers make many decisions regarding how to organize instructional time. Chapter 5 addresses the use of whole-class, small-group, and individual instruction in teaching language arts. It also addresses general instructional activities (e.g., classroom discussion), as well as activities that focus directly on reading and language arts (e.g., oral reading, vocabulary instruction).
- **Supports for general education teachers.** General education is increasingly the preferred placement for students with disabilities. For inclusive placements to be successful, both teachers and students require support. Chapter 6 describes the types of information and supports that are provided to general education teachers who have students with disabilities in their language arts classes.
- **Student accommodations and supports.** To perform up to their ability, students with disabilities often require accommodations or modifications in the format and presentation of, or response to, instructional or assessment events. Chapter 7 describes the number and types of accommodations and supports that students receive in general and special education language arts settings.
- **Teachers' assessments of students' performance.** The evaluation of student progress is an essential part of the educational process, and the grades teachers choose to assign to students are a key metric for communicating that progress. In addition to evaluating academic progress, teachers also evaluate student behavior and administer discipline when it is considered necessary. Chapter 8 describes the importance teachers in general and special education settings place on a range of factors when they evaluate students' performance in language arts. In addition, the similarity between discipline practices applied to students with disabilities and other students in general education language arts classrooms is discussed.

- **Summary.** Chapter 9 provides a summary of the findings presented in the report.

An Overview of SEELS[1]

These topics are addressed using data from the Special Education Elementary Longitudinal Study (SEELS), which is sponsored by the Office of Special Education Programs of the U.S. Department of Education and is being conducted by SRI International (SRI). SEELS includes a sample of more than 11,000 students who were ages 6 to 12 and receiving special education in the first or higher grades on September 1, 1999. The information in this report refers to the 2000-01 school year, when the students ranged in age from 7 through 14. Findings also represent students with disabilities as a whole and students in each of the 12 federal special education disability categories used nationally. Students receiving special education differ from the general population of students in important ways; however, they differ from each other just as significantly in regard to many dimensions (e.g., see Blackorby et al., 2002 and Wagner et al., 2002). A key value of SEELS is its ability to depict these important disability-related differences for students nationally.

Another valuable aspect of SEELS is its longitudinal design. SEELS will collect information for students three times over a 5-year period—years in which students undergo dramatic physical, emotional, and cognitive development. Thus, SEELS will be able to build on the information on classroom experiences contained in this report by showing the shifts in instructional settings and experiences of students with disabilities as they move from elementary to middle school and from middle to high school.

Finally, SEELS brings to bear information that represents the perspectives of parents, students, and school staff to address a wide range of topics, as depicted in the SEELS conceptual framework (Exhibit 1-1). The information on classroom experiences addressed in this report has been collected from the teachers who provided SEELS students with their primary language arts instruction in the 2000-01 school year and from school staff who were in the best position to describe students' overall school programs. This information is an important part of understanding the broader educational experiences and services of students as they change over time. As SEELS continues, this information will be combined with the perspectives of parents and students to understand such key issues as students' academic achievement; their experiences outside of school;

[1] Appendix A presents details of the SEELS design and methods. Additional information is available online at www.seels.net.

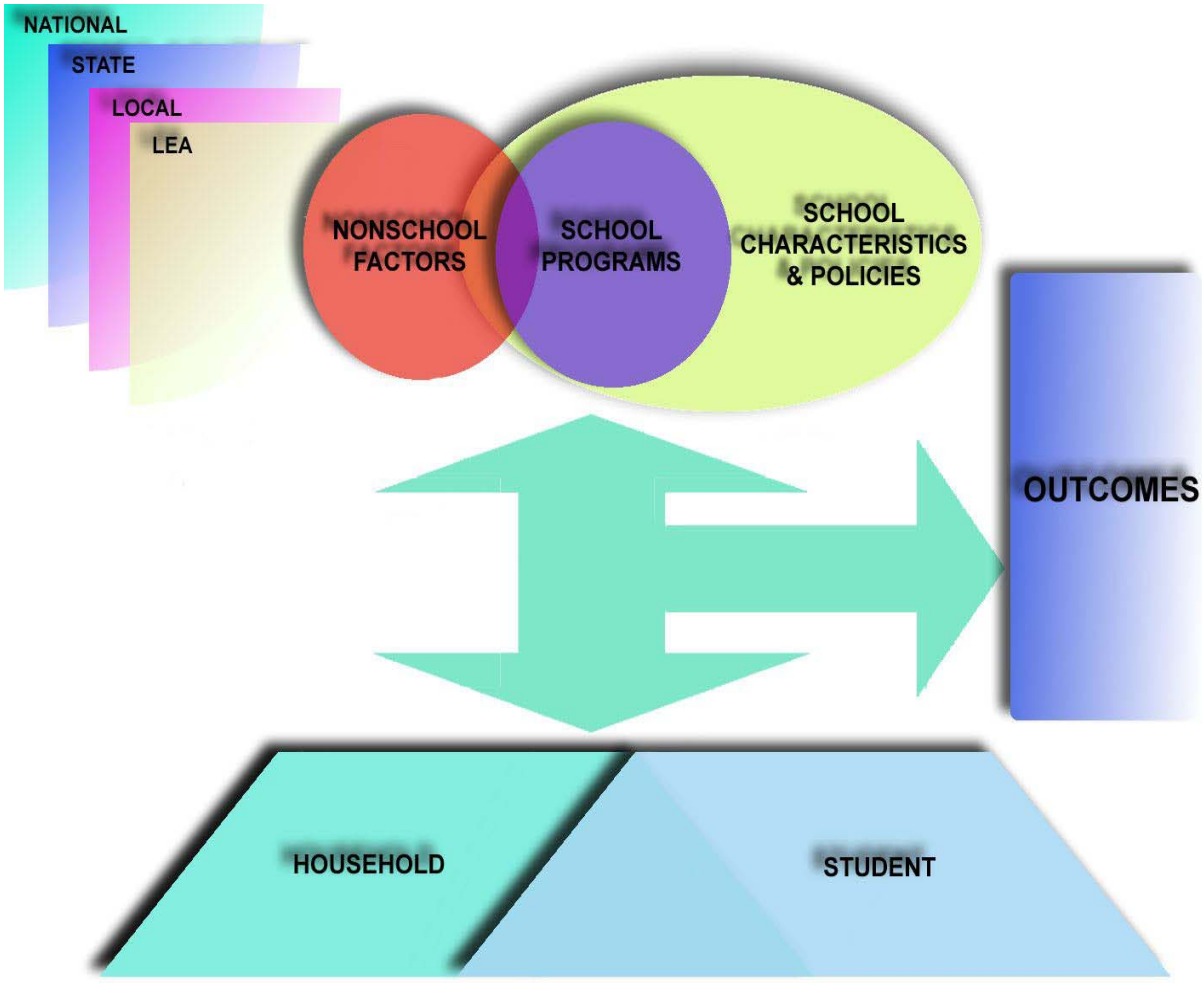


Exhibit 1-1 SEELS Conceptual Framework

and the aspects of students, households, school programs, and nonschool experiences that contribute to more positive results for students over time.

To implement this ambitious analysis agenda, parent interview/survey data, direct assessments of students' academic performance in reading and mathematics, and school staff questionnaires that capture important aspects of students' schools and individual educational programs are being conducted in three waves between 2000 and 2004. The rich, wide-ranging view of elementary and middle school students as they age that SEELS is providing will support informed policy-making and improved practice for students with disabilities.

Technical Notes

An effort has been made to present the wealth of information in this report in an accessible format. Readers of the report should keep the following in mind.

- **Results are weighted.** All the descriptive statistics presented in this report are weighted estimates of the national population of students receiving special

education who were ages 7 through 14, as well as of each disability category individually.

- **Standard errors.** Means and percentages are accompanied by a standard error (presented in parentheses) which describes the precision of the estimate. For example, a weighted estimated value of 50% and a standard error of 2 for a variable means that the value for the total population, if it had been measured, would lie between 48% and 52% (plus or minus 2 percentage points of 50%), with a 95% confidence level. In general, estimates based on small samples have larger standard errors and should be viewed cautiously. Standard errors in this report are shown in data tables; those for charts can be found in Appendix B.
- **Crosstabulation variables.** This descriptive look at language arts classroom experiences examines characteristics of those experiences as they vary for students who differ in their primary disability category, gender, race/ethnicity, family income, and grade level. However, exhibits include these crosstabulations only when statistically significant differences are evident. Readers who are interested in the full set of crosstabulations can find them at www.seels.net.

References

Blackorby, J., Wagner, M., Cadwallader, T., Cameto, R., Levine, P., & Marder, C., et al. (2002). *Behind the label: The functional implications of disability.* Menlo Park, CA: SRI International. Available at http://www.seels.net/designdocs/SEELS_FunctionalSkills.PDF

Wagner, M., Marder, C., & Blackorby, J., (with Cardoso, D.). (2002). *The children we serve: The demographic characteristics of elementary and middle school students with disabilities and their households*. Menlo Park, CA: SRI International. Available at http://www.seels.net/designdocs/SEELS_Children_We_Serve_Report.pdf

2. Characteristics of Students in General and Special Education Language Arts Classes *by Mary Wagner, Camille Marder, and Michael Chorost*

When teachers who teach students with disabilities in general and special education classes look out at those students, what do they see? In what ways are the students with disabilities in those two settings similar? In what ways are they different? These questions are important because students' experiences in their classrooms are shaped in part by the characteristics of the students themselves. Teachers often tailor the style and pace of instruction to the number, learning styles, and other characteristics of the students they teach.

As background for understanding the classroom experiences of students with disabilities who differ in the setting of their primary language arts instruction, this chapter describes aspects of their disability profiles, their individual and household characteristics, some of their past educational experiences, and their engagement in and social adjustment at school.

Students' Disabilities

Disability Categories

- Language arts classes in both general and special education settings include students who span the range of most primary disability classifications (Exhibit 2-1).
- Language arts teachers in special education settings teach a group of students whose mix of disabilities is quite different from those taught by general education teachers. For example, students with disabilities in general education language arts classrooms are most likely to be classified as having speech impairments, whereas students in special education settings are most likely to have learning disabilities as their primary disability classification.
- Students with mental retardation, autism, or multiple disabilities are more common in special education than general education classes, as are students whose parents reported they have attention deficit/hyperactivity disorder (AD/HD).

Exhibit 2-1
Students' Disabilities, by Instructional Setting

	Primary Language Arts Instructional Setting	
	General Education	Special Education
Percentage with district-assigned primary disability classification of:		
Learning disability	35.3 (2.0)	48.0 (2.1)
Speech impairment	49.6 (2.1)	12.2 (1.4)
Mental retardation	2.3 (.6)	17.0 (1.6)
Emotional disturbance	3.9 (.8)	8.5 (1.2)
Hearing impairment	1.0 (.4)	1.5 (.5)
Visual impairment	.5 (.3)	.4 (.3)
Orthopedic impairment	1.3 (.5)	1.4 (.5)
Other health impairment	4.6 (.9)	4.6 (.9)
Autism	.9 (.4)	2.5 (.7)
Traumatic brain injury	.1 (.1)	.3 (.2)
Multiple disabilities	.5 (.3)	3.5 (.8)
Deaf-blindness	.0	.1 (.1)
Percentage whose parents reported they have AD/HD	22.2 (2.0)	36.4 (2.4)
Sample size		
Disability categories	2,668	3,486
Parents' reports of AD/HD	2,188	2,837

Standard errors are in parentheses.

Functional Abilities

- Students with disabilities in both special education and general education settings exhibit a range of functional abilities;[1] both high- and low-functioning students are instructed in each setting (Exhibit 2-2).

[1] A self-care scale includes parents' ratings of how well students feed and dress themselves independently. A functional cognitive skills scale includes parents' ratings of how well students can tell time on a clock with hands, count change, read common signs, and look up telephone numbers and use the phone. A social skills scale includes parents' ratings of how often students exhibit a variety of social skills related to cooperation, self-control, and assertion.

Exhibit 2-2
Students' Functional Abilities, by Instructional Setting

	Primary Language Arts Instructional Setting	
	General Education	Special Education
Percentage with reported scale score for:		
Self-care skills		
High (8)	85.0 (1.7)	66.0 (2.4)
Medium (5 to 7)	14.5 (1.7)	30.1 (2.3)
Low (2 to 4)	.5 (.4)	3.9 (1.0)
Functional cognitive skills		
High (15 or 16)	32.0 (2.2)	15.0 (1.8)
Medium (9 to 14)	62.7 (2.3)	63.5 (2.4)
Low (4 to 8)	5.3 (1.1)	21.6 (2.1)
Social skills		
High (18 to 22)	23.9 (2.0)	15.2 (1.8)
Medium (10 to 17)	69.2 (2.2)	67.4 (2.3)
Low (0 to 9)	6.9 (1.2)	17.4 (1.9)
Percentage reported to speak:		
As well as other same-age children	57.6 (2.4)	51.7 (2.6)
With "a little trouble"	39.1 (2.4)	34.7 (2.5)
With "a lot of trouble" *OR* not at all	3.4 (.9)	13.6 (1.8)
Percentage reported to understand others:		
As well as other same-age children	66.3 (2.3)	42.1 (2.5)
With "a little trouble"	29.6 (2.2)	43.9 (2.6)
With "a lot of trouble" *OR* not at all	4.0 (1.0)	14.9 (1.9)
Percentage whose health is reported as:		
Excellent or very good	81.8 (1.7)	63.8 (2.4)
Good	13.5 (1.7)	24.1 (2.2)
Fair or poor	4.3 (1.0)	12.1 (1.7)
Sample size	1,988	2,446

Standard errors are in parentheses.

- Students in special education settings for language arts are more likely than students with disabilities in general education classes to have lower levels of self-care skills and functional literacy, and to have more limited social skills.
- Although students in the two settings are about equally likely to speak as well as other children of their age, parents of students in special education settings are much less likely to report that their children understand what other people say to them as well as other same-age children.
- Special education language arts settings are more likely than general education classes to include students with disabilities who are in fair or poor health.

Individual Demographic Characteristics

Age and Grade Level

- Students who receive their primary language arts instruction in special education settings are an average of one-half year older than students with disabilities in general education classes (Exhibit 2-3). This difference may reflect the fact that, among students in the SEELS age group, students with learning disabilities or emotional disturbances are older, on average, than students in other disability categories (Marder & Wagner, 2002) and make up larger proportions of students in special education settings than in general education language arts settings.
- Consistent with their older age, students in special education settings tend to be at higher grade levels. Almost 40% of them are in sixth grade or above, compared with 32% of those in general education classrooms.
- Thus, the classroom practices more common in instructing younger students may be more prominent experiences for students with disabilities in general education than in special education settings because of the age and grade differences in the two groups, apart from the differences in settings.

Exhibit 2-3
Students' Age and Grade Level, by Instructional Setting

	Primary Language Arts Instructional Setting	
	General Education	Special Education
Percentage who are ages:		
7 or 8	23.8 (1.7)	16.1 (1.6)
9 or 10	35.3 (2.0)	30.5 (2.0)
11 or 12	30.7 (1.9)	38.6 (2.1)
13 or 14	10.2 (1.2)	14.7 (1.5)
Average age	10.0 (.1)	10.5 (.1)
Percentage in:		
First through third grades	33.3 (2.0)	23.4 (1.8)
Fourth or fifth grade	35.0 (2.0)	33.0 (2.0)
Sixth grade or above	31.6 (1.9)	38.7 (2.1)
An ungraded program	.1 (.1)	4.8 (.9)
Sample size	2,657	3,425

Standard errors are in parentheses.

Race/Ethnicity and Primary Language

- A larger proportion of the students are nonwhite in special education settings than in general education settings (Exhibit 2-4).
- The larger proportion of African-American students with disabilities in special education settings is consistent with the disability categories that are more prominent there. Mental retardation, emotional disturbance, traumatic brain injury, and multiple disabilities are the disability categories with the largest proportions of African-American students (Marder & Wagner, 2002); they also make up larger proportions of students with disabilities in special education than in general education settings.

Exhibit 2-4
Students' Race/Ethnicity and Primary Language, by Instructional Setting

	Primary Language Arts Instructional Setting	
	General Education	Special Education
Percentage who are:		
White	70.8 (1.9)	60.6 (2.1)
African American	13.8 (1.4)	25.1 (1.8)
Hispanic	13.3 (1.4)	12.1 (1.4)
Asian/Pacific Islander	1.1 (.4)	.6 (.3)
American Indian/ Alaska Native	.7 (.3)	.9 (.4)
Other	.3 (.2)	.6 (.3)
Percentage who primarily speak a language other than English at home	14.1 (1.7)	14.7 (1.8)
Sample size		
Race/ethnicity	2,682	3,478
Language spoken at home	2,009	2,625

Standard errors are in parentheses.

- The percentages of students in the two settings who are Hispanic or who speak primarily a language other that English at home are virtually identical.

Students' Household Characteristics

Students in special education language arts classes are:

- More likely than students with disabilities in general education classes to be living with one parent or to be living in an institution or other nonfamilial arrangement (Exhibit 2-5).
- More likely to be from households in poverty than those of students with disabilities in general education classes, whose poverty rate is similar to that of the general population of students (U.S. Census Bureau, 2002)[2].

[2] A dichotomous variable indicating that a student's household was in poverty was constructed using parents' reports of household income and household size and federal poverty thresholds for 2000 (U.S. Census Bureau, 2001). These thresholds indicate the income level for specific sizes of households, below which the household is considered in poverty. Because SEELS respondents reported household income in categories (e.g., $25,001 to $30,000) rather than specific dollar amounts, estimates of poverty status were calculated by assigning each household to the mean value of the

Exhibit 2-5
Students' Household Characteristics, by Instructional Setting

	Primary Language Arts Instructional Setting	
	General Education	Special Education
Percentage of students:		
Living with:		
Two parents	78.0 (2.0)	64.0 (2.4)
One parent	18.6 (1.9)	27.5 (2.3)
With relative(s)	2.2 (.7)	4.5 (1.1)
In foster care	.5 (.3)	1.0 (.5)
Other arrangement	.7 (.4)	3.0 (.9)
In households with annual income:		
$25,000 or less	31.0 (2.2)	43.4 (2.6)
$25,001 to $50,000	29.7 (2.2)	34.7 (2.5)
More than $50,000	39.3 (2.4)	21.8 (2.1)
In households in poverty	17.3 (1.9)	28.4 (2.4)
With a head of household who is not a high school graduate	14.6 (1.7)	23.8 (2.1)
In households with another member with a disability	36.9 (2.4)	42.6 (2.6)
Sample size		
Poverty	1,918	2,431
Other factors	1,985	2,567

Standard errors are in parentheses.

- More likely to be from households headed by someone who is not a high school graduate than are students with disabilities in general education classes, where their rate is similar to that of students without disabilities.[3]
- Live in households that are more likely to include another person with a disability in addition to the student receiving special education.

The relative prevalence of the above-listed risk factors among students in special education settings is consistent with the higher prevalence of students with mental retardation or emotional disturbances there. Those groups of students are among the most likely to exhibit these risk factors (Wagner et al., 2002).

category of income reported by the parent and comparing that value to the household's size to determine poverty status.

[3] Calculated with data from the National Household Education Survey, 1999.

Parents' Support and Expectations

- Students are about equally likely to have several forms of parental support, regardless of their language arts instructional setting (Exhibit 2-6). For example, they are about equally likely to have parents who help them with homework frequently, read to them daily, and go to parent-teacher conferences.
- In other respects, students whose language arts instruction takes place in special education settings receive less parental support. They are markedly less likely than their peers in general education classrooms to have parents who attend classroom events or volunteer at school.
- Parents of students whose primary language arts instruction takes place in special education settings are less likely than other parents to have high expectations for their children's future educational attainment.

Exhibit 2-6
Parents' Support for Students' Education, by Instructional Setting

	Primary Language Arts Instructional Setting	
	General Education	Special Education
Percentage whose parents reported:		
Helping with homework three or more times a week	53.2 (2.5)	57.5 (2.8)
Reading to students every day	31.5 (2.2)	32.4 (2.3)
Providing a computer at home	72.1 (2.2)	57.0 (2.6)
Attending classroom events	85.8 (1.6)	72.5 (2.2)
Volunteering at school	56.2 (2.3)	45.4 (2.5)
Attending parent-teacher conferences	88.3 (1.6)	82.3 (2.0)
Expecting child "definitely" to graduate from high school	78.5 (1.9)	51.3 (2.5)
Expecting child "definitely" to go on to postsecondary education	41.5 (2.3)	22.5 (2.1)
Sample size		
Homework help	1,922	1,949
Provides computer	1,985	2,461
Other factors	1,991	2,584

Standard errors are in parentheses.

Past Education-related Experiences

- Students whose primary language arts instruction is in special education settings are more likely than their peers in general education classrooms to have changed schools frequently and to have experienced the attendant academic and social disruption such moves can cause (Exhibit 2-7).

Exhibit 2-7
Students' Past Educational Experiences, by Instructional Setting

	Primary Language Arts Instructional Setting	
	General Education	Special Education
Percentage who have changed schools:		
Once or not at all	78.5 (2.0)	62.8 (2.5)
Twice	11.7 (1.6)	19.0 (2.0)
Three times or more	9.8 (1.5)	18.2 (2.0)
Percentage who ever have been:		
Retained at grade level	22.0 (1.9)	29.8 (2.3)
Suspended or expelled	8.0 (1.3)	17.9 (1.9)
Percentage who during the school year have been:		
Bullied or picked on at school or on the way to or from school	24.8 (2.0)	31.5 (2.3)
Physically attacked or involved in fights at school or on the way to or from school	18.4 (1.8)	29.7 (2.3)
Sample size	1,991	2,601

Standard errors are in parentheses.

- Students whose primary language arts instruction is in special education settings also are more likely to have been retained at grade level at least once, and are more than twice as likely to have been suspended or expelled at some time.
- Being bullied or picked on at school or involved in fights is more common for students with disabilities whose primary language arts instruction is in a special education setting than in a general education class.

Engagement and Social Adjustment at School

- According to parents, students with disabilities are about equally likely to find school challenging or to enjoy school, regardless of their placement for language arts (Exhibit 2-8).

Exhibit 2-8
Students' Engagement and Social Adjustment at School, by Instructional Setting

	Primary Language Arts Instructional Setting	
	General Education	Special Education
Percentage whose parents reported (by level of agreement) that they:		
Find school challenging		
Strongly agree	32.3 (2.2)	28.8 (2.2)
Agree	53.0 (2.4)	59.8 (2.4)
Disagree/strongly disagree	14.6 (1.7)	11.4 (1.6)
Enjoy school		
Strongly agree	35.0 (2.2)	35.6 (2.4)
Agree	50.7 (2.3)	49.9 (2.5)
Disagree/strongly disagree	14.3 (1.6)	14.5 (1.7)
Percentage whose parents reported they:		
Get along with students		
Very well	61.0 (2.3)	43.9 (2.5)
Pretty well	32.2 (2.2)	42.6 (2.5)
Not very or not at all well	6.7 (1.2)	13.4 (1.7)
Get along with teachers		
Very well	69.1 (2.2)	61.5 (2.4)
Pretty well	26.6 (2.1)	30.1 (2.3)
Not very or not at all well	4.3 (1.0)	8.5 (1.4)
Sample size	2,145	2,669

Standard errors are in parentheses.

- Students in special education settings are less likely than those in general education settings to be reported by parents to get along with teachers and students "very well", and are more likely to be reported to get along "not very well" or "not at all well." Even with these differences, the large majority of students in both settings reportedly get along with teachers and other students at least "pretty well."

Summary

Teachers of students with disabilities in special education classes face a different group of students than do teachers of students with disabilities in general education classes. Although both settings include some students at every ability level and subject to each individual and household risk factor, students in special education language arts classes are substantially more likely to experience each of the challenges addressed in this chapter than are students with disabilities in general education classes.

As would be expected, as a group, their functional abilities are much more limited, including their self-care, social, and functional cognitive skills. They also are more likely to be in poorer health. Consistent with their lower functional abilities, their parents have much lower expectations for their educational attainment than parents of students with disabilities in general education language arts classes.

Less predictably, students in special education settings are also exposed to an array of risk factors for poor outcomes to a significantly greater degree than their peers in general education settings. They are more likely to be poor; children of color; and living in households without two parents, with heads of household who are poorly educated and with another household member with a disability. In addition, they are less likely to receive some kinds of family support for their education.

The experiences at school of students in special education classes also are more troubled, overall, than those of students with disabilities in general education classes. They are more likely to have been retained at grade level and suspended or expelled in the past and bullied or picked on and involved in fights at school in the current school year. Despite these more difficult experiences at school, students with disabilities in both general and special education settings are about equally likely to have been reported by parents to enjoy school.

References

Marder, C., & Wagner, M. (2002). Demographic characteristics of elementary and middle school students receiving special education. In M. Wagner, C. Marder, & J. Blackorby, (with D. Cardoso). *The children we serve: The demographic characteristics of elementary and middle school students with disabilities and their households*. Menlo Park, CA: SRI International. Available at http://www.seels.net/designdocs/SEELS_Children_We_Serve_Report.pdf

U.S. Census Bureau. (2001). *Income 1999.* Available at http://www.census.gove/hhes/income/income99/99tablea.html.

U.S. Department of Education (National Center for Education Statistics). (1999). *National household education survey.* Washington, DC: Author.

Wagner, M., Marder, C., & Cardoso, D. (2002). Characteristics of students' households. In M. Wagner, C. Marder, & J. Blackorby, (with D. Cardoso). *The children we serve: The demographic characteristics of elementary and middle school students with disabilities and their households*. Menlo Park, CA: SRI International. Available at http://www.seels.net/designdocs/SEELS_Children_We_Serve_Report.pdf

3. *Instructional Settings* *by Mary Wagner, Camille Marder, and Michael Chorost*

Although this report focuses on the language arts classroom experiences of elementary and middle school students with disabilities, those experiences take place in the larger context of students' overall school programs. It is helpful to have a broad outline of that larger context in order to understand variations in classroom experiences. This chapter provides that overview by discussing the variety of instructional settings students with disabilities experience in their overall school programs. The settings that students experience for various kinds of classes are presented, as well as the amount of time students spend in those settings. Findings are presented for students with disabilities as a whole and for those who differ in their primary setting for language arts instruction—the central comparison of this report.

Overview of Instructional Settings

- Multiple settings are the norm for elementary and middle school students with disabilities. The overall school day for two-thirds of students with disabilities includes both general and special education settings.
- The vast majority of students with disabilities (94%) spend a portion of their school day in general education classes.
- Almost three-fourths of students with disabilities have special education placements in their school programs.

General Education Classes

- Students with disabilities are most likely to be in general education classes for nonacademic subjects (e.g., art or physical education; Exhibit 3-1). General education classes also commonly provide skills instruction.
- Students with disabilities who spend any time at all in general education classrooms spend the majority of their school day there. Such students average 4.8 hours in general education classes in a typical day, or about five class periods. Forty-two percent of students who spend time in general education classes are there for more than 6 hours a day.
- Students whose primary language arts instruction is in general education classrooms are quite likely to have instruction in other subjects in that setting as well, spending, on average, the equivalent of about six class periods per day there.

Exhibit 3-1
Participation of Students with Disabilities in General Education Settings

	All Students with Disabilities	Primary Language Arts Instructional Setting	
		General Education	Special Education
Percentage receiving instruction in general education classrooms for:			
No subjects	6.4	.0	14.7
	(1.8)	--	(1.6)
Language arts	62.2	100.0	15.3*
	(1.5)	--	(1.6)
Other academics	81.0	99.1	58.9
	(1.2)	(.4)	(2.2)
Nonacademics (e.g., art, physical education)	90.7	95.0	85.6
	(.9)	(.9)	(1.6)
Skills instruction (e.g., study skills, life skills)	48.3	65.1	29.0
	(1.6)	(2.2)	(2.1)
Average hours per day students spend in general education classes	4.8	5.9	3.0
	(.1)	(.1)	(.1)
Of students in general education classes, percentage of time spent in those classes:			
<1 to 2 hours per day	16.6	5.8	33.3
	(1.2)	(1.0)	(2.4)
2.1 to 4 hours per day	13.1	3.0	28.8
	(1.1)	(.8)	(2.3)
4.1 to 6 hours per day	27.8	25.8	31.0
	(1.5)	(1.9)	(2.3)
More than 6 hours per day	42.4	65.4	7.0
	(1.6)	(2.1)	(1.3)
Sample size			
All students	5,274	2,288	2,983
Students in a general education setting	4,458	2,288	2,168

Standard errors are in parentheses.

* These students receive language arts instruction in a special education setting in addition to their primary language arts instruction, which is in a general education setting.

- Virtually all of them take at least one additional academic subject and a nonacademic subject (e.g., art, physical education) in a general education classroom. Almost two-thirds (65%) have instruction in study skills, life skills, or prevocational skills in a general education classroom.

- The majority of students (59%) whose primary language arts instruction is in a special education setting take at least one academic subject in a general education setting. Most (86%) take a nonacademic subject, 29% receive skills instruction, and 15% receive some language arts instruction in a general education classroom.
- Students whose primary language arts instruction is in a special education setting still average 3 hours a day in general education classes, and more than one-third (38%) spend more than 4 hours in general education classes in a typical day. However, 15% of students whose primary language arts instruction is in a special education classroom spend all their time in such settings.

Special Education Settings

- More than one-fourth of students with disabilities, including almost half of students whose primary language arts instruction is in a general education classroom, spend no time in special education settings (Exhibit 3-2).
- Students who spend any time at all in special education settings average about 3 hours per day there. However, 13% of those students spend more than 6 hours a day in special education settings.
- Overall, 59% of students with disabilities receive language arts instruction in a special education setting, and almost half take at least one other academic course there. Almost four in 10 students receive skills instruction in a special education class, and 15% take nonacademic classes in such a setting.
- Almost half of students with disabilities whose primary language arts instruction is provided in a general education classroom spend no time in a special education setting. However, about one-fourth of them receive some language arts instruction in a special education class, in addition to their primary language arts instruction in a general education classroom, and almost as many take at least one other academic subject in a special education class. Skills instruction and nonacademic courses are less commonly taken in special education classes.
- Students whose primary language arts instruction is in a general education class, but who spend some part of their day in special education settings, average about an hour in them in a typical day. Fewer than one in five such students spend more than 2 hours per day in special education settings.

Exhibit 3-2
Participation of Students with Disabilities in Special Education Settings

	All Students with Disabilities	Primary Language Arts Instructional Setting	
		General Education	Special Education
Percentage receiving instruction in general education classrooms for:			
No subjects	27.6 (1.4)	48.9 (2.2)	.0 --
Language arts	59.0 (1.5)	26.5 (1.9)	100.0 --
Other academic subjects	49.2 (1.6)	22.3 (1.8)	82.2 (1.7)
Nonacademics (e.g., art, physical education)	15.1 (1.1)	6.6 (1.1)	25.5 (1.9)
Skills instruction (e.g., study skills, life skills)	38.8 (1.6)	18.4 (2.5)	62.3 (1.9)
Average hours per day spend in special education settings by students in them	2.7 (.1)	1.1 (2.5)	3.7 (1.9)
Percentage in special education settings who spend the following time in them:			
<1 to 2 hours per day	45.7 (1.8)	82.9 (2.3)	22.1 (1.9)
2.1 to 4 hours per day	22.5 (1.5)	11.1 (1.9)	29.7 (2.1)
4.1 to 6 hours per day	18.5 (1.4)	3.7 (1.2)	28.0 (2.1)
More than 6 hours per day	13.3 (1.2)	2.3 (.9)	20.2 (1.8)
Sample size			
All students	5,670	2,452	3,214
Students in special education settings	4,411	1,345	3,062

Standard errors are in parentheses.

- Most students (82%) whose primary setting for language arts is a special education class also take at least one other academic class in such settings, and 62% receive skills instruction in them. One-fourth of such students also take nonacademic subjects in special education settings.
- Students whose primary setting for language arts is a special education class average the equivalent of about four class periods per day in them. However, one in five such students spend more than 6 hours per day in special education classes.

Resource Rooms

- Resource rooms are the most common special education setting (Exhibit 3-3); almost half of students with disabilities spend at least part of their day in one, including about one-third who take language arts and one-fourth who take at least one other academic subject in one. Resource rooms also are the location in which 19% of students with disabilities receive skills training.
- Students who are instructed in resource rooms average 1.6 hours in them; only about one-third spend more than 2 hours there.

Exhibit 3-3
Participation of Students with Disabilities in Special Education Resource Rooms

	All Students with Disabilities	Primary Language Arts Instructional Setting	
		General Education	Special Education
Receive instruction in resource rooms for:			
No subjects	54.1 (1.5)	58.5 (2.1)	48.7 (2.2)
Language arts	34.2 (1.5)	24.8 (1.9)	45.7 (2.2)
Other academic subjects	26.2 (1.4)	20.0 (1.7)	33.8 (2.1)
Nonacademics (e.g., art, physical education)	4.8 (.7)	6.2 (1.0)	3.1 (.8)
Skills instruction (e.g., study skills, life skills)	18.7 (1.3)	15.8 (1.7)	21.9 (1.9)
Average hours per day spent in resource rooms by students in them	1.6 (.1)	1.0 (.1)	2.1 (.1)
Percentage in resource rooms who spend the following time in them:			
<1 to 2 hours per day	67.2 (2.2)	84.9 (4.2)	47.9 (3.3)
2.1 to 4 hours per day	24.7 (2.0)	11.0 (2.1)	39.7 (3.2)
4.1 to 6 hours per day	5.9 (1.1)	2.4 (1.0)	9.7 (2.0)
More than 6 hours per day	2.2 (.7)	1.8 (.9)	2.7 (1.1)
Sample size			
All students	5,640	2,422	3,214
Students in resource rooms	2,105	1,075	1,030

Standard errors are in parentheses.

Exhibit 3-4
Participation of Students with Disabilities in Self-contained Special Education Classes

	All Students with Disabilities	Primary Language Arts Instructional Setting	
		General Education	Special Education
Receive instruction in self-contained classrooms for:			
No subjects	71.2 (1.4)	94.0 (1.0)	43.2 (2.2)
Language arts	26.1 (1.4)	2.5 (.7)	55.0 (2.2)
Other academic subjects	24.2 (1.3)	2.5 (.7)	50.8 (2.2)
Nonacademics (e.g., art, physical education)	10.4 (.9)	.5 (.3)	22.6 (1.9)
Skills instruction (e.g., study skills, life skills)	20.3 (1.3)	2.1 (.7)	41.3 (2.2)
Average hours per day spent in self-contained classrooms by students in them	4.1 (.1)	1.3 (.2)	4.6 (.1)
Percentage who spend the following time in self-contained classrooms:			
<1 to 2 hours per day	20.6 (2.2)	77.3 (6.0)	10.6 (1.8)
2.1 to 4 hours per day	18.1 (2.1)	13.5 (4.9)	18.9 (2.3)
4.1 to 6 hours per day	34.1 (2.6)	6.6 (3.6)	39.0 (2.8)
More than 6 hours per day	27.3 (2.4)	2.6 (2.3)	31.5 (2.7)
Sample size			
All students	5,641	2,430	3,207
Students in self-contained classes	2,435	225	2,206

Standard errors are in parentheses.

- Forty-two percent of students whose primary language arts instruction is in a general education setting spend some time in a resource room, including one-fourth who have some language arts instruction there. Students are less likely to spend time in resource rooms for other academic subjects, nonacademics, or skills instruction. Those who have resource room placements average 1 hour per day in them.
- About half of students whose primary language arts instruction is in a special education setting have some instruction in a resource room, including 46% who receive their language arts instruction there and about one-third who take other academic subjects in one. These students average about 2 hours per day in resource rooms.

Self-contained Special Education Classrooms

- Most students with disabilities (71%) receive no instruction in a self-contained class (Exhibit 3-4). When they do, they are about equally likely to take language arts (26%) or other academic subjects (24%) there. Students who spend any time in a self-contained classroom average about 4 hours per day there, although about one in five such students are there for 2 hours or less, and 27% are there for more than 6 hours per day.
- Few students whose primary language arts instruction is in a general education class spend any time in a self-contained classroom. Students who do average 1.3 hours per day there.
- More than half of students whose primary language arts instruction is in a special education class take at least one subject in a self-contained class, most often language arts. Half also take other academic subjects in a self-contained class. Students who have self-contained placements average most of their day in them.

Individual[1] or Homebound Instruction

- Only 2% to 3% of students with disabilities are reported to receive individual or homebound instruction (Exhibit 3-5), regardless of their instructional setting for language arts. Skills instruction is the most common focus of individualized instruction.
- Students who have individual or homebound instruction average about an hour per day of such instruction.

[1] The term "individual instruction" is used here to refer to instruction provided to a student in a setting where no other students are present. It does not include the one-to-one time a teacher might spend with a student during a class in which other students are present but occupied with other activities.

Exhibit 3-5
Students with Disabilities Receiving Individual or Homebound Language Arts Instruction

	All Students with Disabilities	Primary Language Arts Instructional Setting	
		General Education	Special Education
Percentage receiving individual or homebound instruction for:			
No subjects	97.3 (1.8)	97.8 (.8)	96.6 (1.1)
Language arts	.9 (.3)	.7 (.3)	1.2 (.5)
Other academic subjects	.9 (.3)	.6 (.3)	1.1 (.5)
Nonacademics (e.g., art, physical education)	.4 (.2)	.2 (.2)	.6 (.3)
Skills instruction (e.g., study skills, life skills)	1.3 (.4)	1.1 (.5)	1.6 (.6)
Average hours per day spent in individual or homebound instruction by students receiving it	1.2 (.3)	.8 (.3)	1.7 (.4)
Percentage receiving individual or homebound instruction who spend the following time in it:			
<1 to 2 hours per day	76.8 (7.2)	90.6 (7.4)	60.5 (10.9)
2.1 to 4 hours per day	10.3 (5.2)	1.7 (3.2)	20.5 (9.0)
4.1 to 6 hours per day	11.8 (5.5)	7.4 (6.6)	17.0 (8.4)
More than 6 hours per day	1.1 (1.8)	.3 (1.4)	2.1 (3.2)
Sample size			
All students	5,274	2,288	2,983
Students in individualized settings	217	120	97

Standard errors are in parentheses.

Summary

Virtually all elementary and middle school students who receive special education also are general education students. Students with disabilities who spend any time in general education classes typically spend the majority of their day there, including the time for their academic subjects.

Fewer students with disabilities (three-fourths) spend any time in special education settings in the course of a typical school day. In addition, more than half of students who spend time in special education settings also take at least some academic instruction in general education settings.

Resource rooms are the most common special education setting. Almost half of students with disabilities spend part of their day in them. Self-contained classes are much less common; only about one-fourth of students with disabilities spend time in them, although some students do average most of their school day there. Individual or homebound instruction is rare.

4. Classroom Context *by Phyllis Levine, Camille Marder, Mary Wagner, Jose Blackorby, Michael Chorost, and Anne-Marie Guzman*

The landmark federal legislation, *The No Child Left Behind Act of 2001* (NCLB) places an increased emphasis on educational accountability for results and improving achievement for all students, particularly for disenfranchised students, including those with disabilities. Individual student differences pose a variety of challenges to improving academic achievement for students receiving special education services, especially in language arts. For example, learning disabilities are frequently most evident in language arts classes. Students with emotional disturbances may have difficulty in language arts as well, but for different reasons. Each type of disability may require a different type of instruction or support.

Other factors that influence schools' efforts to improve outcomes are embedded in the context of the classroom itself, including such things as the number of students and the experience of teachers. This chapter describes several dimensions of the classrooms where elementary and middle school students with disabilities receive language arts instruction. It addresses the numbers of students and instructional staff, student reading abilities, and the educational qualifications of teachers.

Students and Instructional Staff in Language Arts Classrooms

The relationships between class size and student outcomes have received considerable attention in recent years. Proponents of smaller classes contend that they allow teachers to be more effective in reaching students, particularly in the early grades. A notable national effort is now directed toward reducing the teacher-student ratio, in part as a response to the growing focus on mandatory academic standards, and several states have passed legislation to reduce class sizes.

Lower teacher-student ratios may be particularly important for students with disabilities if they create an environment that promotes students' engagement and inclusion or that allows teachers to tailor instruction more effectively to the needs of diverse learners (Achilles & Finn, 2000; Finn et al., 2001; Harris & Graham, 1996; Slavin, 1990).

The quality of instruction within a classroom also may be influenced by how functional abilities are distributed across the students. A large class can be particularly challenging when the class includes students with a broad range of special learning needs.

Nationally, the sizes of the language arts classes of students with disabilities vary greatly across classroom settings and among students with different disability categories (Exhibit 4-1).

Exhibit 4-1
Number of Students and Instructional Staff in Language Arts Classrooms, by Instructional Setting

	Students Receiving Primary Language Arts Instruction in:	
	General Education	Special Education
Class size:		
Average class size	22.7	10.4
	(.2)	(.2)
Percentage of students with disabilities in classrooms with:		
1 to 15 total students	9.0	91.3
	(1.2)	(1.3)
16 to 20 total students	22.6	7.1
	(1.8)	(1.2)
21 to 25 total students	39.0	1.0
	(2.1)	(.4)
More than 25 total students	29.4	.7
	(1.9)	(.4)
Number of special education students in class:		
Average number	3.1	10.4[a]
	(.1)	(.2)
Percentage of students with disabilities in classrooms with		
No special education students	21.9[b]	0.0
	(1.8)	(.0)
1 to 4 special education students	54.9	8.0
	(2.2)	(1.3)
5 to 9 special education students	17.7	35.4
	(1.7)	(2.2)
10 or more special education students	5.4	56.6
	(1.0)	(2.3)
Percentage of students with disabilities with any of the following in their class:		
General education teachers	98.4	4.0
	(.5)	(.9)
Special education teachers	18.0	97.5
	(1.6)	(.7)
Other paid staff, including:	31.0	60.6
	(1.9)	(2.2)
Classroom aides	23.4	57.1
	(1.8)	(2.2)
One-to-one instructional assistants	8.8	12.4
	(1.2)	(1.5)
Specialists	4.0	4.7
	(.8)	(1.0)
Sample size	2,672	3,117

Standard errors are in parentheses.

[a] All students in special education classes are shown above under "class size" and again in this section of the exhibit.

[b] General education teachers may report that they have no special education students in their classrooms because students have been declassified and/or because the teachers are not aware that particular students receive special education.

- Students with disabilities whose primary language arts placement is general education attend classes with an average of 23 students. Approximately one in five are in classrooms with 15 or fewer students; more than two in five are in classrooms with more than 20 students.
- Students with disabilities whose primary language arts placement is general education attend general education classes in which two other students, on average, receive some form of special education, according to teacher reports.[1] Approximately one in five students (22%) have teachers who are not aware that any students in their classroom receive special education services. Almost one in four are in classrooms with at least five students who receive some form of special education—18% are in classes with five to nine such students, and 5% are in classes with 10 or more such students.
- Students with disabilities whose primary language arts placement is special education attend classes with an average of 10 students, all of whom receive some form of special education. Approximately one in 12 are in classrooms with fewer than five students; more than half are in classrooms with at least 10 students.
- Almost all students with disabilities in general education language arts classes (98%) have a general education teacher in their classroom, whereas almost all (97%) students in special education language arts classes have a special education teacher present in the classroom.
- Approximately one in five students with disabilities in general education classes (18%) have a special education teacher, as well as a general education teacher, present in the classroom.
- Thirty-one percent of students with disabilities in general education language arts classes and 61% of students with disabilities in special education language arts classes have one or more paid staff besides teachers in the classroom.
- For the most part, in both general and special education settings, paid staff other than teachers in the classroom serve as classroom aides. About one in four students with disabilities in general education language arts classes (23%) and more than half of students with disabilities in special education language arts classes (57%) have at least one aide in the classroom.

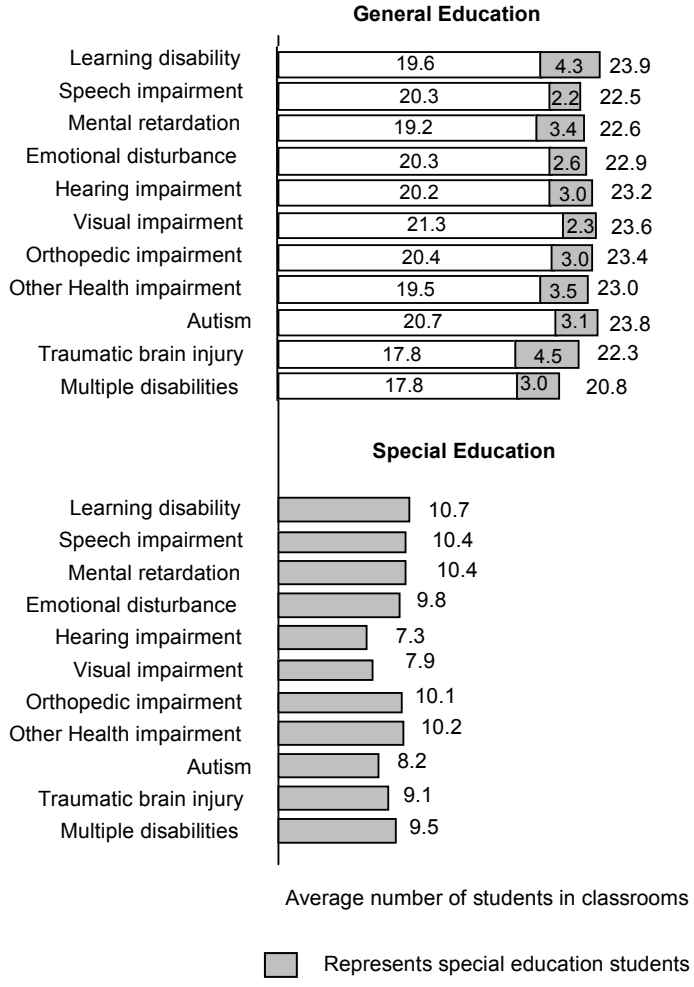
[1] This number appears to be an understatement of the number of students who receive some form of special education. Teachers' reports are most likely the result of some students being declassified and teachers not being aware that others receive special education, particularly when they receive services outside of the teacher's classroom. The latter possibility should be borne in mind when interpreting these findings.

- Approximately one in 10 (9%) students with disabilities in general education language arts classes, and about one in eight students in special education language arts classes (12%) have one or more one-to-one instructional assistants in the classroom.
- Few students in either setting have other types of specialists in the classroom.

Students and Instructional Staff in Classrooms: Disability Category Differences

- For students attending general education language arts classes, neither total class size nor the number of students teachers report are receiving special education differs across the disability categories (Exhibit 4.2).
- Regardless of their disability, on average, students in special education language arts classes have between eight and 11 students in their classroom. The only difference in class sizes between any two groups is that students

Exhibit 4-2
Average Number of Students in Language Arts Classes, by Instructional Setting and Disability Category



with hearing impairments attend smaller classes than students with learning disabilities or mental retardation (7.4 students on average vs. 10.7 and 10.5 students on average).

- The percentage of students with most disabilities in general education language arts classroom who have a special education teacher in their classroom ranges from 10% for students with speech impairments to approximately 20% for students with emotional disturbances, orthopedic impairments, other health impairments, or multiple disabilities, and to approximately 25% for learning disabilities, mental retardation, or autism (Exhibit 4-3). The implication of these findings is that general education teachers have primary responsibility for educating these children while they are in their classrooms.

Exhibit 4-3
Staffing in Language Arts Classrooms, by Instructional Setting and Disability Category

Percentage of students with type of staff in their classroom:	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Dis-abilities
General education											
Special education teacher	27.5	10.3	25.6	20.0	13.4	13.8	19.2	19.7	25.0	50.6	19.5
	(3.4)	(1.9)	(6.0)	(3.8)	(3.2)	(3.1)	(3.4)	(3.8)	(5.3)	(9.7)	(10.1)
A classroom aide, one-to-one instructional assistant, or other specialist	30.7	29.9	36.9	24.9	37.3	29.4	41.7	31.9	65.9	36.4	77.4
	(3.5)	(2.9)	(6.6)	(4.1)	(4.6)	(4.1)	(4.3)	(4.4)	(5.9)	(9.4)	(10.7)
Special education											
General education teacher	3.9	3.6	3.3	4.2	5.6	13.5	5.2	7.6	2.4	3.2	4.1
	(1.5)	(3.0)	(1.2)	(1.6)	(2.2)	(5.2)	(2.2)	(2.8)	(1.2)	(2.7)	(1.7)
A classroom aide, one-to-one instructional assistant, or other specialist	47.0	70.3	74.7	74.4	65.7	72.7	79.4	64.7	86.0	65.3	85.8
	(3.9)	(7.5)	(2.8)	(3.6)	(3.8)	(5.4)	(3.9)	(5.1)	(2.7)	(7.2)	(3.1)
Sample size											
General education	348	485	99	206	280	304	329	274	201	77	53
Special education	329	75	474	294	408	181	246	208	401	134	341

Standard errors are in parentheses.

- In sharp distinction to the other disability categories, approximately 50% of children with traumatic brain injuries in general education classrooms have special education teachers in their classrooms.
- The percentage of students with most types of disabilities in general education language arts classes who have a paid staff member other than a teacher in their classrooms ranges from 29% to 42%. Youth with emotional disturbances are the least likely to have a paid staff member other than a teacher in their classrooms (25%), and youth with autism or multiple disabilities are the most likely (66% and 77%, respectively).

Students and Staff in Classrooms: Grade-Level Differences

- Students with disabilities in general education language arts classes in the first through third grades tend to have fewer students in their classrooms than students in the higher grades—an average of 21 students, compared with 24 students (Exhibit 4-4).
- The average number of students who receive special education in the general education language arts classrooms of students with disabilities increases over the grade levels. First- through third-grades classes include an average of two students who receive special education; fourth- and fifth-grade classes include an average of three; and classes in sixth grade and above include an average of four.
- Students with disabilities in general education language arts classes in the fourth grade and higher are much more likely than students in the first through third grades to have a special education teacher in their classroom. Whereas 9% in first through third grades have special education teachers in their classrooms, 21% in fourth and fifth grades, and 25% in sixth grade and above do so.

Exhibit 4-4
Students and Staff in Language Arts Classrooms, by Instructional Placement and Demographic Characteristics

	Grade Level				Household Income			Race/Ethnicity			
	Ungraded	First through Third	Fourth and Fifth	Sixth and Above	$25,000 or Less	$25,001 to $50,000	More than $50,000	White	African American	Hispanic	Asian/ Pacific Islander
General education											
Average number of students in the classroom		20.7 (.3)	23.5 (.4)	24.1 (.4)	21.9 (.5)	22.9 (.5)	23.4 (.4)	22.8 (.3)	22.6 (.7)	22.4 (.7)	24.3 (2.3)
Average number of special education students in the classroom	--	2.1 (.2)	3.3 (.2)	4.3 (.3)	3.3 (.3)	3.0 (.3)	3.0 (.2)	3.3 (.2)	3.3 (.4)	3.2 (.4)	2.9 (.9)
Percentage of students with:											
A special education teacher in the classroom	--	8.6 (2.0)	20.6 (2.8)	25.4 (3.3)	19.6 (3.6)	18.2 (3.3)	15.8 (2.8)	20.5 (1.9)	15.6 (4.3)	9.9 (3.8)	10.1 (12.6)
A classroom aide, one-to-one instructional assistant, or other specialist in the classroom		39.8 (3.6)	32.5 (3.3)	21.2 (3.1)	35.5 (4.4)	30.3 (4.0)	28.2 (3.5)	28.4 (2.1)	31.9 (5.5)	40.4 (6.3)	55.0 (20.7)
Special education											
Average number of special education students	8.9 (.4)	9.5 (.4)	9.6 (.4)	10.9 (.3)	7.2 (.3)	6.4 (.3)	4.8 (.3)	5.8 (.2)	7.9 (.4)	6.5 (.5)	4.7 (1.4)
Percentage of students with:											
A general education teacher in the classroom	.2 (.6)	4.9 (2.0)	4.6 (1.7)	3.4 (1.4)	2.2 (2.2)	4.2 (2.0)	5.4 (2.5)	5.5 (1.7)	1.7 (1.2)	1.3 (1.5)	.0 (.0)
A classroom aide, one-to-one instructional assistant, or other specialist in the classroom	87.3 (4.3)	70.4 (4.3)	61.4 (3.9)	51.0 (3.7)	66.6 (3.8)	56.9 (5.0)	65.3 (5.3)	59.1 (2.8)	61.2 (4.3)	61.5 (6.5)	91.4 (12.5)
Sample size											
General education	--	848	928	762	525	578	859	1,916	329	249	48
Special education	328	742	904	984	975	659	614	1,723	789	409	48

Standard errors are in parentheses.

- Students with disabilities in general education language arts classes in the first through fifth grades are more likely than students in the sixth grade and above to have a classroom aide, one-to-one instructional assistant, or other specialist in their classroom. More than 30% of students in the first through fifth grades have such staff members in their classrooms, compared with 21% of students in the sixth grade and above.
- Students in special education language arts classes in the first through fifth grades have an average of 10 students in their classrooms, whereas students in the same type of classes in the sixth grade and above have an average of 11 students in their classrooms.
- For students in special education language arts classrooms, the grade levels do not differ in the likelihood of having a general education teacher in the classroom; however, the likelihood of having a paid staff member other than a teacher decreases in higher grades. In the first through third grades, 70% of students have such staff members, whereas in the sixth grade and above, 51% do so. The students most likely to have such staff members are students in ungraded classes; 87% have a paid staff member other than a teacher in their classrooms.

Students and Staff in the Classrooms: Demographic Differences

- For students with disabilities in general education classes, class size increases with income (22 students in classes with household incomes of $25,000 or less, compared with 23 students in classes with income above $50,000); however, the average number of special education students remains about the same.
- In special education settings, class size decreases with income (seven students in classes with household incomes of $25,000 or less compared with five students in classes with incomes above $50,000.)
- Students from the three household income groups do not differ in terms of the staff in their classrooms.
- The only difference among students with disabilities of the various races/ethnicities in general education language arts classes is that Hispanic students are less likely than white students to have a special education teacher in the classroom. Whereas 20% of white students have such teachers in their classrooms, 10% of Hispanic students do.
- Among students with disabilities in special education language arts classes, the only difference among the various races/ethnicities is that Asian/Pacific Islander students are more likely than white students to have a classroom aide, one-to-one instruction assistant, or other specialist in the classroom. Whereas 60% of white students have such teachers in their classrooms, 91% of Asian/Pacific Islander students do.

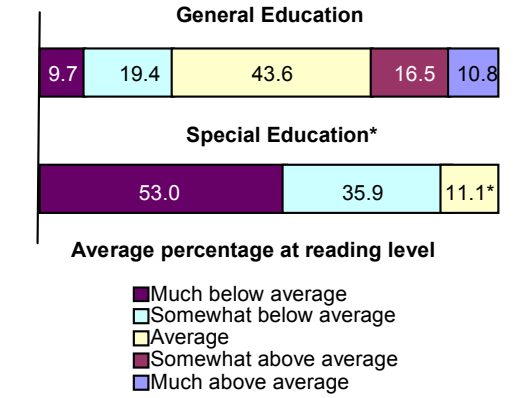
Reading Performance of Students in Language Arts Classrooms

A key component of classroom context is the diversity of ability levels represented among students in the class. A broad mix of students' abilities in a given class can require educators to use different types of instructional approaches to accommodate diverse student needs.

Reading ability is a fundamental aspect of students' overall skill set and paramount for school success. However, students with disabilities typically lag behind their peers in the language arts, especially in reading (Barr, 1986; Blackorby et al., 2004; Elbaum et al., 1999; Gersten & Dimino, 1989). SEELS teachers were asked to report the reading levels of students in their class. Teachers estimated the proportion of students in their language arts class who performed "much above average", "somewhat above average", "average", "somewhat below average", or "much below average".

- Students in general education classrooms have peers whose reading abilities closely match the normal distribution (Exhibit 4-5). Forty-four percent of students in language arts classes attended by students with disabilities are rated by their teachers as having average reading abilities, approximately one-fourth (27%) are rated as having reading abilities that are above average or much above average, and almost one-third (30%) are rated as having abilities that are below average or much below average.

Exhibit 4-5
Average Teacher Ratings of Reading Levels of Language Arts Classes of Students with Disabilities, by Instructional Setting



Due to their small proportions in the special education setting, the categories of "much above average" (1.1) and "somewhat above average" (1.7) have been combined with the "average" (8.3) category.

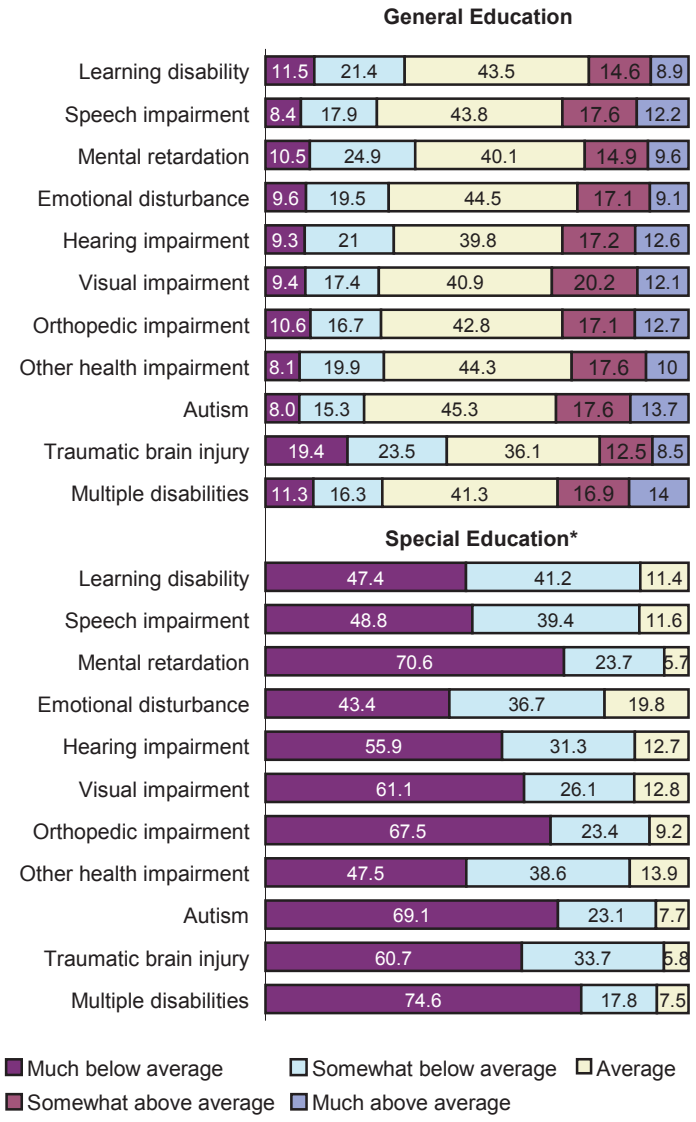
- Students receiving language arts instruction in special education settings have many more classmates with below-average reading abilities than students with disabilities in general education classes. Only 10% are rated by their teachers as having average reading abilities, whereas approximately

one-third (35%) are rated as having below-average reading abilities, and approximately half (53%) are rated as having abilities that are much below average. None are rated as having above-average abilities.

Classroom Reading Ability Level: Disability Category Differences

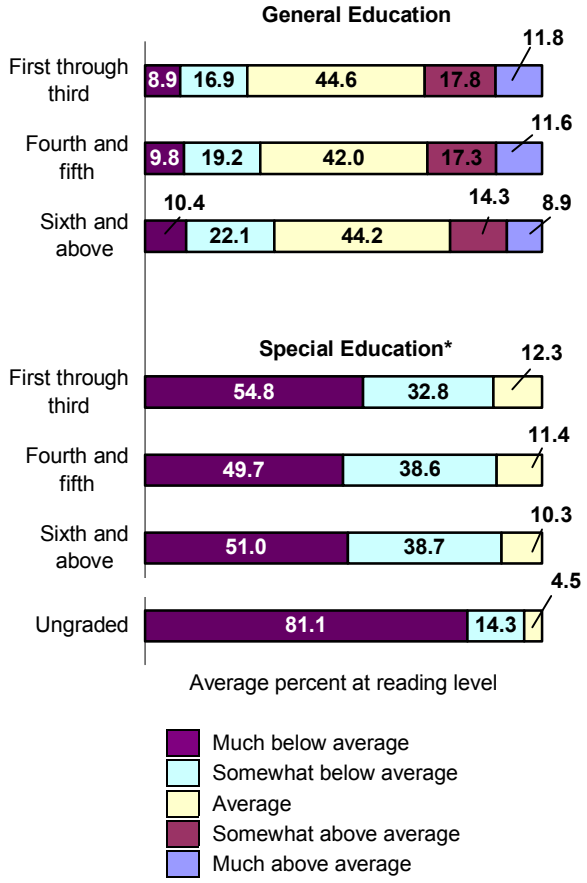
- In general education classes, students with different disabilities vary relatively little in terms of the reading abilities of their language arts classes. On average, between 65% and 77% of the reading levels of these students' classmates are rated by teachers as average or above average (Exhibit 4-6). An exception is students with traumatic brain injuries; on average, 57% of their classmates' reading levels are rated as average or above average.
- Students in special education classes are rated as having markedly lower reading abilities. Few students in any disability category have any classmates whose reading levels are rated as above average. However, there is a considerable range in the percentages of students' classmates with average reading abilities. For example, whereas approximately one in 17 students in the classrooms of students with mental retardation are rated as having average reading levels, approximately one in 10 students in the classrooms of students with orthopedic impairments or learning disabilities and one in five students in the classrooms of students with emotional disturbance are rated as having these levels.

Exhibit 4-6
Average Teacher Ratings of Reading Levels of Language Arts Classes of Students with Disabilities, by Disability Category and Setting



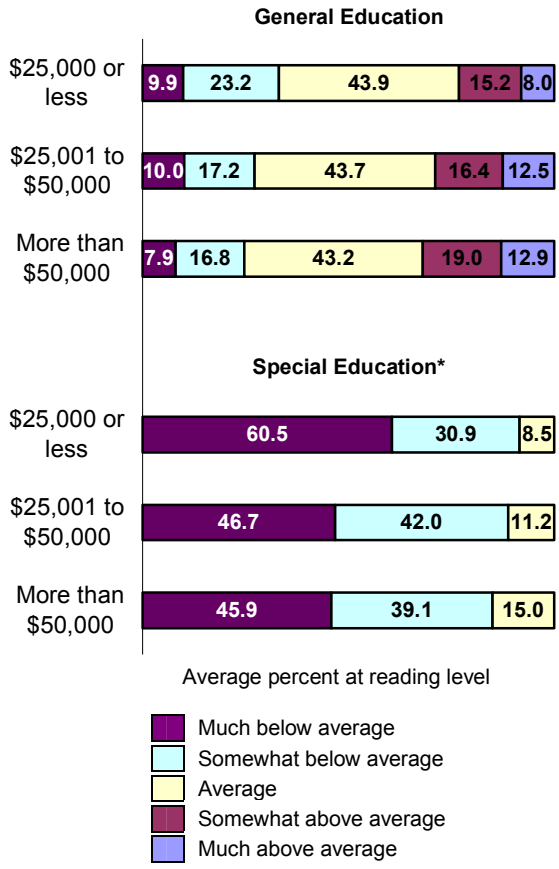
*Due to their small proportions in the special education setting, the categories of "much above average" (<3.0) and "somewhat above average" (<1.9) have been combined with the "average" (<15.0) category.

Exhibit 4-7
Average Teacher Ratings of Reading Levels of Language Arts Classes of Students with Disabilities, by Grade Level and Setting



*Due to their small proportions in the special education setting, the categories of "much above average" (<1.3) and "somewhat above average" (<2.2) have been combined with the "average" category (<9.5).

Exhibit 4-8
Average Teacher Ratings of Reading Levels of Language Arts Classes of Students with Disabilities, by Household Income and Instructional Setting



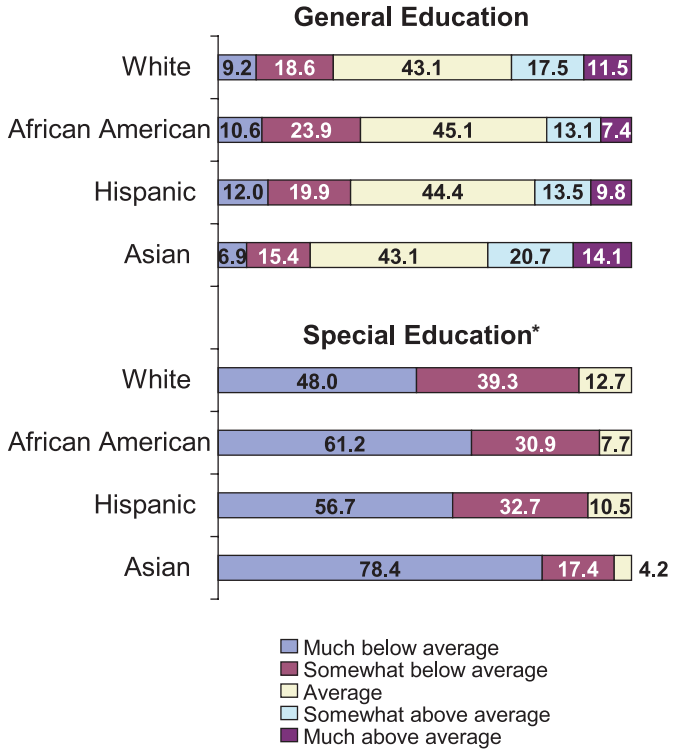
*Due to their small proportions in the special education setting, the categories of "much above average" (<1.9) and "somewhat above average" (<2.4) have been combined with the "average" category (<11.0).

Classroom Reading Ability Levels: Grade-Level Differences

- General education language arts teachers of students with disabilities are more likely to rate the reading ability of their classes as average or above average in the first through third grades than in the sixth grade and above. Whereas, teachers of first through third graders with disabilities indicate that 74% of the students in their classrooms have average or above-average reading skills, teachers of students above the fifth grade indicate that 67% of the students in their classrooms have average or above-average reading skills (Exhibit 4-7).
- In special education settings, there are no significant differences in the average percentages of students in language arts classrooms who read at

various levels across the grade levels; however, ungraded classes tend to have lower levels of ability than classes at any grade level.

Exhibit 4-9
Average Teacher Ratings of Reading Levels of Language Arts Classes of Students with Disabilities, by Race/Ethnicity and Instructional Setting



*Due to their small proportions in the special education setting, the categories of "much above average" (<1.5) and "somewhat above average" (<2.1) have been combined with the "average" category (<9.4).

Classroom Reading Ability Levels: Demographic Differences

- In general education classes, students from the lowest income households tend to be in language arts classes with comparatively low reading levels (Exhibit 4-8). On average, teachers indicate that one-fourth of students in the classes of students with disabilities from high-income families are below-average readers, whereas they indicate that one-third of students in the classes of students with disabilities from low-income families are below-average readers.
- Although the average percentages of average or above-average readers in special education language arts classrooms do not differ for students with various levels of household income, the average percentages of students whose reading skills are "much below average" do differ. On average, 61% of the students in the classrooms of students with disabilities whose family incomes are less than $25,000 have much-below-average reading skills, whereas 47% of the students in the classrooms of students with disabilities whose family incomes are between $25,000 and $50,000, and 46% of

students in the classrooms of students with disabilities whose family incomes exceed $50,000 have much-below-average reading skills.

- In general education settings, African-American students are more likely than white students to have more below-average readers in their classrooms (Exhibit 4-9)—on average 38% of the students in the classroom, compared with 28% of the students.
- Among students receiving instruction in special education settings, compared with white students, African-American and Asian/Pacific Islander students have more classmates whose reading ability is assessed as much below average (63% and 78%, respectively, vs. 48%).

Teacher Profiles: Type of Certificate, Preparation Program, and Level of Education

NCLB emphasizes the need to have qualified teachers in every classroom who are appropriately prepared to teach students with diverse needs. Teacher preparation programs are seeking to respond to the legislative imperatives, particularly with regard to raising performance standards for new teachers (Carlson et al., 2002). Studies have shown that teachers who have fulfilled stringent preparation requirements and acquired appropriate credentials are more effective in the classroom, compared with teachers who do not have teaching certificates or who hold an emergency credential, with regard to such things as curriculum planning, individualizing instruction for students with diverse needs, and developing creative instructional practices that benefit the class (Brownell & Pajares, 1999; Darling-Hammond, 2000a). The lack of universal standardized credentials and inconsistent certification requirements across states creates confusion, as well as immense variation in teacher quality (Darling-Hammond, 2000a, 2000b).

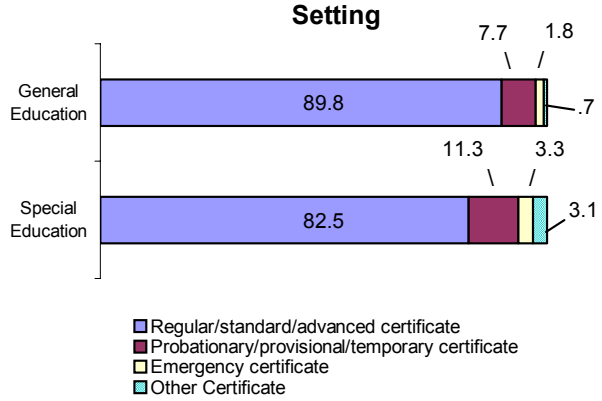
In this section, the certification and educational backgrounds of teachers who provide language arts instruction to students with disabilities are described.

Teacher Certification Across Instructional Settings

- Regardless of their language arts setting, the large majority of students with disabilities have teachers who hold a typical teaching certification (i.e., regular, standard, or advanced; Exhibit 4-10). However, students in general education languages arts settings are somewhat more likely than students in special education language arts settings to have fully credentialed teachers.
- The pattern of certification for language arts teachers of students with disabilities in special education settings generally mirrors that of national estimates from the Study of Personnel Needs in Special Education[2] (SPeNSE; Carlson et al., 2002).

[2] The OSEP-sponsored Study of Personnel Needs in Special Education (SPeNSE) provides in-depth information on the characteristics of teachers and staff who serve students with disabilities. Information is available at www.spense.org.

Exhibit 4-10
Certification of Language Arts Teachers of Students with Disabilties, by Instructional Setting



Teacher Certification: Disability Category Differences

- Among students with disabilities in general education language arts classes, between 85% and 95% have teachers with regular or advanced certificates (Exhibit 4-11).
- Among students with disabilities in special education language arts classes, between 85 and 92% of those with mental retardation, hearing, visual, or other health impairments, or traumatic brain injuries have teachers with regular or advanced certificates.
- Consistent with SPeNSE findings (Carlson et al., 2002), a comparatively smaller proportion of students with emotional disturbances in special education settings have language arts teachers without regular or advanced certificates. Students with learning disabilities, or speech or orthopedic impairments also are among the least likely to have teachers with regular or advanced certificates.

Teacher Certification: Grade-Level Differences

- In general education settings, students with disabilities in the early elementary grades are more likely than students in the middle school grades to be taught language arts by teachers who hold standard certificates. Approximately 93% of students in general education language arts classes have teachers who hold regular or advanced credentials, whereas 86% of students in the sixth grade and above have language teachers with such credentials.

Exhibit 4-11
Certification of Language Arts Teachers of Students with Disabilities, by Disability Category and Instructional Setting

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Disturbance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabili-ties
General Education											
Percentage of students whose language arts instructor holds a:											
Regular/standard/ advanced certificate	88.3 (2.4)	90.1 (1.9)	92.2 (3.8)	89.9 (2.9)	91.7 (2.6)	89.3 (2.8)	88.9 (2.7)	95.3 (2.0)	94.7 (2.8)	86.3 (6.6)	84.9 (9.2)
Probationary/ provisional/temporary certificate	8.7 (2.1)	7.3 (1.6)	6.0 (3.3)	9.0 (2.7)	7.2 (2.5)	9.2 (2.6)	7.7 (2.3)	3.5 (1.8)	5.3 (2.8)	13.7 (6.6)	15.1 (9.2)
Emergency certificate	2.5 (1.2)	1.7 (0.8)	.0 (.0)	1.2 (1.0)	0.6 (0.7)	0.8 (0.8)	2.7 (1.4)	0.9 (0.9)	.0 (.0)	.0 (.0)	.0 (.0)
Special Education											
Percentage of students whose language arts instructor holds a:											
Regular/standard/ advanced certificate	81.3 (2.9)	81.5 (5.9)	84.7 (2.2)	77.4 (3.3)	90.7 (2.4)	85.1 (4.9)	79.6 (3,8)	91.8 (2.9)	83.8 (2.7)	88.3 (4.7)	88.1 (2.97
Probationary/ provisional/temporary certificate	10.6 (2.3)	13.4 (5.1)	10.6 (1.9)	16.7 (3.0)	5.8 (1.9)	5.2 (3.0)	8.9 (2.7)	5.9 (2.5)	10.4 (2.3)	6.8 (3.7)	9.6 (2.5)
Emergency certificate	3.7 (1.4)	4.3 (3.1)	2.9 (1.0)	2.8 (1.3)	1.0 (0.8)	6.0 (3.3)	7.2 (2.4)	0.6 (0.8)	3.5 (1.4)	3.5 (2.7)	1.0 (0.8)
Sample size											
General education	343	478	94	202	276	303	323	269	197	78	52
Special education	352	88	517	308	423	202	269	227	458	145	367

Standard errors are in parentheses.

- In special education settings, students in ungraded classrooms are more likely than their middle school peers to receive instruction from a teacher with a standard certificate; 91% of the former compared with 80% of the latter have teachers with standard certificates.

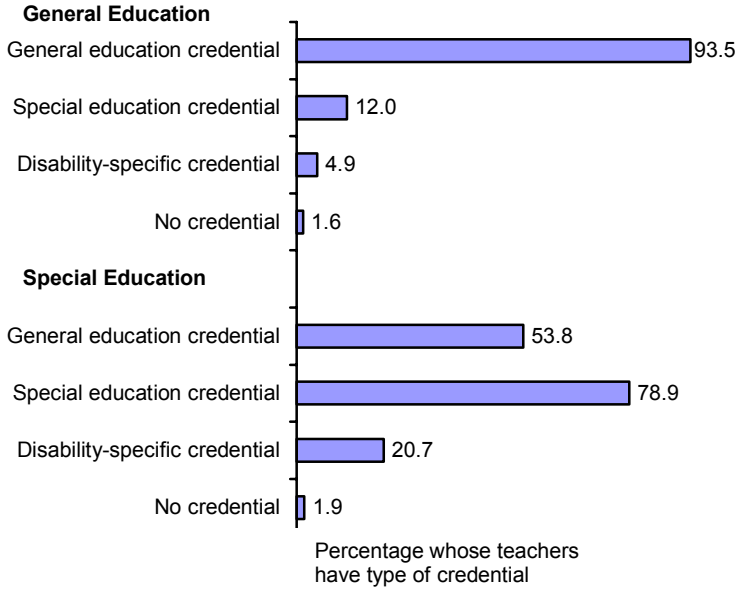
Teacher Certification: Demographic Differences

- In special education settings, students from lower income families are more likely than students from higher income families to be taught by an instructor with a provisional, probationary, or temporary certificate (15% vs. 7%). In addition, African American students are less likely than white students to be taught by teachers holding regular certificates (76% vs. 85%), and students in urban communities are less likely than their peers in suburban communities to be instructed by teachers holding regular certificates (77% vs. 85%).

Type of Certificate Held by Language Arts Teachers of Students with Disabilities

- Teachers of students with disabilities largely have teaching certificates consistent with the settings in which they provide language arts instruction (Exhibit 4-12). Teachers of students in general education settings tend to have general education certificates, whereas teachers in special education classrooms tend to have credentials to teach special education.

Exhibit 4-12
Type of Certificate* Held by Language Arts Teachers of Students with Disabilities



* A teacher may hold more than one type of credential.

- Approximately 94% of students in general education settings have teachers of language arts with a general education credential, approximately 12% have teachers with a special education credential, and about 5% have teachers with a disability-specific credential.
- Consistent with SPeNSE (Carlson et al., 2002), more than half of teachers who provide language arts instruction in special education settings have general education credentials, with umbrella special education certifications more common than certificates designed for teaching students with specific disabilities.
- Fewer than 2% of students with disabilities in either general education or special education settings have language arts teachers who are uncertified.

Type of Teacher Certificate: Disability Category Differences

- In general education settings, regardless of disability category, about nine in 10 students with disabilities in general education language arts classes are taught by teachers who have general education teaching certification (Exhibit 4-13). More variation occurs in the percentages of students whose language arts teacher has a special education credential. Between 6% and 25% of students with most disabilities have teachers with such credentials; fewer than 10% of students with speech or visual impairments have teachers with such credentials, whereas more than 20% of students with autism or multiple disabilities have teachers with such credentials.
- In special education settings, a considerable range occurs in the percentages of teachers who have general education credentials. Percentages of students whose language arts teachers have such credentials range from 43% (students with multiple disabilities or autism) to 63% (students with speech or visual impairments).
- Between 50% and 90% of students with most types of disabilities in special education settings have language arts teachers with special education credentials, and between 18% and 46% have language arts teachers with credentials that are specific to teaching students with a particular disability.

Exhibit 4-13
Type of Certificate Held by Language Arts Teachers, by Disability Category and Instructional Setting

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Disturbance	Hearing Impair-ment	Visual Impair-ment	Orthopedic Impairment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabili-ties
General Education											
Percentage of students whose language arts instructor holds a:											
General education credential	90.6 (2.2)	95.8 (1.3)	92.6 (3.6)	91.1 (2.7)	94.8 (2.1)	96.5 (1.6)	93.0 (2.2)	93.9 (2.3)	90.2 (3.7)	90.6 (5.6)	89.1 (8.2)
Special education credential	18.7 (3.0)	5.8 (1.5)	17.6 (5.2)	19.8 (3.8)	15.9 (3.5)	7.3 (2.3)	12.1 (2.8)	16.0 (3.5)	21.7 (5.1)	19.2 (7.6)	25.4 (11.4)
Disability-specific credential	6.6 (1.9)	3.5 (1.1)	6.4 (3.4)	4.1 (1.9)	7.8 (2.5)	5.4 (2.0)	7.4 (2.3)	6.6 (2.4)	5.2 (2.7)	5.0 (4.2)	6.4 (6.4)
Special Education											
Percentage of students whose language arts instructor holds a:											
General education credential	55.0 (3.7)	62.9 (7.3)	48.6 (3.1)	54.6 (4.0)	48.2 (4.0)	63.1 (6.5)	55.3 (4.6)	48.6 (5.2)	42.9 (3.6)	55.8 (7.2)	42.5 (4.1)
Special education credential	79.2 (3.0)	79.9 (6.0)	80.7 (2.4)	72.5 (3.5)	50.0 (4.0)	70.5 (6.2)	81.1 (3.7)	78.2 (4.3)	81.5 (2.8)	82.9 (5.5)	89.9 (2.5)
Disability-specific credential	17.8 (2.9)	21.2 (6.2)	24.1 (2.6)	27.1 (3.5)	45.7 (4.0)	36.5 (6.5)	19.3 (3.7)	23.3 (4.4)	17.8 (2.8)	17.7 (5.5)	13.2 (2.8)
Sample size											
General education	343	488	98	203	279	305	325	270	200	78	51
Special education	356	88	519	313	434	205	274	227	471	146	377

Standard errors are in parentheses.

- Students with autism or multiple disabilities in special education settings are the least likely to have language arts teachers who held general education certificates (43%) and are among the most likely to have language arts teachers with special education certificates (82% and 89%, respectively).
- Students with hearing impairments in special education settings are the least likely to have language arts teachers with a blanket special education credential (50%) and the most likely to have language arts teachers with a disability-specific certificate (46%).

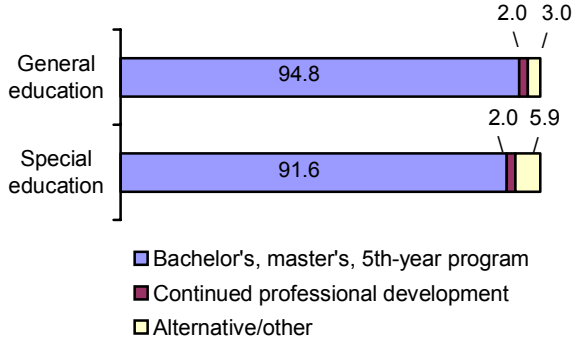
Type of Teacher Certificate: Demographic Differences

- The only demographic differences in the types of teachers' certificates concern race/ethnicity.
- In general education settings, African-American students with disabilities are less likely than white students to have teachers with general education credentials (45% vs. 57%).
- In special education settings, Hispanic students are less likely than white students to have teachers with special education credentials (fewer than 1% vs. 6%).

Teacher Preparation Programs

- Consistent with national estimates, the vast majority of students with disabilities have teachers who received their certificates through a bachelor's, master's, or fifth-year program, regardless of setting and with no meaningful differences across disability categories (Exhibit 4-14). Only 5% of students with disabilities in general education settings and 8% in special education settings have language arts teachers who received their preparation through alternative or continuing professional development programs.

Exhibit 4-14
Type of Preparation Program of Language Arts Teachers of Students with Disabilities

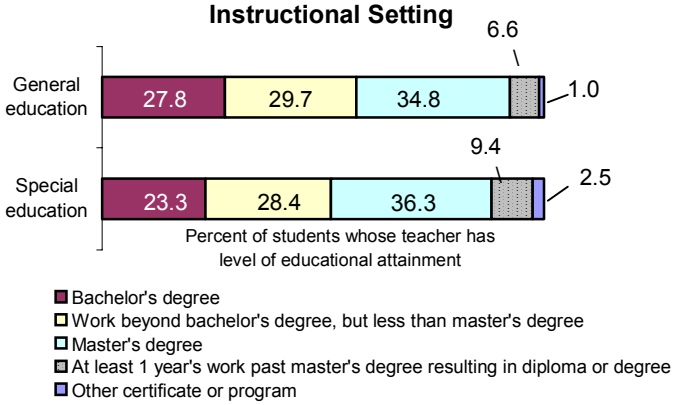


- Among students with disabilities in general education settings, regardless of disability category, at least 93% have language arts teachers who received their degree through a bachelor's, master's, or fifth-year program.
- Among students with disabilities in special education settings, between 89% and 98% of students with most types of disabilities have teachers who received their degree through a bachelor's, master's, or fifth-year program. The exception is students with traumatic brain injury, only 84% of whom have language arts teachers who received their degrees through such programs; 16% of these students have teachers who received their degrees through alternative or continuing professional development programs.
- There are no grade-level differences in teacher preparation programs.

Teacher's Education

- Regardless of setting, more than 90% of students with disabilities have language arts teachers who earned their certificate or license through bachelor's, master's degrees or fifth-year programs; 3% received their certificates through alternative programs such as "fast-track programs" that do not require education degrees but allow certification based on other credentials; and 2% received their certificates through continuing professional development.
- Regardless of educational setting, the most common educational level among students' language arts teachers is a master's degree, with bachelor's degrees and fifth-year programs somewhat less common, and degrees beyond the master's degree much less common.
- In general education settings, there are few differences in the level of teachers' educational attainment across disability categories (Exhibit 4-16). One exception is that teachers of students with multiple disabilities are more likely than teachers of several other groups to have attained a master's degree or higher (e.g., 66% vs. 29% for students with orthopedic impairments).

Exhibit 4-15
Educational Attainment of Language Arts Teachers of Students with Disabilties, by Instructional Setting



- In special education settings, between 43% and 48% of students with most types of disabilities have teachers who have at least a master's degree. Exceptions are students with orthopedic impairments, 40% of whom have teachers with this level of educational attainment, and students with speech impairments or hearing impairments, more than 55% of whom have teachers with this level of educational attainment.
- There are no meaningful differences among demographic groups in the educational levels of their teachers.

Exhibit 4-16
Educational Attainment of Language Arts Teachers, by Instructional Setting and Disability Category

	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Disturbance	Hearing Impair-ment	Visual Impair-ment	Orthopedic Impairment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabili-ties
Percentage of students whose language arts instructors hold a master's degree or higher in:											
General education	41.6	40.4	45.9	41.6	46.0	43.9	38.7	45.7	46.6	34.9	65.5
	(3.7)	(3.1)	(6.9)	(4.7)	(4.7)	(4.5)	(4.2)	(4.7)	(6.2)	(9.1)	(12.5)
Special education	43.7	56.4	43.1	44.5	56.8	48.2	40.0	43.7	45.9	48.1	52.5
	(3.7)	(7.5)	(3.0)	(3.9)	(4.0)	(6.8)	(4.5)	(5.2)	(3.6)	(7.3)	(4.2)
Sample size											
General education	343	488	98	203	279	305	325	270	200	78	51
Special education	356	88	519	313	434	205	274	227	471	146	377

Standard errors are in parentheses.

Summary

General education classes are larger than special education classes. They average 23 students, including an average of three who receive special education services. This contrasts with an average class size of 10 for special education classes. Most teachers in general education classes have a general education certificate, although almost one in five students with disabilities who receive their language arts instruction in general education classrooms also have a special education teacher in their classrooms. Teachers in general education classes are more likely than their peers in special education classes to have regular, standard, or advanced certificates. Students with disabilities in general education classes are less than half as likely as students in special education classes to have classroom aides assisting their teachers.

Almost three-fourths of the students in general education classes are rated by teachers as having at least average reading ability; in contrast, 90% of students in special education classes are rated as below-average readers.

Differences among various groups of students are notable, even when they share the same instructional setting. For example, among students who receive

language arts instruction in special education settings, students with mental retardation or multiple disabilities are in classes with more students with very poor reading abilities, whereas students with speech impairments, learning disabilities, or emotional disturbance who share a special education placement are in classes with fewer very poor readers. Among students who take their language arts in special education settings, those with speech or hearing impairments are more likely than many other groups of students to have teachers with at least a master's degree.

Grade-level differences are apparent in several aspects of classrooms. Among students for whom language arts instruction is in general education settings, middle-school-age students are in larger classes than younger students. Although they are more likely to have special education teachers in the general education classrooms, they are less likely to have classroom aides. They also are less likely to have teachers with standard certificates. In addition, their reading abilities are more likely to be rated by their teachers as below average.

Among students whose language arts is delivered in special education settings, students in lower grades have fewer students in their classrooms and are more likely to have a paid staff member besides the teacher in the classroom. Students in ungraded classrooms are the most likely of all students to have a paid staff member other than the teacher in the classroom and the most likely to be in classrooms where the average reading ability level is much below average.

Demographic differences also occur. For example, in general education classes, students with disabilities from upper-income households tend to be in larger classes than their lower-income peers, whereas in general education classes, the reverse is true. Nonetheless, in both settings, classroom reading ability levels tend to be lowest in the classrooms of students from low-income families.

Few differences emerge among the racial/ethnic groups. However, in general education settings, compared with white students, Hispanic students are less likely to have a special education teacher in the classroom, and African-American students are more likely to be in classrooms with relatively low ability levels in reading. In special education settings, Asian/Pacific Islander students are more likely than white students to have a paid staff member other than a teacher in the classroom. In addition, these students and African-American students are more likely than white students to be in classrooms in which the preponderance of students have reading ability levels that teachers rate as much below average.

References

Achilles, C. M., & Finn, J. D. (2000, November 30-December 1). *The varieties of small classes and their outcomes.* Paper presented at the combined National Invitational Conference of the U.S. Department of Education and Temple University's Laboratory for Student Success, Washington, DC.

Barr, R. (1986). Studying classroom reading instruction. *Reading Research Quarterly, 21*(3), 231-236.

Blackorby, J. Chorost, M., Garza, N., & Guzman, A. (2004). The academic performance of elementary and middle school students with disabilities. In J. Blackorby, M. Wagner, R. Cameto, E. Davies, P. Levine, L. Newman, et al., *Engagement, Academics, Social Adjustment, and Independence: The Achievements of Elementary and Middle School Students with Disabilities.* Menlo Park, CA: SRI International.

Brownell, M. T., & Pajares, F. (1999). Teacher efficacy and perceived success in mainstreaming students with learning and behavior problems. *Teacher Education and Special Education, 22*(3), 154-164.

Carlson, E., Brauen, M., Klein, S., Schroll, K., & Willig, S. (2002). SPeNSE: Key findings. Retrieved August 15, 2003 from http://ferdig.coe.ufl.edu/spense/KeyFindings.pdf.

Darling-Hammond, L. (2000a). Reforming teacher preparation and licensing: Debating the evidence. *Teachers College Record, 102*(1), 28-56.

Darling-Hammond, L. (2000b). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives,8*(1).

Elbaum, B., Vaughn, S., Hughes, M., & Moody, S. W. (1999). Grouping practices and reading outcomes for students with disabilities. *Exceptional Children, 65*(3), 399-415.

Finn, J. D., Gerber, S. B., Achilles, C. M., & Boyd-Zaharias, J. (2001). The enduring effects of small classes. *Teachers College Record, 103*(2), 145-183.

Gersten, R., & Dimino, J. (1989). Teaching literature to at-risk students. *Educational Leadership, 46*(5), 53-57.

Harris, K. R., & Graham, S. (1996). Constructivism and students with special needs: Issues in the classroom. *Learning Disabilities Research and Practice, 11*(3), 134-137.

Slavin, R. (1990). Class size and student achievement: Is smaller better? *Contemporary Education, 62*(1), 6-12.

5. Classroom Groupings and Activities *by Jose Blackorby, Camille Marder, Renée Cameto, Anne-Marie Guzman, and Michael Chorost*

This chapter addresses the instructional strategies and activities that characterize the experiences of students with disabilities in both general and special education language arts settings. It includes a discussion of the instructional groupings that are used, ranging from whole-class to individual instruction, and a look at both general instructional activities and those that are specific to reading.

Organizing Groups to Meet Students' Needs

Most American classrooms have a single teacher and a relatively large group of students, with the ratio of students to teachers sometimes exceeding 30 to 1. Classes also are increasingly heterogeneous with respect to students' culture, ethnicity, and English language proficiency (Carnine, Miller, et al., 1994; Harris et al., 1998; Kameenui & Carnine, 1998; McLaughlin et al., 2001; Vaughn et al., 1997). Students with disabilities contribute to the diversity in classrooms and to the range of student needs that must be met.

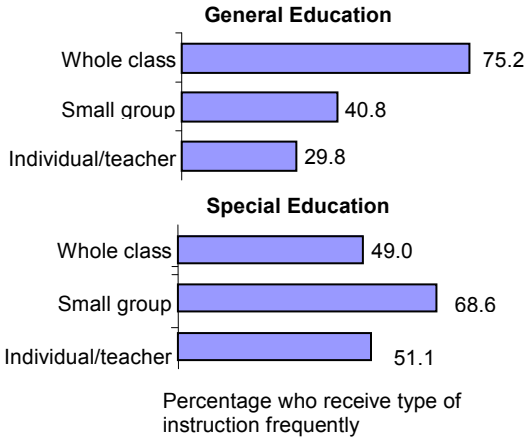
Considerable research suggests that lower student-teacher ratios help meet student needs because they make specific types of instruction, assessment, presentation, communication, and individualization more feasible than do larger ratios (Achilles & Finn, 2000; Achilles, Finn & Bain, 1998; Finn, 1999; Gersten & Dimino, 2001; Slavin, 1990). Therefore, it is not surprising that adapting the size of instructional groups is a common strategy that teachers use to meet students' needs. Many promising research-based practices, such as direct instruction, cooperative learning, peer tutoring, and strategic instruction, differ in focus or in the roles that students play, but they all reduce the size of the instructional group in one way or another (Carnine, Silbert, & Kameenui, 1997; Elbaum et al., 1999; Fuchs et al., 1997; Gersten & Carnine, 1986; Gersten & Dimino, 1990; Klingner & Vaughn, 1998; Maheady et al., 1996; O'Connor & Jenkins, 1995; Slavin, 1996; Vaughn et al., 1997.).

Therefore, it is important that SEELS has measured the types of instructional groupings that students with disabilities receive in the context of language arts instruction. Language arts teachers were asked to indicate the frequency with which the students with disabilities about whom they were reporting receive whole-class instruction, small-group instruction, and individual instruction from the teacher. The percentages of students with disabilities who receive instruction in each format often, as reported by teachers, are reported in this chapter.

Instructional Groupings by Instructional Setting

Students with disabilities receive instruction in a variety of groupings, which vary by instructional setting (Exhibit 5-1):

Exhibit 5-1
Instructional Groupings of Students with Disabilities in Language Arts Classes, by Instructional Setting



- In general education language arts classes, whole-class instruction is more common than small-group instruction, which, in turn, is more common than individual instruction. Three-fourths of students with disabilities in these classes receive whole-class instruction frequently, whereas 41% receive small-group instruction frequently, and 30% receive individual instruction from a teacher frequently.
- In special education language arts classes, small-group instruction is more common than whole-class instruction or individual instruction. Approximately two-thirds of students in special education settings receive small-group instruction frequently, whereas approximately half receive whole-class instruction or individual instruction from a teacher frequently.

Instructional Groupings: Disability Category Differences

Although smaller groupings could be beneficial for students across the disability spectrum, the use of different instructional groupings varies considerably by disability category.

- In general education language arts classes, students in all disability categories are more likely to receive whole-class instruction than small-group or -individual instruction from a teacher. Between 64% and 81% of students in most disability categories receive whole-class instruction frequently, whereas between 28% and 43% of students in most disability categories receive small-group instruction frequently, and between 28% and 39% of students in most disability categories receive individual instruction frequently.

Exhibit 5-2
Instructional Groupings in Language Arts Classes, by Disability Category and Instructional Setting

Percentage whose language arts instruction frequently involves:	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabili-ties
General education											
Whole-class instruction	73.6	77.2	63.5	72.1	71.1	69.4	74.0	80.5	64.4	65.0	64.8
	(3.4)	(2.6)	(6.6)	(4.3)	(4.4)	(4.2)	(3.8)	(3.8)	(6.0)	(9.2)	(12.4)
Small-group instruction	40.1	43.2	42.6	34.6	33.5	35.7	39.5	27.8	36.0	39.6	46.1
	(3.8)	(3.1)	(6.8)	(4.6)	(4.5)	(4.4)	(4.3)	(4.3)	(6.0)	(9.3)	(12.9)
Individual instruction from teacher	34.1	25.0	39.4	32.8	29.3	27.8	34.5	32.2	36.5	35.5	53.7
	(3.6)	(2.7)	(6.7)	(4.5)	(4.3)	(4.1)	(4.1)	(4.4)	(5.8)	(9.2)	(12.8)
Special education											
Whole-class instruction	55.7	43.9	39.4	49.5	53.5	38.1	49.1	41.9	25.8	46.7	40.3
	(3.7)	(7.7)	(3.0)	(4.0)	(4.0)	(6.6)	(4.7)	(5.2)	(3.2)	(7.2)	(4.2)
Small-group instruction	68.9	78.5	71.3	59.9	59.1	54.3	68.4	75.0	52.3	71.1	60.7
	(3.5)	(6.3)	(2.8)	(3.9)	(3.9)	(6.8)	(4.3)	(4.6)	(3.6)	(6.5)	(4.1)
Individual instruction from teacher	43.0	60.8	62.2	53.9	47.5	65.5	56.5	56.0	73.1	51.6	54.0
	(3.7)	(7.4)	(3.0)	(4.0)	(4.0)	(6.4)	(4.7)	(5.2)	(3.2)	(7.2)	(4.2)
Sample size	690	566	619	512	709	505	600	490	667	224	415

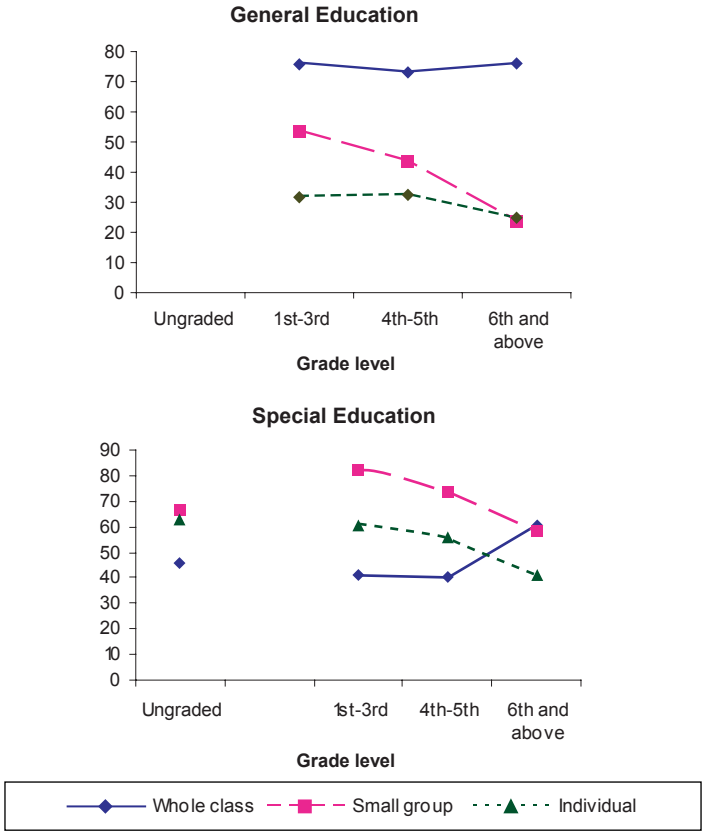
Standard errors are in parentheses.

- In general education language arts classes, students with speech impairments are among the most likely to receive whole-class instruction and are the least likely to receive individual instruction from a teacher. Students with other health impairments are the most likely to receive whole-class instruction and the least likely to receive small-group instruction, and students with multiple disabilities are the most likely to receive individual instruction.
- In special education settings, students in most disability categories are less likely to receive whole-class instruction than small-group instruction or individual instruction from a teacher. Except for students with autism, percentages of students who frequently receive whole-class instruction range from 38% (students with visual impairment) to 56% (students with learning disabilities).
- In special education settings, small group instruction is at least as common as individual instruction for students in all disability categories except autism or visual impairment, with the percentages of students who frequently receive small-group instruction ranging from 59% (students with hearing impairments) to 79% (students with speech impairments) and the percentages of students who frequently receive individual instruction ranging from 43% (students with learning disabilities) to 62% (students with mental retardation).
- In special education settings, students with autism or visual impairments are the most likely to receive individual instruction from a teacher frequently and among the least likely to receive small-group instruction or whole-class instruction frequently.

Instructional Groupings: Grade Level Differences

The organization of classrooms and schools, the complexity of material, and instructional approaches change dramatically as students move from elementary to middle school and from middle school to high school. Individual intact classes give way to variable class schedules. Skill acquisition changes to skill application and content knowledge mastery. SEELS data demonstrate these variations in the use of instructional groupings in language arts classes across the elementary and middle school grade levels (Exhibit 5-3).

Exhibit 5-3
Instructional Groupings of Students with Disabilities in Language Arts Classes, by Instructional Setting and Grade Level



- In general education settings, whole-class instruction is the most commonly used grouping, regardless of grade level. In the early grades, small-group instruction is more common than individual instruction from a teacher; however, its use declines over the grades, so that in middle school, both types of groupings are about equally common.
- In special education settings, small-group instruction and individual instruction from a teacher are more common than whole-class instruction through fifth grade. In sixth grade and higher, whole-class instruction and small-group instruction are about equally common.

- In ungraded classes in special education settings, small-group instruction and individual instruction are used with about the same frequency, and both are more common than whole-class instruction.

Instructional Groupings: Demographic Differences

The groupings used to instruct students with disabilities differ somewhat with students' household income and race/ethnicity (Exhibit 5-4).

Exhibit 5-4
Instructional Groupings of Students with Disabilities in Language Arts Classes, by Household Income, Race/Ethnicity, and Instructional Setting

	Household Income			Race/Ethnicity			
Percentage whose language arts instruction frequently involves:	$25,000 and Less	$25,001 to $50,000	More than $50,000	White	African American	Hispanic	Asian/ Pacific Islander
General education							
Whole-class instruction	76.7 (3.8)	76.0 (3.7)	73.3 (3.5)	74.2 (2.1)	79.7 (4.8)	76.1 (5.5)	54.8 (20.8)
Small-group instruction	46.9 (4.5)	40.2 (4.3)	34.3 (3.7)	37.3 (2.3)	46.8 (5.9)	51.2 (6.5)	31.8 (19.4)
Individual instruction from teacher	35.3 (4.3)	37.9 (4.2)	20.8 (3.2)	26.6 (2.1)	39.1 (5.8)	34.4 (6.2)	24.4 (17.9)
Special education							
Whole-class instruction	51.0 (3.8)	49.5 (4.8)	46.4 (5.3)	47.3 (2.7)	48.3 (4.4)	57.5 (6.5)	33.1 (19.9)
Small-group instruction	68.1 (3.6)	67.8 (4.5)	62.3 (5.1)	68.7 (2.5)	68.0 (4.1)	72.5 (5.8)	80.6 (16.7)
Individual instruction from teacher	55.7 (3.8)	52.6 (4.7)	40.0 (5.1)	49.4 (2.7)	56.3 (4.3)	49.4 (6.5)	41.0 (20.8)
Sample size	1,625	1,338	1,594	3,953	1,172	710	108

Standard errors are in parentheses.

- In each instructional setting, whole-class instruction is about equally common, regardless of students' household income or racial/ethnic group.
- In each instructional setting, students from households in the lowest and middle income groups have similar experiences with regard to instructional groupings.
- In general education settings, students with disabilities in the highest income group are less likely than students from the lowest income group to receive small-group instruction or individual instruction frequently.
- In general education settings, African American students do not differ from students of other races/ethnicities in terms of the frequency with which they receive whole-class or small-group instruction; however,

they are more likely than white students to receive individual instruction frequently. In contrast, in these same settings, Hispanic students are more likely than white students to have small-group instruction frequently.

- There are no differences in instructional groupings for students of the various races/ethnicities in special education settings.

General Instructional Activities In Language Arts Classes

Instruction in a typical language arts class in American elementary or middle schools usually includes a variety of activities, ranging from teachers' presentations of new skills or material to small-group or independent work (National Center for Education Statistics, 1999). A teacher's choice among this variety of activities can reflect both the specific point in the curriculum and a strategy for how best to meet students' needs. For example, at one point in a unit, a teacher may have students answer questions and participate in class discussions, whereas at another, he or she may have students work together on presentations or projects. These activities differ in their purpose and the role that students play. Skilled teachers are able to adjust the mix of these activities to meet student needs (Gersten & Dimino, 2001; McLeskey & Waldron, 2002; Moody et al., 2000; Pressley et al., 2002; Vaughn et al, 2001).

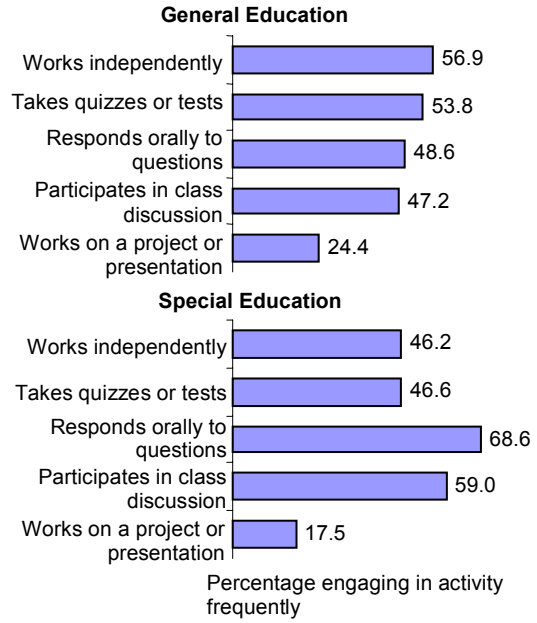
Instructional activities may vary greatly from classroom to classroom because of such factors as the subject matter being addressed, a teacher's style and preferences, students' ages and skill levels, and time of the school year. Having a student with a disability in a class also can play a role in shaping classroom activities because a teacher must consider the student's cognitive and behavioral abilities in determining what would best serve both the student and the class as a whole.

To provide a national perspective on the variety of classroom activities experienced by students with disabilities, SEELS asked teachers in the primary language arts setting of students with disabilities to rate the frequency with which those students engaged in the following: responding orally to questions, taking quizzes or tests, working independently, participating in class discussion, and working on a project or presentation.

General Instructional Activities Across Instructional Settings

Students with disabilities participate in a variety of instructional activities in language arts classes, with important differences across instructional settings (Exhibit 5-5).

Exhibit 5-5
General Instructional Activities of Students with Disabilities in Language Arts Classes, by Instructional Setting



- Compared with students with disabilities in general education classes, students in special education settings are less likely to work independently or take quizzes or tests frequently and are more likely to respond to questions or participate in class discussions frequently. Setting is not related to the frequency with which students work on projects or presentations.
- In general education settings, nearly 60% of students with disabilities frequently work independently, and approximately half take quizzes or tests, respond orally to questions, or participate in class discussions frequently. They are much less likely to work on projects or presentations; approximately one-fourth do so frequently.
- In special education settings, approximately two-thirds of students frequently respond orally to questions, 60% participate in class discussions, and 46% take quizzes or tests or work independently. Approximately 18% work on projects or presentations frequently.

General Instructional Activities: Disability Category Differences

Participation in each type of instructional activity in language arts classes not only varies by setting, but also is strongly associated with a student's disability (Exhibit 5-6).

Exhibit 5-6
General Instructional Activities in Language Arts Classes, by Disability Category and Instructional Setting

Percentage of students engaging in activity frequently in:	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabili-ties
General education											
Responding orally to questions	39.5 (3.7)	56.5 (3.1)	25.3 (6.1)	39.0 (4.7)	53.1 (4.7)	61.7 (4.4)	50.0 (4.4)	51.7 (4.8)	39.4 (6.1)	65.8 (9.3)	49.2 (13.0)
Taking quizzes or tests	54.0 (3.8)	55.6 (3.1)	32.5 (6.6)	50.2 (4.8)	43.7 (4.7)	52.9 (4.5)	50.0 (4.3)	56.6 (4.7)	35.5 (6.0)	39.9 (9.6)	30.1 (11.8)
Working independently	49.1 (3.8)	66.0 (2.9)	23.4 (6.0)	43.7 (4.7)	56.8 (4.7)	57.0 (4.5)	54.3 (4.4)	52.1 (4.8)	41.0 (6.1)	38.8 (9.7)	44.5 (12.7)
Participating in class discussion	39.1 (3.7)	55.2 (3.1)	21.8 (5.8)	32.8 (4.5)	44.8 (4.8)	58.9 (4.5)	50.7 (4.4)	47.8 (4.8)	32.2 (5.8)	54.1 (9.7)	48.9 12.8)
Working on a project or presentation	26.8 (3.4)	23.8 (2.6)	13.2 (4.7)	23.6 (4.1`)	21.6 (3.9)	28.2 (4.1)	21.9 (3.6)	22.6 (4.0)	17.0 (4.7)	26.6 (8.6)	24.1 (11.1)
Special education											
Responding orally to questions	70.7 (3.4)	75.7 (6.5)	63.9 (2.9)	68.5 (3.7)	63.2 (3.9)	67.2 (6.4)	71.9 (4.2)	69.0 (4.9)	43.5 (3.6)	70.6 (6.6)	57.7 (4.1)
Taking quizzes or tests	54.1 (3.7)	42.9 (7.7)	35.0 (2.9)	48.9 (4.0)	43.2 (4.0)	40.7 (6.7)	38.0 (4.5)	51.6 (5.3)	17.0 (2.8)	41.1 (7.2)	27.4 (3.7)
Working independently	52.8 (3.7)	37.4 (7.4)	37.7 (3.0)	51.7 (4.0)	46.9 (4.0)	34.6 (6.4)	38.2 (4.5)	43.6 (5.3)	33.9 (3.5)	36.9 (7.0)	33.5 (4.0)
Participating in class discussion	63.5 (3.6)	61.3 (7.4)	52.0 (3.1)	61.4 (3.9)	56.9 (4.0)	49.5 (6.8)	59.9 (4.6)	57.6 (5.2)	23.5 (3.1)	57.0 (7.2)	47.5 (4.2)
Working on a project or presentation	22.9 (3.1)	16.5 (5.7)	8.8 (1.7)	14.9 (2.8)	13.1 (2.7)	11.8 (4.4)	12.9 (3.1)	16.3 (3.9)	3.2 (1.3)	9.2 (4.2)	11.5 (2.7)
Sample size											
General education	342	491	97	206	280	304	328	272	199	77	52
Special education	356	86	526	312	437	205	275	223	469	147	375

Standard errors are in parentheses.

- In general education classes, participation in most types of instructional activities varies widely across the disability categories. For example, the percentages of students who frequently take quizzes or tests range from 30% (students with multiple disabilities) to 57% (students with other health impairments). There is less variation in the percentages of students who work on projects or presentations frequently, with percentages for most groups of students ranging from 17% (students with autism) to 28% (students with visual impairments).
- In special education settings, relatively little variation occurs across disability categories in the percentages of students who frequently work independently (19 percentage points across all categories, but only eight percentage points across all but the two extreme categories). Greater degrees of tailoring activities to disability differences is apparent regarding or taking quizzes or tests (a 37-point range in the percentages of students who take them frequently) and participating in class discussion (a 40-point range in the percentages of students who participate frequently).

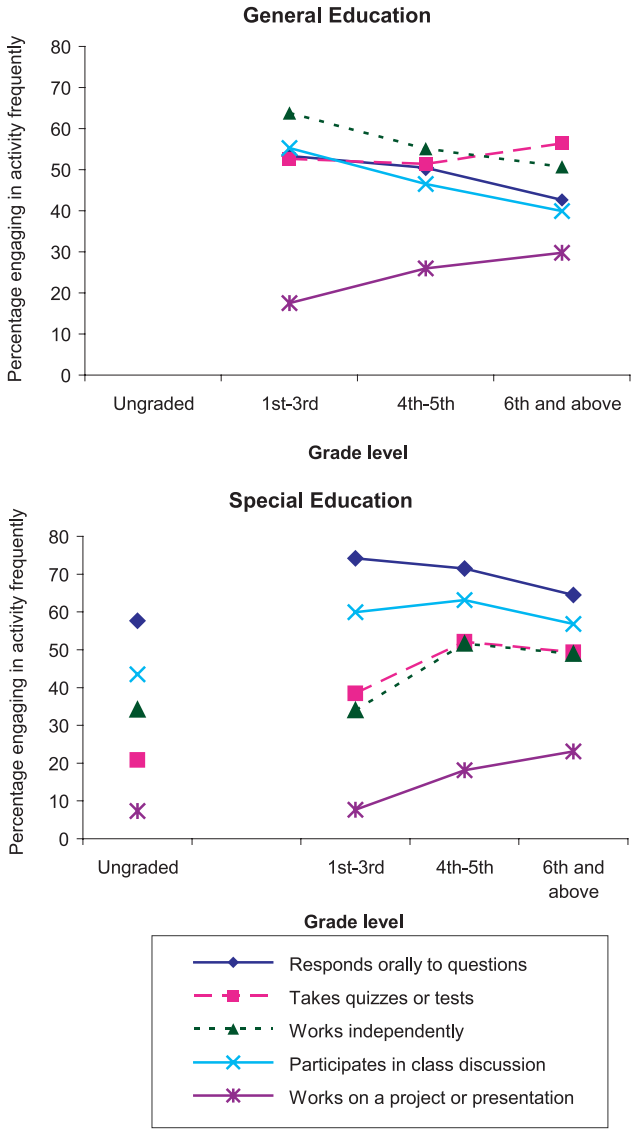
- In general education classes, students with mental retardation are the least likely group to work independently, respond orally to questions, participate in class discussions, or work on projects or presentations frequently, and they are among the least likely to take quizzes or tests frequently. In contrast, students with visual or speech impairments are among the most likely to participate in several types of instructional activities frequently.
- In special education settings, students with learning disabilities are the most likely to work independently, take quizzes or tests, participate in class discussions, or work on projects or presentations frequently. Students with speech impairments are the most likely to respond orally to questions frequently.
- In special education settings, students with autism are among the least likely to take quizzes or tests, respond orally to questions, participate in class discussions, or work on projects or presentations frequently. Students with multiple disabilities also are among the least likely to take quizzes or tests, respond orally to questions, or participate in class discussions frequently.

General Instructional Activities: Grade-Level Differences

As students move from elementary to middle school and from middle to high school, the instructional emphasis shifts from skill acquisition to mastering content knowledge, developing understanding, and applying problem-solving and synthesis skills. This shift in focus leads to changes in the types of activities in classrooms:

- Although working on projects or presentations frequently is more common at the higher grade levels, regardless of setting, it remains less common than other activities (Exhibit 5-7).

Exhibit 5-7
General Instructional Activities of Students with Disabilities in Language Arts Classes, by Instructional Setting and Grade Level



- In general education classes, students with disabilities are less likely to work independently frequently in the middle-school grades than in the early elementary grades.
- In general education language arts classes, students with disabilities are less likely to respond orally to questions or participate in class discussions frequently at the upper grade levels than at the lower grade levels.
- In both general education and special education in language arts classes, students with disabilities are more likely to work on presentations frequently in the upper grades than in the lower grades.

- In special education language arts classes, fourth and fifth graders are more likely than first through third graders to take quizzes and tests frequently, but there is little difference in these activities after fifth grade.
- Students in ungraded classes are the least likely to participate in class discussions, respond orally to questions, or take quizzes or tests frequently. Their frequency of working independently or working on projects or presentations approximates those of first- through third-graders.

General Instructional Activities: Demographic Differences

Family socioeconomic status and racial/ethnic group membership play significant roles in the educational experiences of students, both with and without disabilities. Successful teachers and schools consider these types of differences when developing appropriate educational plans for students. SEELS findings demonstrate a number of differences in students' participation in general instructional activities across these dimensions (Exhibit 5-8):

Exhibit 5-8
General Instructional Activities of Students with Disabilities in Language Arts Classes, by Household Income, Race/Ethnicity, and Instructional Setting

	Household Income			Race/Ethnicity			
Percentage engaging in activity frequently	$25,000 and less	$25,001 to $50,000	More than $50,000	White	African American	Hispanic	Asian
General education							
Responding orally to questions	46.8 (4.6)	44.2 (4.3)	58.0 (3.8)	50.1 (2.4)	45.3 (5.9)	46.0 (6.4)	13.6 (14.3)
Taking quizzes or tests	50.6 (4.6)	54.7 (4.3)	54.7 (3.9)	51.5 (2.4)	64.0 (5.7)	58.7 (6.4)	10.9 (13.0)
Working independently	53.7 (4.6)	58.2 (4.3)	59.1 (3.8)	59.0 (2.3)	52.0 (5.9)	54.7 (6.5)	43.9 (21.1)
Participating in class discussion	41.2 (4.5)	46.3 (4.3)	57.9 (3.9)	48.9 (2.4)	41.4 (5.8)	48.7 (6.4)	17.7 (16.1)
Working on a project or presentation	21.6 (3.7)	24.9 (3.7)	32.7 (3.6)	25.3 (2.1)	20.3 (4.8)	26.2 (5.7)	25.9 (18.6)
Special education							
Responding orally to questions	62.4 (3.7)	71.0 (4.3)	74.6 (4.6)	70.2 (2.5)	66.9 (4.1)	64.6 (6.2)	69.6 (19.7)
Taking quizzes or tests	43.0 (3.8)	47.9 (4.8)	45.9 (5.3)	44.9 (2.7)	49.7 (4.3)	50.8 (6.5)	31.5 (19.6)
Working independently	42.0 (3.8)	51.7 (4.8)	43.4 (5.2)	47.2 (2.7)	44.9 (4.3)	44.2 (6.4)	24.2 (18.2)
Participating in class discussion	52.8 (3.8)	63.4 (4.6)	59.2 (5.2)	59.0 (2.7)	59.8 (4.3)	59.5 (6.4)	26.9 (18.9)
Working on a project or presentation	15.0 (2.7)	18.9 (3.7)	18.4 (4.1)	13.4 (2.8)	19.0 (3.4)	33.6 (6.1)	8.2 (11.6)
Sample size							
General education	543	591	886	1,996	338	258	48
Special education	1,083	757	733	2,014	844	459	60

Standard errors are in parentheses.

- In general education classes, students from households in the highest income group are more likely than students in the lowest income group to take part in class discussions or to work on projects or presentations frequently.
- In special education settings, students from households in the highest income group are more likely than students in the lowest income group to respond to oral questions frequently.
- In neither setting is household income associated with students' frequency of taking quizzes or tests or working independently.
- In general education settings, African-American students are more likely than white students to take quizzes or tests frequently. In contrast, Asian/Pacific Islander students are less likely than students of other racial/ethnic groups to take quizzes or tests frequently.
- In special education settings, Hispanic students are more likely than peers of other racial/ethnic groups to work on projects or presentations.

Reading/Language Arts Activities In Language Arts Classrooms

Reading and language arts are arguably the most central academic skills that students must master through their school years (Barr & Johnson, 1991; Gersten, et al., 1998; Kameenui & Carnine, 1998; O'Connor & Jenkins, 1997). Such skills are critical for success and the ultimate completion of school, for functioning in the community, and increasingly for success in the workplace. Not surprisingly, then, the vast majority of interventions to improve academic achievement focus on reading and language arts.

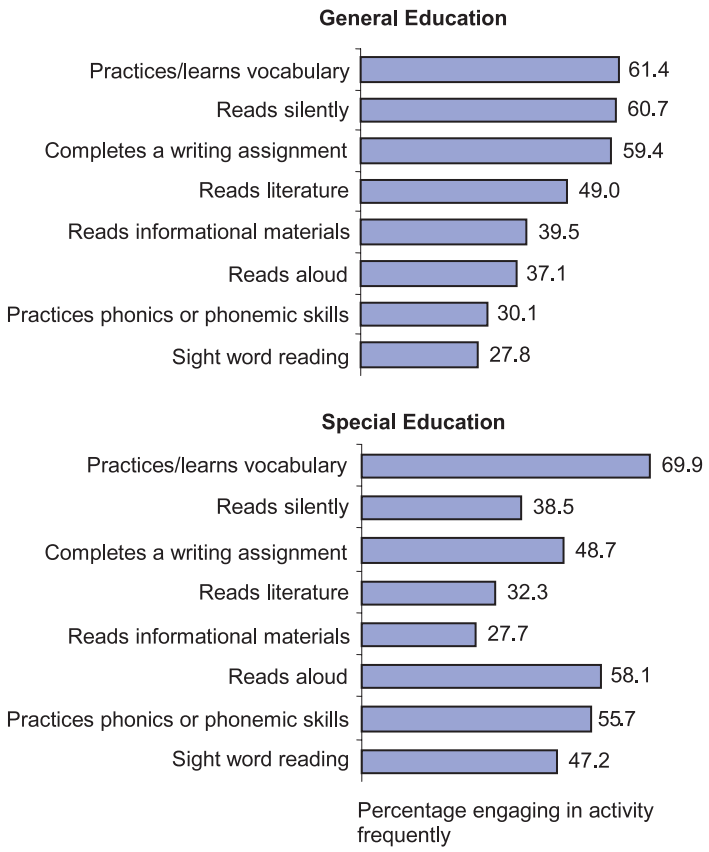
Reading and language arts have generated considerable policy attention at both the state and federal levels. For example, NCLB directs all schools to ensure that students attain adequate yearly progress in reading. Continued research and discussion also have attempted to illuminate how children learn to read and how instruction is best organized to facilitate that learning. Arguments for and against particular methods span a continuum; ranging from explicit skills instruction to meaning-based instruction (Carnine, 1997; Kameenui & Carnine, 1998; Lyon, 1998; O'Connor, 1999; Pressley et al., 2002;). Evidence, collected over two decades, indicates that too many Americans of all ages lack basic reading "decoding" and comprehension skills. Indeed, the challenge of learning to read results in referral to special education for many students with disabilities (Elliott & Thurlow, 2000; Fuchs & Fuchs, 1986; Gersten & Dimino, 1990; Klingner et al., 1998; Koretz, 1988; Marston, 1988; O'Connor, Jenkins, et al., 1993; Thurlow et al., 1998; Ysseldyke et al., 1998). SEELS provides the first national perspective on the types of reading and language arts activities that

students with disabilities receive in elementary and middle school. Primary language arts teachers rated the frequency that students with disabilities in their classes participate in a range of reading and language arts activities, including reading aloud, reading silently, completing writing assignments, reading literature or informational materials, practicing phonics or phonemic skills, practicing vocabulary, and sight word reading.

Participation in Reading/Language Arts Activities Across Instructional Settings

Students with disabilities participate in a variety of reading and language arts activities, whose emphasis varies considerably by instructional placement (Exhibit 5-9).

Exhibit 5-9
Reading/Language Arts Activities of Students with Disabilities, by Instructional Setting



- In language arts classes in both general and special education settings, the percentages of students who participate in each type of reading activity frequently vary considerably.

- In general education language arts classes, the most frequent reading activities for students with disabilities are learning or practicing vocabulary, reading silently, or completing writing assignments; approximately 60% of students with disabilities engage in these activities frequently. Somewhat less frequent are reading literature, followed by reading informational materials or reading aloud. The least common activities are phonics or phonemic skills practice and sight word reading; approximately 30% of students engage in these activities frequently.
- In special education language arts classes, learning and practicing vocabulary words are the most common reading activities, with approximately 70% of students engaging in this activity frequently. Reading aloud and practicing phonics or phonemic skills are somewhat less common, yet more than half of the students in these settings engage in these activities frequently. Completing writing assignments and sight word reading are still less frequent, followed by reading silently. Least common are reading literature or reading informational materials, with approximately 30% of students engaging in these activities frequently.

Reading/Language Arts Activities: Disability Category Differences

Students' identified abilities and disabilities shape their needs and the activities through which instruction attempts to meet them. For some students, access to alternative content and sensory modalities is most important. For others, the cognitive process itself that is most affected and requires specialized instruction. Students in different disability categories participate in a diverse range of reading and language arts activities (Exhibit 5-10):

- In general education classes, practicing vocabulary is one of the most frequent language arts activities for students in all disability categories. Reading silently and completing writing assignments are also are among the most common activities for students in most disability categories. Sight word reading, practicing phonics or phonemic skills, and reading aloud are the least frequent activities for students with in most disability categories.

Exhibit 5-10
Reading/Language Arts Activities, by Disability Category and Instructional Setting

Percentage engaging in activity frequently:	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabili-ties
General education											
Reading aloud	25.8	46.8	21.6	29.0	37.4	36.4	37.7	31.0	42.3	39.2	36.7
	(3.4)	(3.1)	(5.7)	(4.3)	(4.6)	(4.4)	(4.2)	(4.4)	(6.1)	(9.5)	(12.4)
Reading silently	50.9	70.9	28.7	51.6	55.0	62.8	63.1	51.7	51.4	41.0	58.5
	(3.8)	(2.8)	(6.3)	(4.8)	(4.7)	(4.4)	(4.2)	(4.8)	(6.2)	(9.5)	(12.6)
Completing writing assignment	55.2	66.2	28.6	41.0	64.7	59.9	57.3	55.5	34.6	59.5	53.6
	(3.8)	(3.0)	(6.3)	(4.7)	(4.6)	(4.4)	(4.3)	(4.8)	(6.0)	(9.5)	(12.9)
Reading literature	48.1	51.3	23.7	44.8	53.7	52.5	51.5	45.8	53.7	43.2	40.4
	(3.8)	(3.1)	(5.9)	(4.8)	(4.7)	(4.5)	(4.4)	(4.8)	(6.2)	(9.7)	(12.6)
Reading informational materials	36.6	44.0	21.1	26.4	47.3	45.4	36.1	33.8	40.1	21.1	28.1
	(3.7)	(3.1)	(5.7)	(4.2)	(4.8)	(4.5)	(4.2)	(4.5)	(6.1)	(8.0)	(11.5)
Practicing phonics or phonemic skills	22.6	36.5	38.1	19.6	26.0	30.1	35.9	17.8	28.8	22.0	55.6
	(3.2)	(3.0)	(6.8)	(3.8)	(4.2)	(4.2)	(4.2)	(3.7)	(5.6)	(8.2)	(4.5)
Practicing vocabulary	59.0	64.8	45.5	52.0	62.0	61.3	62.5	61.0	58.0	43.5	59.1
	(3.8)	(3.0)	(7.0)	(4.8)	(4.6)	(4.4)	(4.2)	(4.7)	(6.2)	(9.6)	(12.6)
Sight word reading	20.9	33.7	35.2	18.0	28.9	23.2	33.0	18.9	32.9	19.4	23.4
	(3.1)	(3.0)	(6.7)	(3.7)	(4.3)	(3.8)	(4.1)	(3.8)	(5.9)	(7.8)	(10.9)
Special education											
Reading aloud	59.9	71.6	49.8	62.2	51.6	46.8	49.3	54.3	37.3	54.7	44.6
	(3.7)	(6.9)	(3.1)	(3.9)	(4.0)	(6.8)	(4.7)	(5.3)	(3.5)	(7.2)	(4.2)
Reading silently	43.8	35.7	27.4	48.8	43.1	22.2	34.2	35.2	20.9	34.8	26.0
	(3.7)	(7.3)	(2.7)	(4.0)	(4.0)	(5.7)	(4.4)	(5.0)	(3.0)	(6.9)	(3.7)
Completing writing assignment	54.5	58.1	35.9	47.4	43.0	34.5	37.0	41.7	26.6	47.0	35.2
	(3.7)	(7.6)	(2.9)	(4.0)	(4.0)	(6.5)	(4.5)	(5.2)	(3.2)	(7.2)	(4.0)
Reading literature	37.2	39.5	18.1	33.5	25.8	21.4	27.6	28.3	16.2	26.7	28.3
	(3.6)	(7.5)	(2.4)	(3.8)	(3.5)	(5.6)	(4.1)	(4.7)	(2.7)	(6.4)	(3.8)
Reading informational materials	32.6	26.1	17.1	33.5	22.8	18.3	22.2	25.3	14.8	14.0	23.3
	(3.5)	(6.7)	(2.3)	(3.7)	(3.4)	(5.2)	(3.9)	(4.6)	(2.6)	(5.1)	(3.6)
Practicing phonics or phonemic skills	53.5	72.4	62.0	51.9	31.7	50.1	54.0	42.2	39.5	51.6	48.3
	(3.7)	(6.9)	(3.0)	(4.0)	(3.7)	(6.9)	(4.6)	(5.2)	(3.6)	(7.2)	(4.2)
Practicing vocabulary	69.1	76.2	73.1	72.0	80.4	61.1	62.7	57.9	57.1	70.0	63.7
	(3.5)	(6.5)	(2.7)	(3.6)	(3.2)	(6.6)	(4.5)	(5.2)	(3.6)	(6.7)	(4.0)
Sight word reading	41.4	49.2	61.5	49.6	57.2	42.6	46.9	42.8	44.3	53.4	47.2
	(3.7)	(7.6)	(3.0)	(4.0)	(4.0)	(6.8)	(4.6)	(5.2)	(3.6)	(7.2)	(4.2)
Sample size											
General education	338	484	97	204	278	298	316	266	195	77	52
Special education	354	86	521	311	432	201	271	222	471	147	371

Standard errors are in parentheses.

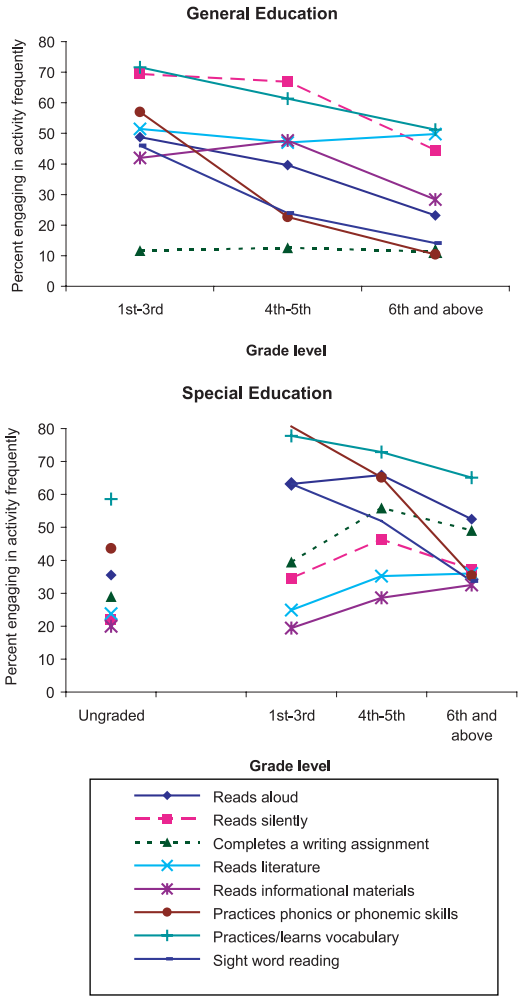
- In general education settings, the patterns of students with mental retardation or multiple disabilities differ from those for students in other disability categories. Practicing phonics or phonemic skills is among the most common activities for these students. In addition, students with mental retardation differ from all other groups in that they are the least likely to engage frequently in five of the eight activities investigated.

- In special education settings, practicing vocabulary is the most common activity, and reading informational materials is the least common activity for students in every disability category. Completing writing assignments and practicing phonics also are among the most common activities for students in most disability categories, whereas reading literature is among the least common.
- In special education settings, students with autism are among the least likely to engage frequently in all eight reading/language arts activities investigated, whereas students with speech impairments are among the most likely to engage frequently in five of the eight activities.

Reading/Language Arts Activities: Grade-Level Differences

Although reading and language arts activities are core parts of the curriculum across the age range, their focus and application vary across grade levels (Exhibit 5-11):

Exhibit 5-11
Reading/Language Arts Activities of Students with Disabilities, by Instructional Setting and Grade Level



- In general education classes, steady declines with increasing grade levels are noted in the frequency of reading aloud, instruction in phonics, vocabulary activities, and sight word reading for students with disabilities. Reading informational materials and reading silently are about equally likely to be frequent activities for these students through fifth grade and then decline in the middle school grades. Students' frequency of completing writing assignments does not decline significantly across grade levels.
- In special education settings, students' likelihood of practicing phonics, practicing vocabulary, or sight word reading declines across grade levels; however, even in middle school grades, students with disabilities are much more likely to engage in these activities frequently in special education settings than in general education settings.
- In special education settings, the percentage of students who read literature or informational materials frequently increases with grade progression. In the middle school grades, students with disabilities in special education settings are still less likely than their peers in general education settings to read literature frequently, but they are about as likely to read informational materials frequently.
- In special education settings, students in ungraded classes are less likely than students in graded classes to read aloud, read silently, or complete writing assignments frequently, but they are about as likely as students in the first through third grades to read literature or informational materials, and about as likely as students in the sixth grade and above to practice phonemic skills or learn and practice vocabulary frequently.

Reading/Language Arts Activities: Demographic Differences

- In general education settings, students with disabilities from the highest income group are more likely than students from the lowest income group to complete writing assignments frequently, and they are less likely to practice phonics or phonemic skills or learn and practice vocabulary frequently.
- In special education settings, there are no significant differences in the percentages of students who engage in each type of activity frequently in regard to their household income.
- In general education settings, Asian/Pacific Islander students are less likely than their peers in other ethnic groups to read aloud, practice phonics or phonemic skills, or do sight word reading frequently. In contrast, Hispanic students are more likely than white students to do sight-word reading frequently.

- In general education settings, African-American students are more likely than white students to learn and practice vocabulary frequently.
- In special education settings, they are less likely than white students to read aloud frequently.

Exhibit 5-12
Reading/Language Arts Activities of Students with Disabilities, by Household Income, Race/Ethnicity, and Instructional Setting

	Household Income			Race/Ethnicity			
Percentage engaging in activity frequently	$25,000 and Under	$25,001 to $50,000	Over $50,000	White	African American	Hispanic	Asian
General education							
Reading aloud	35.6	36.1	40.5	38.2	32.4	39.3	5.1
	(4.4)	(4.2)	(3.8)	(2.3)	(5.6)	(6.3)	(9.2)
Reading silently	56.7	62.7	65.4	60.4	58.6	68.9	25.1
	(4.5)	(4.2)	(3.7)	(2.3)	(5.8)	(6.0)	(18.2)
Completing writing assignment	53.4	59.3	69.3	62.4	51.3	55.9	43.6
	(4.6)	(4.3)	(3.6)	(2.3)	(5.9)	(6.5)	(20.8)
Reading literature	47.6	47.2	56.3	50.1	44.6	49.2	33.9
	(4.6)	(4.3)	(3.9)	(2.4)	(5.9)	(6.5)	(19.9)
Reading informational materials	39.4	38.9	45.0	39.7	39.9	39.4	28.6
	(4.5)	(4.2)	(3.9)	(2.3)	(5.8)	(6.3)	(19.0)
Practices phonics or phonemic skills	34.7	32.9	22.7	27.9	35.5	34.2	4.2
	(4.3)	(4.1)	(3.3)	(2.1)	(5.7)	(6.1)	(8.5)
Practicing vocabulary	73.9	65.1	61.9	65.1	78.2	75.7	56.1
	(4.0)	(4.2)	(3.8)	(2.3)	(4.9)	(5.6)	(20.7)
Sight word reading	33.9	30.5	25.2	24.5	30.3	40.7	5.1
	(4.3)	(4.0)	(3.4)	(2.1)	(5.5)	(6.4)	(9.2)
Special education							
Reading aloud	49.9	63.2	59.7	62.6	51.9	53.8	60.2
	(3.8)	(4.6)	(5.1)	(2.6)	(4.3)	(6.5)	(20.7)
Reading silently	31.3	40.6	41.7	38.7	38.6	39.6	29.5
	(3.5)	(4.7)	(5.2)	(2.6)	(4.2)	(6.3)	(19.9)
Completing writing assignment	41.8	51.7	54.0	50.5	43.8	49.9	29.6
	(3.8)	(4.7)	(5.2)	(2.7)	(4.3)	(6.5)	(19.4)
Reading literature	25.4	28.3	36.2	32.2	29.4	39.1	7.0
	(3.3)	(4.3)	(5.1)	(2.5)	(4.0)	(6.4)	(10.9)
Reading informational materials	22.0	24.9	30.3	27.1	28.5	28.2	8.9
	(3.2)	(4.1)	(4.8)	(2.4)	(3.9)	(5.9)	(12.1)
Practicing phonics or phonemic skills	53.1	55.4	55.4	58.4	52.8	50.5	35.1
	(3.8)	(4.8)	(5.2)	(2.7)	(4.3)	(6.5)	(20.2)
Practicing vocabulary	68.9	68.1	70.1	68.6	73.0	71.9	81.7
	(3.6)	(4.4)	(4.8)	(2.5)	(3.9)	(5.8)	(16.3)
Sight word reading	43.9	47.0	42.8	47.2	52.7	40.6	36.8
	(3.8)	(4.8)	(5.2)	(2.7)	(4.3)	(6.4)	(20.4)
Sample size							
General education	543	591	886	1,996	338	258	48
Special education	1,083	757	733	2,014	844	459	60

Standard errors are in parentheses.

Summary

Students with disabilities experience a range of instructional groupings and classroom activities in their primary language arts instruction, across settings, disability categories, grade levels, and demographic groups. However, important differences occur.

Students with disabilities in general education language arts classes experience predominantly whole-class instruction and are more likely than their peers in special education settings frequently to work independently, take quizzes or tests, read silently, read literature or informational materials, and complete writing assignments. In contrast, special education settings provide opportunities for greater teacher-student interactions. Students in those settings are more likely to have small-group or individual instruction, and to take part in class discussions and respond orally to teachers' questions frequently. Their instruction also is more likely to focus on phonics instruction, sight word reading, reading aloud, and learning and practicing vocabulary.

There are some similarities in classroom experiences across disability categories. For example, whole-class instruction is the most common instructional grouping, regardless of disability. However, marked differences also occur. For example, students with learning disabilities or speech impairments are the most likely to receive whole-class instruction and to take part frequently in several classroom activities explored in SEELS. In contrast, students with mental retardation, autism, or multiple disabilities receive the most individual instruction, but are the least likely to take part frequently in many of the classroom activities addressed in this chapter.

Grade-level distinctions also are apparent. At higher grade levels, in both general education settings and special education settings students with disabilities are less likely to be instructed in small groups frequently and more likely to work on projects or presentations. In general education settings, teacher-student interactions, in the form of class discussions and oral responses to questions, decline in frequency as do reading/language arts activities, with the exception of reading literature. In special education settings, student-teacher interactions remain about the same, and the frequency of use of some language arts activities declines, whereas reading literature or informational materials becomes more common. Students with disabilities in ungraded classes are most likely to be instructed individually and are less likely than their peers at the same grade levels to participate in frequently each of the classroom activities investigated in SEELS.

Some classroom experiences do not differ for students with different household incomes or racial/ethnic backgrounds, such as their exposure to whole-class instruction and the frequency with which they work independently in class or take quizzes or tests. However, in general education settings, students with disabilities from higher-income households differ from others in being less likely to receive small-group or individual instruction. They are more likely than others, however, to take part frequently in classroom interactions, such as class

discussions and projects or presentations. In special education settings, students from higher-income households are more likely than students from low-income households to respond orally to questions frequently. In regard to racial/ethnic differences in general education settings, African-American students with disabilities are more likely than white students to receive individual instruction and more likely to take tests frequently. On the other hand, Hispanic students with disabilities in general education settings are more likely than white students to receive small-group instruction frequently, and Asian/Pacific Islander students are less likely than other students to take quizzes or tests frequently.

References

Achilles, C. M. & Finn, J. D. (2000). *The varieties of small classes and their outcomes*. Paper delivered at the Combined National Invitational Conference of the U.S. Department of Education and Temple University's Laboratory for Student Success. Washington, DC

Achilles, C. M., Finn, J. D., & Bain, H. P. (1998). Using class size to reduce the equity gap. *Educational Leadership, 55*(4), 40-43.

Barr, R., & Johnson, B. (1991). *Teaching reading in elementary classrooms: developing independent readers*. New York: Addison-Wesley.

Carnine, D. (1997). Bridging the research-to-practice gap. *Exceptional Children 63*(4), 513-21.

Carnine, D., Miller, S., Bean, R., & Zigmond, N. (1994). Social studies: educational tools for diverse learners. *School Psychology Review, 23*(3), 428-41.

Carnine, D. W., Silbert, J., & Kameenui, E. J. (1997). *Direct instruction reading.* (3rd edition*)*. Englewood Cliffs, NJ: Prentice-Hall.

Elbaum, B., Vaughn, S., Hughes, M., & Moody, S. W. (1999). Grouping practices and reading outcomes for students with disabilities. *Exceptional Children 65*(3), 399-415.

Elliott, J. L., & Thurlow, M. L. (2000). *Improving test performance of students with disabilities on district and state assessments*. Thousand Oaks, CA: Corwin Press, Inc.

Finn, J. D. (1997). *Class size: What does research tell us? Spotlight on student success*. Philadelphia, PA: Mid-Atlantic Laboratory for Student Success.

Fuchs, D., Fuchs, L., Mathes, P. G., & Simmons, D. C. (1997). Peer-assisted learning strategies: Making classrooms more responsive to diversity. *American Educational Research Journal, 34*(1), 174-206.

Fuchs, L. S., & D. Fuchs, D. (1986). *Effects of long- and short-term goal assessment on student achievement*. Paper presented at the Seventieth Annual Meeting of the American Educational Research Association, San Francisco, CA.

Gersten, R., & Carnine, D. (1986). Direct Instruction in reading comprehension. *Educational Leadership 43*(7), 70-78.

Gersten, R., & Dimino, J. (2001). The realities of translating research into classroom practice. *Learning Disabilities: Research & Practice, 16*(2), 120-30.

Gersten, R., & Dimino, J. (1990). *Reading instruction for at-risk students: Implications of current research*. Eugene, OR: Oregon School Study Council, University of Oregon.

Gersten, R., Williams, J. P., et al., (1998). *Improving reading comprehension for children with disabilities: A review of research. Final report*. Jessup, MD: ED Pubs.

Harris, K. R. E., Graham, S. E., & Deshler, D. (1998). *Teaching every child every day: Learning in diverse schools and classrooms.* Advances in Teaching and Learning Series. Cambridge, MA: Brookline Books.

Kameenui, E. J., & Carnine, D. W. (1998). *Effective teaching strategies that accommodate diverse learners*. Upper Saddle River, NJ: Prentice-Hall Inc.

Klingner, J. K., & Vaughn, S. (1998). Using collaborative strategic reading. *Teaching Exceptional Children, 30*(6), 32-37.

Klingner, J. K., Vaughn, S. Hughes, M. T., Schumm, J. S, & Elbaum, B. (1998). Outcomes for students with and without learning disabilities in inclusive classrooms. *Learning Disabilities Research and Practice, 13*(3), 153-61.

Koretz, D. (1988). Educational practices, trends in achievement, and the potential of the reform movement. *Educational Administration Quarterly, 24*(3), 350-59.

Lyon, G. R. (1998). *Overview of reading and literacy initiatives*. Bethesda, MD, National Institute of Child Health and Human Development. Available at http//www.nichd.nih.gov/publications/pubs/jeffords.htm.*:* 19.

Maheady, L., Mallette, B., & Harper, G. F. (1996). The pair tutoring program: An early field-based experience to prepare general educators to work with students with special learning needs. *Teacher Education and Special Education, 19*(4), 277-97.

Marston, D. (1988). The effectiveness of special education: A time series analysis of reading performance in regular and special education settings. *Journal of Special Education, 21*(4), 13-26.

McLaughlin, M. J., Artiles, A. J., & Pullin, D. (2001). Challenges for the transformation of special education in the 21st century: Rethinking culture in school reform. *Journal of Special Education Leadership, 14*(2), 51-62.

McLeskey, J., & Waldron, N. L. (2002). Inclusion and school change: Teacher perceptions regarding curricular and instructional adaptations. *Teacher Education and Special Education, 25*(1), 41-54.

Moody, S. W., Vaughn, S., Hughes, M., T., & Fischer, M. (2000). Reading instruction in the resource room: Set up for failure. *Exceptional Children, 66*(3), 305-16.

O'Connor, R. E. (1999). Teachers learning ladders to literacy. *Learning Disabilities Research and Practice, 14*(4), 203-14.

O'Connor, R. E., Jenkins, J. R., Cole, K. N., & Mills, P. E. (1993). Two approaches to reading instruction with children with disabilities: Does program design make a difference? *Exceptional Children, 59*(4), 312-23.

O'Connor, R. E., & Jenkins, J. R. (1995). *Cooperative learning for students with learning disabilities: teacher and child contributions to successful participation*. Paper presented at the Annual Conference of the American Educational Research Association, San Francisco.

O'Connor, R. E., & Jenkins, J. R. (1997). *Early and later prediction of reading disabilities*. Paper presented at Annual Meeting of the American Educational Research Association, Chicago.

Pressley, M., Roehrig, A., Bogner, K., Raphael, L. M., & Dolezal, S. (2002). Balanced literacy instruction. *Focus on Exceptional Children, 34*(5), 1-14.

Slavin, R. (1990). Class size and student achievement: Is smaller better? *Contemporary Education, 62*(1), 6-12.

Slavin, R. E. (1996). Cooperative learning in middle and secondary schools. *Clearing House, 69*(4), 200-04.

National Center of Education Statistics. (1999). What happens in classrooms? Instructional Practices in Elementary and Secondary Schools, 1994-95. Washington, DC: Author.

Thurlow, M., Ysseldyke, J., Gutman, S., Geenen, K. (1998). *An analysis of inclusion of students with disabilities in state standards documents*. Technical Report 19. Minneapolis, MN: National Center on Education Outcomes, University of Minnesota.

Vaughn, S., Bos, C. S. & Schumm, J. S. (1997). *Teaching mainstreamed, diverse, and at-risk students in the general education classroom*. Needham Heights, MA: Allyn & Bacon Inc.

Vaughn, S., Hughes, M. T. Hughes, M. T., Moody, S. W., Elbaum, B. (2001). Instructional grouping for reading for students with LD: Implications for practice. *Intervention in School and Clinic, 36*(3), 131-37.

Ysseldyke, J. E., Thurlow, M. L., Langenfeld, K. L., Nelson, J. R., Teelucksingh, E, & Seyfarth, A. (1998). *Educational results for students with disabilities: What do the data tell us?* Technical Report 23. Minneapolis, MN: National Center on Education Outcomes, University of Minnesota.

6. Supports for Teachers of General Education Classes

by Anne-Marie Guzman, Camille Marder, Mary Wagner, and Jose Blackorby

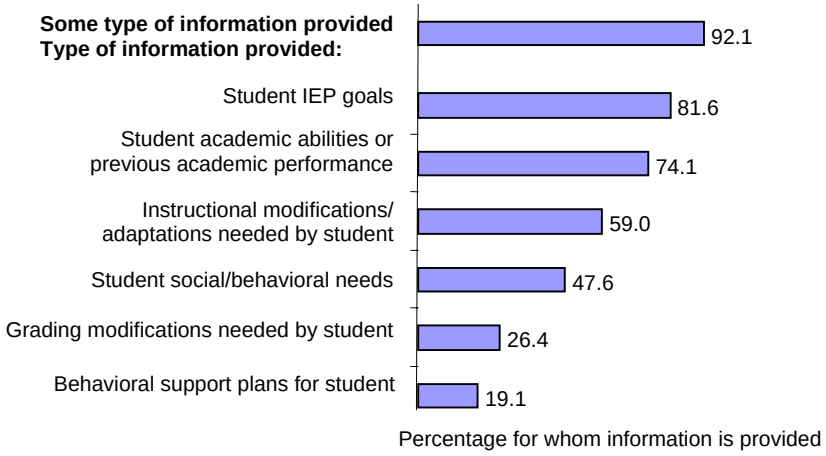
Students and teachers alike require support to create positive learning environments in general education settings. This chapter focuses on the extent, type, and adequacy of supports that are provided to educators serving students with disabilities in general education language arts classes.

Information Provided to General Education Teachers about their Students with Disabilities

The successful inclusion of students with disabilities in general education classes depends on many factors, including careful planning, parent collaboration, supports for students and teachers, and accommodations for students' disabilities (Brownell et al, 1997). An important ingredient in the inclusion process is information provided to general education teachers in preparation for the enrollment of a student with a disability in their classes. Appropriate information about the student provides teachers with a clearer picture of the student's capabilities and educational history. It also serves as an important starting point for the design and delivery of instruction that is maximally effective for an individual student.

- Teachers of more than nine of 10 students with disabilities in general education language arts classes report that they receive some type of information about them before the students attend their classes (Exhibit 6-1).

Exhibit 6-1
Information Provided to General Education Teachers before the Enrollment of Students with Disabilities in their Classes



- The most commonly provided types of information relate to students' IEP goals and about their academic abilities or previous academic performance. Information about instructional modifications and students' social or behavioral needs also are commonly provided.
- Behavioral support plans are the least commonly provided type of information.

Information Provided to Teachers: Disability Category Differences

- Students with speech impairments are the least likely group to have information shared with their general education teacher (Exhibit 6-2); more than one in eight have no information about them provided to teachers.

Exhibit 6-2
Information Provided to General Education Teachers before the Enrollment of Students in their Classes, by Student's Disability Category

Percentage with teachers who receive:	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities
Some type of student information	95.6 (1.7)	86.1 (3.0)	94.8 (3.2)	95.3 (3.2)	94.2 (2.4)	94.2 (2.3)	94.2 (2.1)	94.9 (2.2)	98.9 (1.3)	95.9 (3.9)	94.2 (6.1)
Information about student's:											
IEP goals	88.5 (2.6)	70.5 (3.9)	86.3 (5.0)	89.0 (3.2)	79.1 (4.1)	81.8 (3.7)	82.9 (3.4)	82.9 (3.6)	93.6 (3.1)	81.6 (7.7)	93.1 (6.6)
Academic abilities or previous academic performance	79.6 (4.1)	66.1 (4.2)	76.3 (7.2)	74.5 (3.9)	72.2 (5.0)	76.1 (4.8)	78.4 (4.5)	76.7 (4.9)	85.7 (4.5)	63.0 (9.6)	86.8 (8.8)
Instructional modification/ adaptation needs	74.7 (3.5)	34.5 (4.1)	62.2 (7.0)	60.0 (5.1)	75.6 (4.4)	82.6 (3.7)	69.6 (4.2)	72.9 (4.5)	77.6 (5.2)	78.2 (8.2)	79.8 (10.5)
Social/ behavioral needs	47.8 (4.1)	37.9 (4.2)	58.0 (7.2)	82.6 (3.9)	43.5 (5.0)	56.3 (4.8)	56.8 (4.5)	58.8 (4.9)	84.9 (4.5)	49.9 (9.9)	83.1 (9.8)
Grading modification needs	34.9 (3.9)	14.9 (3.1)	34.3 (6.9)	26.2 (4.5)	16.9 (3.8)	17.9 (3.7)	26.1 (4.0)	32.6 (4.7)	26.0 (5.5)	43.2 (9.8)	27.0 (11.6)
Behavioral support plans	20.2 (3.3)	10.1 (2.6)	24.9 (6.3)	58.8 (5.1)	16.1 (3.7)	17.0 (3.6)	14.6 (3.2)	24.7 (4.3)	51.8 (6.2)	21.9 (8.2)	41.3 (12.9)
Sample size	300	257	89	178	251	267	291	246	189	75	48

Standard errors are in parentheses.

- Although information about students' IEP goals is the most common form of pre-enrollment information provided about students across the disability spectrum, students with autism or multiple disabilities are

particularly likely to have this information provided to their new general education teachers.

- Students with emotional disturbances, autism, or multiple disabilities are more likely than other students to have information regarding their social or behavioral needs and behavioral support plans provided to their new teachers.
- Three-fourths or more of students with learning disabilities, sensory impairments, autism, traumatic brain injuries, or multiple disabilities have information that is related to instructional modification needs provided to their general education language arts teachers.
- One-third or more of students with learning disabilities, mental retardation, other health impairments, or traumatic brain injuries have information about needed grading modifications provided to general education language arts teachers when those students enroll in their classes.

Student Information Provided to Teachers: Grade Level and Demographic Differences

- Teachers of students with disabilities in upper elementary and middle schools grades are more likely than teachers of younger students to receive information about the modifications and adaptations needed by students. Whereas 42% of first through third graders with disabilities have teachers who receive information about instructional modifications and adaptations and 16% have teachers who receive information about grading modifications, 72% of students with disabilities above the fifth grade have teachers who receive information about instructional modifications and adaptations, and 34% have teachers who receive information about grading modifications.
- Differences among racial/ethnic groups are few in regard to information provided to their teachers. The exception is that information about students' social or behavioral needs is provided to the teachers of 50% of white students and 30% of Hispanic students.
- Information provided to teachers does not vary for students with different levels of household income.

Supports for General Education Language Arts Teachers of Students with Disabilities

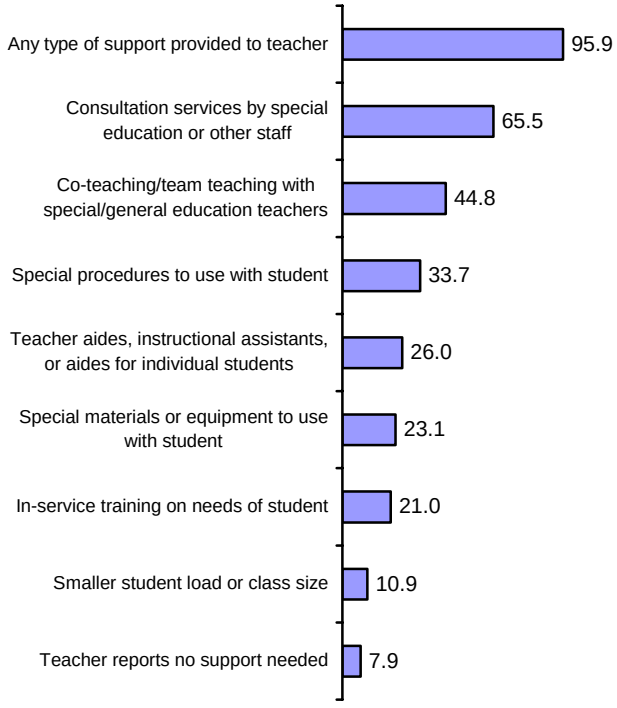
In addition to information about students, general education teachers may require additional support to be successful in teaching students with disabilities. Such support can vary dramatically in cost and in scope. For example, in-service training may help to increase teachers' skills in working with specific approaches

or types of students. In contrast, some students may require a full-time aide to succeed in general education classes.

SEELS investigated the extent to which general education teachers who have students with disabilities in their classes receive seven types of support: special materials; in-service training regarding the needs of students with disabilities; co-teaching or team teaching with a special education teacher; special procedures to use with a student; consultation by special education or other staff; a teacher aide, instructional assistant, or personal aide for an individual student; and a smaller student load or class size.

General education language arts teachers receive a range of supports to meet the needs of students with disabilities in their classrooms (Exhibit 6-3).

Exhibit 6-3
Supports Provided to General Education Teachers of Students with Disabilities



- The vast majority of students with disabilities have teachers who report receiving some kind of support to assist them with these students. About one student in twelve have teachers who indicate that no support is needed.

- By far the most common type of support provided to general education teachers of students with disabilities is consultation by special education staff or other staff.
- Slightly fewer than half of students with disabilities have general education teachers who either co-teach or team-teach with a special education teacher.
- General education language arts teachers of about one-fourth of students with disabilities receive special materials or equipment or assistants in the classroom, and teachers of about one-fifth receive in-service training on the student's needs.
- The type of support least commonly provided teachers is reduced student load or class size.

Supports Provided to Teachers: Disability Category Differences

- Virtually all students, regardless of disability, have general education language arts teachers who receive one or more supports for use in teaching students with disabilities (Exhibit 6-4).
- Very few students with disabilities have general education language arts teachers who assert that they do not need supports to teach those students.
- Students with speech impairments are an exception to the patterns followed by students with other types of disabilities, in that their teachers are less likely to indicate that they need support, least likely to receive five of the seven types of support investigated, and among the least likely to receive the other two types of support.
- Consultation with special educators is the most common support provided to teachers for students in all disability categories, with the exception of students with visual impairments or multiple disabilities, for whom consultation is provided about as often as one other service.
- Students with mental retardation or multiple disabilities are the most likely to have teachers who receive a reduced student load.
- Students with multiple disabilities are the most likely to have teachers co-teach or team-teach with a special education teacher; together with students with autism, they are the most likely to have teachers with aides, instructional assistants, or aids for students; special procedures to use with the students; or in-service training on students' needs. Students with autism also are the most likely to have teachers who receive consultation services by special education staff.
- Students with learning disabilities are also among the most likely to have teachers who co-teach or team teach with a special education teacher.

- Students with mental retardation are among the least likely to have teachers who receive in-service training on their students' needs or special procedures to use with their students.

Exhibit 6-4
Support Provided to General Education Teachers, by Disability Category

Percentage for whom support is provided	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities
Any type of support	96.1	95.1	99.0	95.9	97.8	98.3	98.1	96.6	100.0	98.6	100.0
	(1.6)	(1.9)	(1.4)	(2.0)	(1.5)	(1.2)	(1.2)	(1.8)	(--)	(2.3)	(--)
Types of support:											
Consultation services by special education	73.2	53.3	69.4	73.8	72.1	74.8	70.4	65.5	81.0	78.7	74.4
	(3.6)	(4.3)	(6.7)	(4.5)	(4.6)	(4.2)	(4.2)	(4.8)	(4.9)	(8.2)	(11.4)
Co-teaching/team-teaching	58.2	28.3	49.1	40.2	33.0	32.8	34.3	50.1	48.9	56.4	64.6
	(4.0)	(3.9)	(7.2)	(5.0)	(4.8)	(4.5)	(4.3)	(5.0)	(6.3)	(9.9)	(12.5)
Special procedures to use with student	35.6	25.7	25.8	49.0	42.3	46.4	38.5	46.4	69.2	49.2	53.6
	(3.9)	(3.8)	(6.3)	(5.1)	(5.0)	(4.8)	(4.5)	(5.0)	(5.8)	(10.0)	(13.0)
Teacher aides, instructional assistants, or aids for student	27.8	17.8	43.2	26.2	25.8	35.2	45.1	35.2	61.1	43.8	78.7
	(3.7)	(3.3)	(7.2)	(4.5)	(4.5)	(4.6)	(4.6)	(4.8)	(6.1)	(9.9)	(10.7)
Special materials or equipment to use	25.8	15.4	32.0	15.3	51.1	79.9	40.5	29.7	31.7	45.2	53.1
	(3.6)	(3.1)	(6.7)	(3.7)	(5.1)	(3.9)	(4.5)	(4.6)	(5.8)	(9.9)	(13.0)
In-service training on needs of students	27.0	12.5	15.4	18.1	26.6	27.0	20.0	25.3	47.5	25.8	38.7
	(3.6)	(2.8)	(5.2)	(4.0)	(4.5)	(4.3)	(3.7)	(4.4)	(6.3)	(8.7)	(12.7)
Smaller student load or class size	14.4	6.2	23.1	10.4	9.5	6.0	9.9	8.7	5.0	16.0	21.7
	(2.9)	(2.1)	(7.2)	(3.1)	(3.0)	(2.3)	(2.7)	(2.8)	(2.7)	(7.3)	(10.8)
Percentage whose teachers indicate no support is needed	2.2	17.7	1.0	2.6	2.5	3.3	3.3	3.1	--	--	4.4
	(1.2)	(3.3)	(1.4)	(1.6)	(1.6)	(1.7)	(1.6)	(1.7)			(5.4)
Sample size	298	255	90	179	251	267	291	244	186	74	48

Standard errors are in parentheses.

Supports for Teachers: Grade-Level and Demographic Differences

- Students with disabilities in middle school grades are more likely than students with disabilities in the early elementary grades to have teachers who receive in-service training on the needs of those students (27% vs. 14%) and less likely to have teachers who co-teach or team-teach with special education staff (50% vs. 35%).
- Supports that are provided teachers do not differ significantly by student's demographic characteristics.

General Education Teachers' Perceptions of Supports

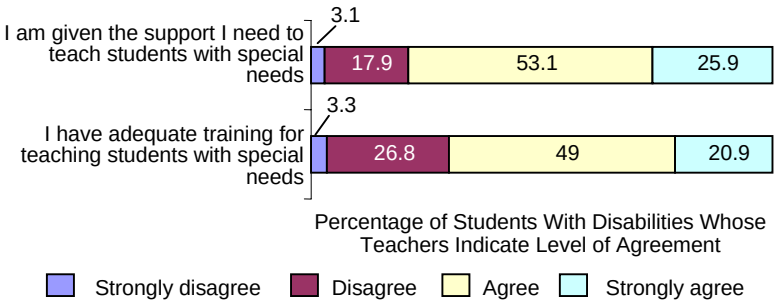
Teachers are most likely to succeed with students with special needs when provided with appropriate supports and training. Several recent studies have shown that if teachers are not prepared to teach students with disabilities, they may not provide adequate services and supports to those students (Brownellet al., 1997; Pugach & Johnson, 2002). SEELS asked teachers to evaluate the adequacy of the supports they received by expressing their degree of agreement with the following statements:

"I am given the support I need to teach students with special needs."

"I have adequate training for teaching students with special needs."

- About one-fourth of students with disabilities who receive language arts instruction in general education settings have teachers who "strongly agree" and about half have teachers who "agree" that they are adequately supported in teaching students with special needs (Exhibit 6-5). About one in five have teachers who report that they do not receive adequate support for teaching students with special needs.

Exhibit 6-5
General Education Language Arts Teacher's Perceptions of Adequacy of Training and Support



- General education teachers are somewhat less likely to report that they are adequately trained to teach students with disabilities than that they are adequately supported. Among students with disabilities who receive language arts instruction in a general education class, about one-fifth have teachers who "strongly agree," and one-half have teachers who "agree" that they are adequately trained. Thirty percent have teachers who report that their training is not adequate for teaching students with disabilities.

Exhibit 6-6
General Education Language Arts Teachers' Perceptions of Adequacy of Training and Support, by Disability Category

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities
Percentage whose teachers strongly agree or agree with the statement:											
I am given the support I need to teach students with special needs	78.9 (3.1)	79.2 (2.5)	70.4 (6.4)	85.4 (3.4)	76.7 (4.0)	84.4 (3.3)	82.7 (3.3)	74.2 (4.2)	78.5 (5.1)	89.6 (5.8)	89.9 (7.9)
I have adequate training for teaching students with special needs	69.6 (3.5)	69.2 (2.9)	70.8 (6.4)	76.3 (4.1)	69.2 (4.4)	73.2 (4.0)	73.3 (3.9)	70.4 (4.3)	75.6 (5.3)	83.2 (7.1)	89.2 (8.2)
Sample size	343	487	95	203	275	301	324	273	200	80	51

Standard errors are in parentheses.

- There is a 20-percentage-point range across disability categories in the percentage of students whose general education language arts teachers "agree" or "strongly agree" that they are adequately supported and adequately trained to teach students with disabilities.
- Students with traumatic brain injuries or multiple disabilities are the mostly likely to have teachers who agree that they are adequately supported and trained.
- Students with mental retardation are among the least likely to have teachers who report that they were supported or trained. Students with learning disabilities, or speech, hearing impairments, or other health impairments also are relatively less likely than others to have teachers who report that they are adequately trained to teach students with disabilities.
- Students with disabilities from low-income households are less likely than others to have teachers who report that they were given adequate support. Sixty-eight percent of students in the former group, compared with 83% of students in other groups, have teachers who report adequate training.
- Teachers' perceptions of support or training do not differ across grade levels or racial/ethnic groups.

Summary

Teachers and students alike require both information and supports to make inclusion work. Nearly all general education language arts teachers serving students with disabilities receive information about a student with a disability before his or her enrollment in their classroom. The most common form of

information provided relates to students' IEP goals and academic needs. For students with behavioral disabilities (e.g., emotional disturbance, autism), relevant information (e.g., a behavioral support plan) often is provided.

General education teachers also receive direct supports to help with students in inclusive settings. The most common form of direct support is consultation with special education staff or other staff. However, team teaching and special instructional procedures are frequently provided as well. Instructional assistants and aides are provided most commonly to teachers of students with mental retardation, orthopedic impairments, autism, or multiple disabilities.

Finally, most students with disabilities in general education classes have teachers who report that they receive supports necessary to educate students with disabilities in general education. However, one in five students with disabilities in general education settings have teachers who report that they do not receive adequate support, and almost one in three have teachers who report that they are not adequately trained to teach students with disabilities.

References

Brownell, M. T., Smith, S. W., McNellis, J. R., & Miller, M. D. (1997). Attrition in special education: Why teachers leave the classroom and where they go. *Exceptionality*, *7*(3), 143-155.

Pugach, M. C., & Johnson, L. J. (2002). *Collaborative Practitioners, Collaborative Schools. Second Edition*. Denver, CO: Love Publishing Company.

7. Student Accommodations and Supports *by Jose Blackorby, Mary Wagner, Camille Marder, and Anne-Marie Guzman*

IDEA emphasizes the appropriate use of accommodations to support the education of students with disabilities. Accommodations are changes made to aspects of the educational process to enable students with disabilities to perform at levels consistent with their abilities (Elliott, Kratochwill, & Schulte, 1998; Haigh, 1999; Thurlow et al., 1995; Tindal et al., 1998; Ysseldyke et al., 1999). The many types of accommodations that are intended to meet the needs of individual students have been organized into four broad categories by the National Center on Education Outcomes (NCEO). ***Timing*** accommodations are changes in the time of day or amount of time given to students for a test or an assignment. ***Setting*** accommodations are physical adaptations in classrooms or testing situations. ***Presentation*** accommodations involve changes in how a lesson, curriculum, or assessment is provided to students; these accommodations can include modified tests, slower paced instruction, or the use of human aides, such as a reader or interpreter. ***Response*** accommodations address the manner that students respond in learning or assessment situations, such as the use of signing or a communication board, calculator, or spell-checker.

The use of accommodations has been controversial, particularly in testing situations. Concerns have been voiced about how to interpret scores from accommodated tests, particularly when an accommodation directly facilitates the educational task at hand, such as the use of a calculator in mathematics tests (DeStefano et al., 2001; Fuchs & Fuchs, 2001; Koretz & Hamilton, 2000; Thurlow & Wiener, 2001).

In addition, students with disabilities may be given a variety of other types of learning aids or supports, such as a particular kind of training (e.g., in study skills or self-advocacy), or access to a support program (e.g., behavior management).

SEELS asked the primary language arts teachers of students with disabilities about students' receipt of 24 types of accommodations and learning supports in their classes.

Number of Accommodations and Supports Provided to Students with Disabilities

- On average, students with disabilities in general education language arts classes are provided an average of six accommodations, whereas students in special education language arts classes are provided 10 accommodations, on average.
- Regardless of disability category, students are provided more accommodations or supports in special education than in general education settings (an average of eight to 10, compared with an average of four to nine; Exhibit 7-1). The range in the average number

of supports across disability categories is more than twice as great in general education classes as in special education settings.

Exhibit 7-1
Average Number of Accommodations and Supports Provided to Students with Disabilities, by Disability Category and Instructional Setting

Average number of accommodations and supports provided in:	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabili-ties
General education	6.8	4.1	8.1	5.3	5.1	7.4	6.4	6.2	7.3	6.9	8.9
	(.3)	(.4)	(.6)	(.5)	(.4)	(.5)	(.4)	(.4)	(.5)	(.8)	(1.1)
Special education	9.3	9.7	9.7	10.0	8.2	9.3	10.5	9.4	9.1	10.4	9.6
	(.3)	(.7)	(.2)	(.3)	(.3)	(.6)	(.4)	(.4)	(.3)	(.7)	(.4)
Sample size											
General education	312	261	91	182	256	273	296	254	193	76	51
Special education	355	86	528	313	438	205	276	226	467	148	377

Standard errors are in parentheses.

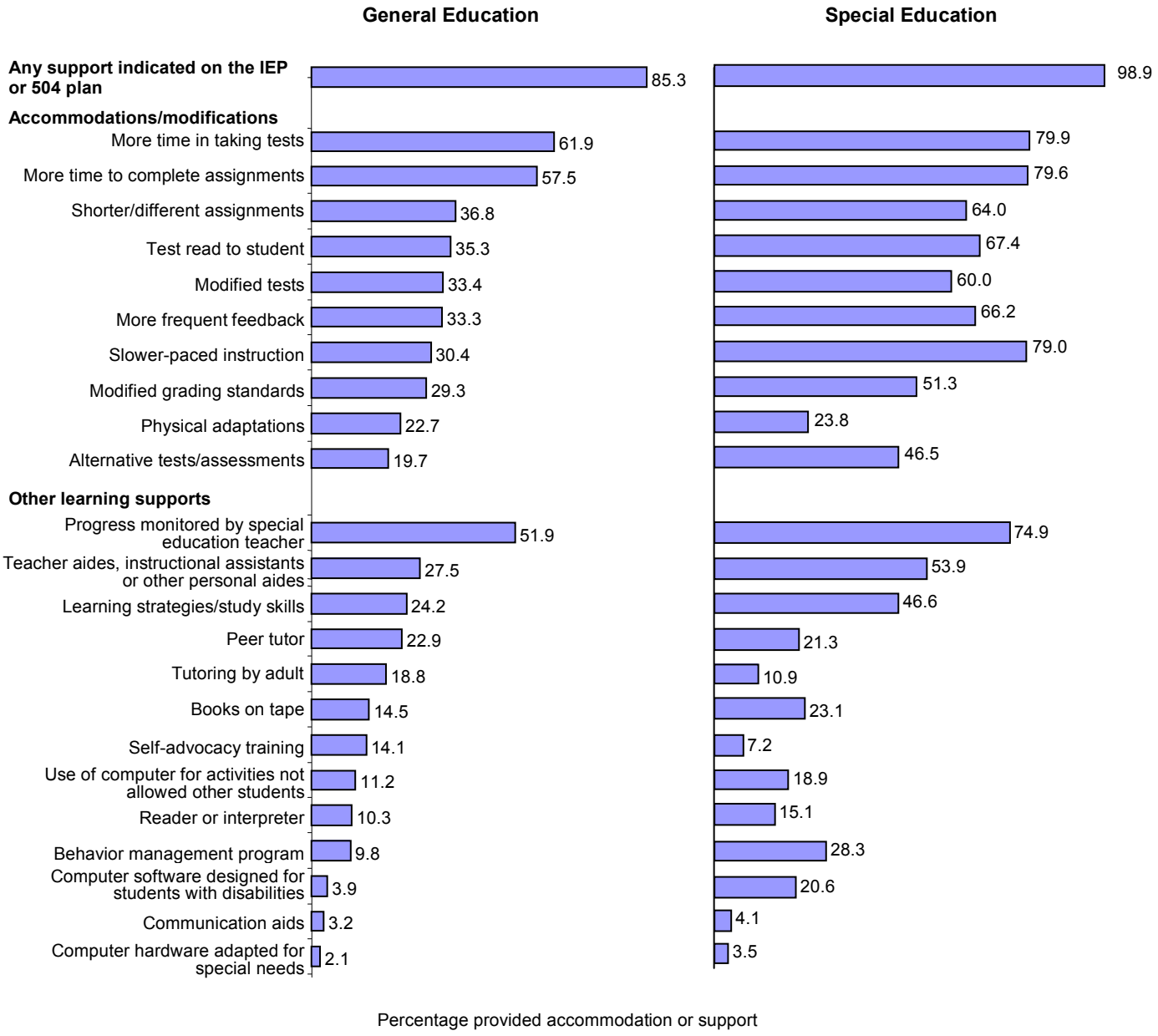
- The greatest difference between the average number of accommodations or supports provided in general education and in special education settings is among students with speech impairments or emotional disturbances; an average of about five more accommodations or supports are provided to students in these disability categories in special education settings. In contrast, the average difference in the two settings for students with mental retardation, visual impairments, autism, or multiple disabilities is less than two accommodations.
- No differences occur in the average number of accommodations and supports provided to students who differ in grade level or various demographic characteristics.

Types of Accommodations and Supports Provided to Students with Disabilities

Different types of accommodations are required to meet the variety of needs that students bring to the classroom. Teachers report that students with disabilities receive a wide variety of accommodations in the course of language arts instruction (Exhibit 7-2).

- Although the percentages of students who are provided the various types of accommodations vary widely within each type of instructional setting and across instructional settings, most types of accommodations, modifications, and learning supports are more common in special education settings than in general education settings (Exhibit 7-2).

Exhibit 7-2
Accommodations and Supports Provided to Students with Disabilities, by Instructional Setting



- In general education settings, approximately 60% of students with disabilities are granted extra time to take tests or complete assignments, and approximately one-third are given shorter or different assignments, have tests read to them, take modified tests, receive feedback more frequently than other students or slower-paced instruction, and are graded using modified standards. Approximately

one-fifth are provided physical adaptations or are given alternative tests or assessments.

- The most common type of learning support other than accommodations or modifications for students with disabilities in general education classes is having their progress monitored by a special education teacher; approximately one-half receive this type of support. Approximately one-fourth have classroom or personal aides, are provided assistance with learning strategies or study skills, or receive self-advocacy training, and approximately 10% use a computer for activities not allowed for other students, have a reader or interpreter, or are in a behavior management program. Fewer than 10% are provided other types of learning supports.
- For students in special education settings, the most common types of accommodations or modifications, which are received by approximately 80% of students, are extra time on tests or assignments and slower-paced instruction. Between 60% and 70% of students receive shorter or different assignments, have tests read to them, take modified tests, or receive more frequent feedback. Approximately half are graded using modified standards or take alternative tests and assessments, and approximately one-fourth are provided physical adaptations.
- In special education settings, three-fourths of students have their progress monitored by a special education teacher, and approximately half have classroom or personal aides or receive help with learning strategies or study skills. Between 20% and 30% receive tutoring from a peer, use books on tape, are in a behavior management program, or use computer software designed for students with disabilities; 15% receive help from a reader or interpreter. Fewer than 10% receive other types of supports.

Types of Accommodations and Supports Provided to Students: Disability Category Differences

Accommodations and supports play a role in the education of nearly all students with disabilities, but the frequency with which they are provided varies across disability categories. This variation is shown in Exhibit 7-3 using the National Center on Educational Outcomes accommodation categories of response, presentation, setting, and timing.[2]

- Across all disability categories, the most common accommodations and supports relate to presentation. Virtually all students in special education settings receive them.

[2] See Appendix A for a description of how the 24 accommodations, supports, and learning aids were grouped into these four categories.

Exhibit 7-3
Accommodations and Supports Provided to Students, by Disability Category and Instructional Setting

Percentage receiving accommodation/support in:	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Dis-abilities
General education											
Presentation	87.9 (2.6)	59.5 (4.2)	95.6 (4.2)	72.2 (4.6)	72.0 (4.5)	81.8 (3.7)	84.0 (3.3)	83.6 (3.7)	95.6 (2.4)	90.7 (5.7)	92.9 (6.5)
Timing	86.4 (2.7)	45.2 (4.2)	84.1 (5.3)	61.9 (4.9)	50.9 (5.0)	73.9 (4.2)	73.9 (3.7)	78.5 (4.0)	78.6 (5.0)	80.7 (7.7)	76.2 (10.7)
Response	71.0 (3.6)	43.3 (4.2)	81.2 (5.6)	50.1 (5.1)	43.0 (5.0)	60.7 (4.7)	60.8 (4.4)	63.8 (4.7)	71.8 (5.5)	62.3 (9.5)	82.8 (9.5)
Setting	20.9 (3.2)	19.0 (3.3)	15.7 (5.2)	22.5 (4.3)	64.6 (4.8)	72.2 (4.3)	54.1 (4.5)	33.8 (4.7)	37.2 (5.9)	29.6 (8.9)	48.0 (12.6)
Special education											
Presentation	98.9 (.8)	95.3 (3.2)	98.2 (.8)	97.1 (1.3)	96.0 (1.6)	96.4 (2.5)	98.5 (1.1)	96.0 (2.0)	96.6 (1.3)	96.4 (2.7)	98.3 (1.1)
Timing	92.2 (2.0)	90.9 (4.4)	83.6 (2.3)	88.5 (2.5)	80.0 (3.2)	72.2 (6.1)	84.5 (3.4)	87.2 (3.5)	64.2 (3.5)	87.0 (4.8)	71.0 (3.8)
Response	89.6 (2.3)	84.9 (5.5)	87.8 (2.0)	87.8 (2.6)	74.7 (3.5)	79.3 (5.5)	88.9 (2.9)	83.2 (3.9)	83.0 (2.8)	89.3 (4.4)	83.8 (3.1)
Setting	21.3 (3.1)	22.7 (6.4)	20.5 (2.5)	26.5 (3.5)	35.8 (3.8)	49.4 (6.8)	46.1 (4.6)	32.5 (4.9)	29.5 (3.3)	36.4 (6.9)	35.5 (4.0)
Sample size											
General education	312	261	91	182	256	273	296	254	193	76	51
Special education	355	86	528	313	438	205	276	226	467	148	377

Standard errors are in parentheses.

- Accommodations and supports related to timing and response are provided to more than 60% of students in most disability categories in general education settings and to more than 70% of students in most disability categories in special education settings.
- Adaptations related to setting are the least common type of adaptations for youth in most disability categories, regardless of instructional setting. Students' likelihood of receiving them varies widely, particularly in general education classes, which have a 56-percentage-point range in the likelihood of receiving such accommodations across the disability categories.
- In general education settings, students with mental retardation are among the most likely to be provided accommodations and supports related to presentation, timing, and response, whereas students with sensory impairments are the most likely to be provided adaptations related to setting (physical adaptations).
- In general education settings, students with speech impairments are among the least likely to be provided each kind of accommodation or

support. Students with hearing impairments also are among the least likely to be provided supports related to timing and response.

- The range in provision of each type of accommodation or support across the disability categories is smaller in special education than in general education settings.
- In special education settings, students with learning disabilities or speech impairments are the most likely to receive accommodations and supports related to timing, whereas students with autism are least likely to receive them. In contrast, students with learning disabilities, mental retardation, emotional disturbances, orthopedic impairments, or traumatic brain injuries are the most likely to receive supports related to response, whereas students with hearing impairments are the least likely to receive them.
- In both special education and general education settings, students with visual impairments are the most likely to be provided accommodations related to setting; however, students with hearing impairments fall in the middle of the range of the disability categories.

Types of Accommodations and Supports Provided to Students with Disabilities: Grade-Level and Demographic Differences

- In general education settings, students' likelihood of being provided accommodations for timing, presentation, and response increase with higher grade levels (Exhibit 7-4).
- In special education settings, students' likelihood of being provided accommodations is not higher at higher grade levels; however, students in ungraded classes are less likely to be provided accommodations related to timing or response than students at grade levels.
- In general education settings, students from households in the highest income group are less likely than students from lower-income households to be provided accommodations for timing, presentation, and response.

Exhibit 7-4
Types of Student Accommodations and Supports Provided, by Grade Level, Income, Race/Ethnicity, and Instructional Setting

Percentage receiving accommodation/ support in:	Grade Level				Household Income			Race/Ethnicity			
	Un-graded	1st to 3rd	4th and 5th	6th and above	$25,000 or Less	$25,001 to $50,000	More than $50,000	White	African American	Hispanic	Asian
General education											
Presentation	--	69.7	75.2	84.1	79.9	83.9	67.4	75.3	77.7	82.0	82.3
	--	(4.0)	(3.5)	(3.1)	(4.1)	(3.7)	(4.2)	(2.3)	(5.7)	(5.9)	(17.0)
Timing	--	57.5	67.9	80.1	73.5	75.6	56.0	66.7	66.9	82.7	79.4
	--	(4.3)	(3.7)	(3.4)	(4.6)	(4.4)	(4.4)	(2.6)	(6.5)	(5.8)	(18.1)
Response	--	50.6	61.1	64.8	70.3	63.1	49.2	55.0	71.0	70.3	36.4
	--	(4.3)	(3.9)	(4.0)	(4.7)	(4.9)	(4.4)	(2.7)	(6.2)	(7.1)	(21.5)
Setting	--	24.5	20.8	22.9	24.1	19.7	24.3	21.4	30.3	17.7	28.6
	--	(3.7)	(3.2)	(3.6)	(4.4)	(4.0)	(3.8)	(2.2)	(6.3)	(5.9)	(20.2)
Special education											
Presentation	91.6	97.7	98.6	98.1	97.9	98.5	97.7	97.6	98.3	99.3	96.4
	(3.5)	(1.3)	(0.9)	(1.0)	(1.1)	(1.2)	(1.6)	(.8)	(1.1)	(1.0)	(7.9)
Timing	63.9	85.9	89.3	92.2	88.5	89.9	84.4	87.7	91.3	83.2	86.7
	(6.0)	(3.0)	(2.3)	(2.0)	(2.4)	(2.8)	(3.8)	(1.8)	(2.4)	(4.9)	(14.3)
Response	75.5	88.0	88.4	87.9	86.6	91.1	84.7	86.0	89.5	90.6	88.6
	(5.3)	(2.8)	(2.4)	(2.4)	(2.6)	(2.7)	(3.8)	(1.9)	(2.7)	(3.8)	(13.4)
Setting	25.6	30.1	21.7	21.5	29.6	25.1	20.3	20.2	25.8	37.1	27.4
	(5.4)	(4.0)	(3.1)	(3.0)	(3.5)	(4.1)	(4.2)	(2.2)	(3.8)	(6.5)	(18.8)
Sample size											
General education	--	736	794	694	469	493	760	1,681	279	211	46
Special education	357	888	1,067	1,070	1,089	761	734	2,034	846	457	60

Standard errors are in parentheses.

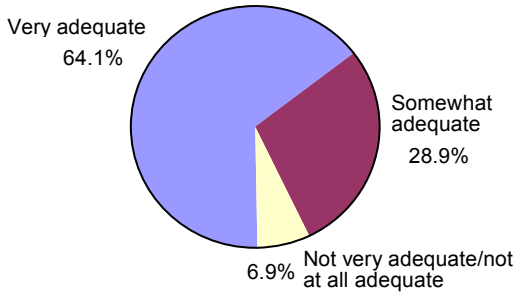
- Family income is not associated with the likelihood of receiving accommodations and supports for students in special education settings.
- Accommodations and supports related to presentation are about equally likely to be provided to students across racial/ethnic groups.
- Hispanic students with disabilities are more likely than white students to be provided accommodations related to timing and accommodations in general education classes and accommodations related to setting in special education classes. In addition, both Hispanic and African-American students are more likely than white students to be provided accommodations related to response.

Adequacy of Supports Provided to Students with Disabilities in General Education Classes

SEELS asked general education teachers with students with disabilities in their classes about the adequacy of the supports those students receive to help them succeed in class.

- The majority of students with disabilities in general education classes are provided adequate educational supports, according to their teachers (Exhibit 7-5); however, approximately one in 14 are reported not to be provided adequate support.

Exhibit 7-5
Teachers' Ratings of the Adequacy of Educational Supports Provided to Students with Disabilities in General Education Classes*



*Note: Percentages are percentages of students with level of support.

Differences in Adequacy of Supports

- According to general education teachers, students with speech impairments or traumatic brain injuries are the most likely to receive "very adequate" support in their classes, whereas students with mental retardation or multiple disabilities are the least likely to receive that level of support (Exhibit 7-6).
- Students from higher-income families are reported to receive "very adequate" educational supports in general education settings more often than peers from low income families (Exhibit 7-7).
- Hispanic students are less likely than white students to be reported to receive "very adequate" educational supports in general education settings.

Exhibit 7-6
Teachers' Ratings of the Adequacy of Educational Supports Provided to Students in General Education Classes, by Disability Category

Percentage whose teachers rate support provided to students in general education classes as:	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Dis-abilities
Very adequate	59.9	72.5	47.2	54.7	68.5	66.0	66.0	66.0	58.3	75.5	43.7
	(2.6)	(3.9)	(5.0)	(3.2)	(4.1)	(3.7)	(3.4)	(3.6)	(3.1)	(7.7)	(12.8)
Somewhat adequate	31.8	23.1	38.5	36.3	25.6	26.7	27.6	27.6	33.0	20.4	53.0
	(3.8)	(3.7)	(7.0)	(5.0)	(4.4)	(4.2)	(4.1)	(4.1)	(6.1)	(8.0)	(12.9)
Not very/not at all adequate	8.3	4.5	14.3	8.9	5.8	7.3	6.5	6.5	8.7	4.1	3.3
	(2.2)	(1.8)	(5.0)	(3.0)	(2.3)	(2.5)	(2.3)	(2.5)	(3.6)	(3.9)	(4.6)
Sample size	304	251	91	173	258	270	288	242	188	75	49

Standard errors are in parentheses.

Exhibit 7-7
Teachers' Ratings of the Adequacy of Educational Supports Provided to Students with Disabilities in General Education Classes, by Income, Race/Ethnicity, and Instructional Setting

	Household Income			Race/Ethnicity			
Percentage whose teachers rate support provided to students in general education classes as:	$25,000 or Less	$25,001 to $50,000	Over $50,000	White	African American	Hispanic	Asian/ Pacific Islander
Very adequate	51.8	63.8	70.9	69.2	55.5	47.6	71.4
	(5.2)	(4.9)	(4.1)	(2.5)	(7.0)	(7.9)	(20.0)
Somewhat adequate	35.3	29.7	24.6	25.8	31.9	40.5	26.3
	(5.0)	(4.7)	(3.9)	(2.4)	(6.5)	(7.8)	(19.5)
Not very/not at all adequate	12.9	24.6	4.6	5.0	12.6	11.9	2.3
	(3.5)	(2.5)	(1.9)	(1.2)	(4.6)	(5.1)	(6.7)
Sample size	461	491	744	1,648	279	204	47

Standard errors are in parentheses.

Summary

Students with disabilities are provided a wide range of accommodations and supports in their language arts classes to help them succeed. Accommodations and supports are more commonly provided in special education than in general education settings, reflecting the greater severity of disability of many of the students in special education classes.

SEELS findings suggest that the types of accommodations provided to students reflect their needs and that the vast majority of students are provided support that teachers consider at least "somewhat adequate". The number of

supports students are provided and the extent to which the support is fully adequate vary across disability categories. For example, in general education classes, students with speech impairments receive the fewest accommodations on average, yet they are most likely to be reported by their teachers as receiving support that is "very adequate." On the other hand, in these same settings, students with mental retardation or multiple disabilities receive the most accommodations, yet they are the least likely to be reported as having "very adequate" support by their teachers.

In addition to differences in the number and kinds of accommodations and supports provided to students with different kinds of disabilities, there also are differences among students with different household incomes and racial/ethnic backgrounds. Generally, white students and higher-income students are less likely to receive some kinds of accommodations, particularly in general education settings; however, they are more likely than their Hispanic or lower-income peers to be reported as having "very adequate" support.

References

DeStefano, L., Shriner, J. G., & Lloyd, C. A. (2001). Teacher decision making in participation of students with disabilities in large-scale assessment. *Exceptional Children, 68*(1), 7-22.

Elliott, S. N., Kratochwill, T. R., & Schulte, A. G. (1998). The assessment accommodation checklist: Who, what, where, when, why, and how? *Teaching Exceptional Children, 31*(2), 10-14.

Fuchs, L. S., & Fuchs, D. (2001). Helping teachers formulate sound test accommodation decisions for students with learning disabilities. *Learning Disabilities: Research & Practice, 16*(3), 174-181.

Haigh, J. (1999). *Accommodations, modifications, and alternates for instruction and assessment. State assessment series, Maryland/Kentucky report 5*. Minneapolis, MN: Maryland State Department of Education & the National Center on Educational Outcomes.

Koretz, D., & Hamilton, L. (2000). Assessment of students with disabilities in Kentucky: Inclusion, student performance, and validity. *Educational Evaluation and Policy Analysis, 22*(3), 255-272.

Thurlow, M. L., Ysseldyke, J.E., & Siverstein, B. (1995). Testing accommodations for students with disabilities. *Remedial and Special Education, 16*(5), 260-270.

Thurlow, M. L., & Wiener, D. J. (2001). Considerations in the use of nonapproved accommodations. *Assessment for Effective Intervention, 26*(2), 29-37.

Tindal, G., Heath, B., Hollenbeck, K., Almond, P., & Harniss, M. (1998). *Accommodating students with disabilities on large-scale tests: An empirical study of student response and test administration demands*. Eugene, OR: University of Oregon.

Ysseldyke, J., Thurlow, M., Seyfarth, A., Bielinski, J., Moody, M., Haigh, J., et al. (1999). *Instructional and assessment accommodations in Maryland. State assessment series, Maryland/Kentucky report 6*. Minneapolis, MN: National Center on Educational Outcomes.

8. Assessing Student Performance *by Renée Cameto, Anne-Marie Guzman, and Camille Marder*

Evaluation of student performance is an essential part of the teaching and learning process for all students. For students with disabilities, evaluation enables teachers to determine whether students have mastered material, achieved IEP objectives, and learned at the desired rate. Additionally, student evaluations are important mechanisms for communicating to many stakeholders—including parents, administrators, and students themselves—how students are faring academically.

Grades are a primary method for communicating about academic performance. However, the process of determining grades is not simple. Teachers take many factors into account in grading, including academic performance, participation in classroom learning activities, effort, progress, and attitude and behavior. Grading standards can vary for students at different grade levels, among teachers with different standards and views of grades, and across schools or school districts with different grading policies. These kinds of variations argue for caution in comparing students' grades. However, the important role of grades as a type of evaluation in schools makes a strong case for their inclusion in SEELS.

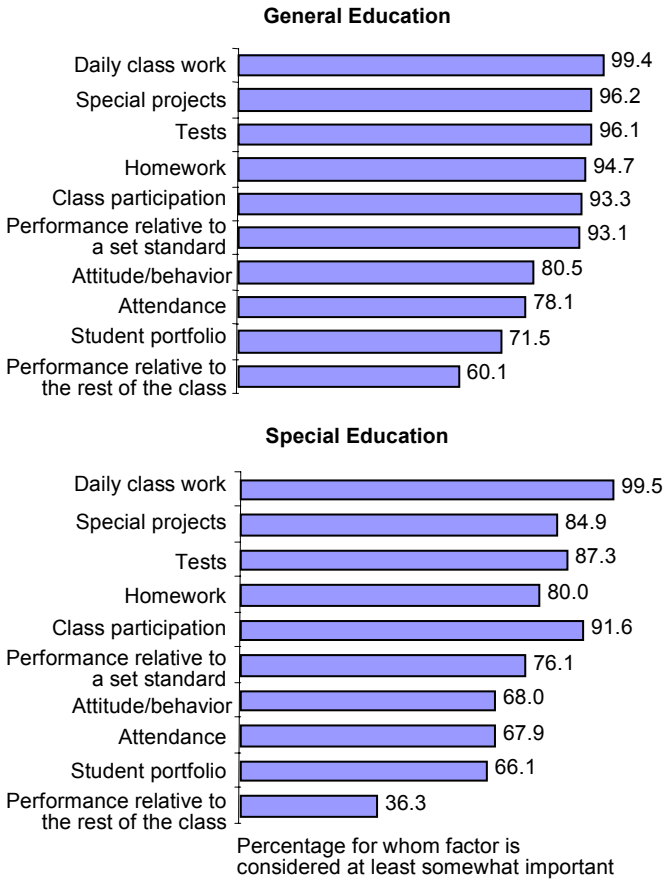
Teachers of students receiving language arts instruction in general education and special education settings were asked to report the importance they place on 10 factors in determining grades or formal progress reports for specific students with disabilities: daily class work, class participation, tests, special projects or activities, homework, performance relative to a standard, attitude and behavior, attendance, student portfolios, and performance relative to the class. Teachers rated these as "very important", "somewhat important", or "not important".

Factors Used to Evaluate the Performance of Students with Disabilities in Language Arts Classes

Elementary and middle school language arts teachers consider a variety of factors to be important in evaluating the performance of students with disabilities (Exhibit 8-1):

- Two-thirds or more of students with disabilities have teachers who rate nine of the 10 factors explored by SEELS as at least somewhat important in evaluating their performance.
- More factors are considered at least somewhat important in evaluating performance of students with disabilities by general education teachers than by special education teachers.
- In both general and special education settings, almost all teachers consider daily classwork to be an important factor in grading students.

Exhibit 8-1
Factors Used to Evaluate Performance of Students with Disabilities, by Instructional Setting



- Among students with disabilities whose language arts instruction takes place in general education settings, more than 90% have teachers who consider special projects, tests, homework, class participation, performance relative to a set standard, and daily classwork to be important in grading. Approximately 80% have teachers who consider attitude and behavior and attendance to be important, approximately 70% have teachers who consider student portfolios to be important, and 60% have teachers who consider students' performance relative to the rest of the class to be important.
- Compared with teachers in general education classes, teachers in special education settings give less emphasis in their student evaluations to products (e.g., homework, projects), attendance, and attitude.
- In both settings, performance relative to the rest of the class is the factor least likely to be considered important in determining the grades of students with disabilities.

Factors Used to Evaluate Student Performance: Disability Category Differences

- Across disability categories, many factors are less likely to be considered important in special education than in general education settings. For example, the likelihood that a teacher considers homework important differs markedly across the two settings for virtually all disability categories. In contrast, the differences between the two settings regarding the importance placed on tests, portfolios, or special projects are much smaller for most categories.
- Across disability categories and instructional settings, no meaningful differences occur in the importance placed on daily class work in determining grades. Teachers of more than 92% of students in all disability categories in both settings rely on this factor for student evaluation. Similarly, more than 90% of students in most disability categories have teachers who consider class participation to be important; the exception is teachers of students with autism, 81% of whom consider class participation important for their evaluation.[1]
- Considerably more variation occurs across disability categories in the importance placed on most evaluation factors by teachers in special education than in general education settings. The widest variation overall concerns the importance placed on performance relative to the rest of the class; the least variation relates to the importance given to attitude and behavior.
- In general education settings, students with mental retardation, autism, traumatic brain injury, or multiple disabilities are among the least likely to have teachers who consider a number of factors as important (Exhibit 8-2).
- In special education settings, students with autism are among the least likely to have teachers who consider all factors, except student portfolios, as important.
- Students with other kinds of disabilities have teachers who appear to tailor the mix of factors considered important in determining their grades. For example, students with learning disabilities have teachers who are very likely to place importance on the students' products, such as special projects, tests, and homework. They are among the least likely to think behavioral factors are important in grading students with learning disabilities.

[1] Because of their lack of variation, these factors are not presented in Exhibit 8-2.

Exhibit 8-2
Factors Used to Evaluate Student Performance in Language Arts Classrooms, by Disability Category and Instructional Setting

Percentage for whom factor is considered important in grading in:	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities
General education											
Special projects	96.5 (1.4)	96.2 (1.2)	93.2 (3.5)	97.5 (1.5)	94.4 (2.2)	97.2 (1.5)	96.1 (1.7)	95.7 (1.9)	90.1 (3.8)	97.8 (2.8)	78.6 (10.8)
Tests	95.5 (1.6)	97.3 (1.0)	85.6 (4.9)	95.2 (2.1)	96.2 (1.8)	97.6 (1.4)	96.3 (1.6)	96.3 (1.8)	92.3 (3.4)	93.6 (4.8)	81.8 (10.1)
Homework	95.3 (1.6)	95.4 (1.3)	83.4 (5.2)	93.1 (2.4)	93.6 (2.3)	96.0 (1.8)	96.2 (1.7)	92.7 (2.5)	85.1 (4.5)	86.2 (6.7)	84.9 (9.2)
Performance relative to a set standard	90.1 (2.3)	96.7 (1.1)	76.9 (5.9)	93.5 (2.4)	92.2 (2.6)	91.6 (2.5)	90.4 (2.6)	88.3 (3.1)	87.8 (4.1)	87.9 (6.3)	84.7 (9.4)
Attitude/behavior	74.8 (3.3)	83.9 (2.3)	81.3 (5.5)	84.5 (3.5)	86.5 (3.3)	83.0 (3.4)	81.0 (3.4)	79.9 (3.8)	81.3 (4.9)	70.4 (8.9)	87.2 (8.6)
Attendance	76.4 (3.2)	79.5 (2.5)	79.9 (5.6)	77.8 (4.0)	84.6 (3.5)	79.5 (3.7)	87.3 (2.9)	73.4 (4.2)	67.5 (5.9)	77.7 (8.1)	83.0 (9.8)
Student portfolio	70.7 (3.5)	72.3 (2.8)	64.1 (6.8)	68.1 (4.6)	71.3 (4.4)	80.9 (3.6)	72.8 (3.9)	70.8 (4.4)	72.9 (5.7)	68.5 (9.2)	86.6 (8.8
Performance relative to the rest of the class	50.8 (3.8)	68.1 (2.9)	52.3 (7.0)	53.6 (4.8)	60.5 (4.7)	61.1 (4.5)	62.0 (4.2)	55.7 (4.7)	50.6 (6.3)	51.6 (9.7)	57.4 (12.7)
Special education											
Special projects	90.2 (2.2)	88.3 (5.0)	73.8 (2.8)	83.4 (3.0)	81.1 (3.2)	75.2 (6.5)	79.7 (4.1)	82.0 (4.1)	66.2 (3.8)	88. 6 (4.8)	74.8 (3.9
Tests	93.6 (1.9)	88.4 (5.0)	74.4 (2.7)	89.7 (2.4)	90.4 (2.4)	75.1 (6.6)	81.8 (3.9)	88.8 (3.3)	59.1 (3.9)	88.3 (4.9)	68.8 (4.2)
Homework	85.6 (2.7)	88.2 (5.0)	69.4 (2.9)	74.5 (3.5)	84.1 (3.0)	61.9 (7.3)	67.2 (4.7)	76.6 (4.5)	52.9 (4.0)	71.7 (6.8)	64.6 (4.3)
Performance relative to a set standard	78.5 (3.1)	89.2 (4.9)	63.8 (3.0)	79.5 (3.2)	75.5 (3.5)	71.2 (6.8)	69.4 (4.6)	74.5 (4.6)	58.9 (3.9)	72.8 (6.7)	62.4 (4.4)
Attitude/behavior	61.9 (3.7)	74.7 (6.7)	71.3 (2.8)	78.1 (3.3)	73.6 (3.6)	75.1 (6.5)	73.9 (4.4)	69.7 (4.8)	69.2 (3.7)	80.0 (6.1)	81.7 (3.5)
Attendance	67.6 (3.5)	67.3 (7.4)	69.6 (2.9)	73.5 (3.5)	66.6 (3.9)	69.8 (7.0)	61.9 (4.9)	63.6 (5.1)	52.6 (4.0)	66.1 (7.2)	68.6 (4.2)
Student portfolio	66.8 (3.6)	72.1 (7.0)	60.3 (3.1)	64.9 (3.8)	71.8 (3.7)	72.2 (6.8)	66.1 (4.7)	60.6 (5.2)	66.9 (3.8)	72.1 (6.8)	70.2 (4.2)
Performance relative to the rest of the class	41.9 (3.7)	29.8 (7.1)	28.2 (2.8)	37.6 (3.8)	45.7 (4.1)	29.7 (6.9)	26.6 (4.5)	38.8 (5.2)	22.8 (3.4)	32.4 (7.1)	22.6 (3.8)
Sample size											
General education	342	491	97	204	275	303	325	273	195	79	49
Special education	349	83	503	312	418	180	242	220	401	138	316

Standard errors are in parentheses.

- Students with emotional disturbances have teachers who place considerable emphasis on attendance, attitudes, and behaviors, but are less likely than students with many other types of disabilities to have teachers who emphasize student portfolios, for example.

Factors Used to Evaluate Student Performance: Grade-Level and Demographic Differences

- In general education language arts classes, the percentage of students with disabilities whose teachers consider their performance relative to their classmates, their attitude and behavior, or their portfolios as important in grading them diminishes with higher grade levels (Exhibit 8-3). The weight teachers place on other factors does not differ significantly.
- In special education language arts classes, the percentage of students whose teachers consider special projects, homework, or performance relative to the class increases with higher grade levels. The weight teachers place on other factors does not differ significantly.
- Several notable differences apply to students in ungraded programs. Their teachers are less likely than those of students at any grade level to use tests or homework in grading and are less likely than teachers of students in middle school to consider special projects as at least somewhat important. On the other hand, they are the most likely to consider students' attitude and behavior in grading.
- In general education settings, attendance is considered important in grading more often for students from lower-income families than for students from higher-income families.
- In general education settings, African-American and Hispanic students are somewhat more likely than white students to have teachers who consider attendance as important in grading. Teachers of Hispanic students are less likely than teachers of white or African-American students to consider homework as important.
- In special education settings, African-American and Hispanic students are more likely than white students to have teachers who consider special projects, homework, student portfolios, and performance relative to the class as important in grading. In addition, African-American students are more likely than white students to have teachers who consider attendance as important.

Exhibit 8-3
Factors Used to Evaluate Performance of Students with Disabilities in Language Arts Classes, by Demographic Characteristics and Instructional Setting

Percentage for whom factor is considered important in grading in:	Grade Level				Household Income			Race/Ethnicity			
	Ungraded	First through Third	Fourth and Fifth	Sixth and Above	$25,000 or Less	$25,001 to $50,000	More than $50,000	White	African American	Hispanic	Asian/ Pacific Islander
General education											
Special projects	--	95.7 (1.5)	96.1 (2.)	96.8 (1.3)	93.0 (2.3)	95.6 (1.8)	97.7 (1.2)	96.4 (.9)	93.9 (2.8)	96.6 (2.4)	98.1 (5.8)
Tests	--	96.3 (1.4)	97.2 (1.2)	94.8 (1.7)	95.7 (1.9)	95.0 (1.9)	96.1 (1.5)	96.1 (.9)	95.8 (2.4)	97.2 (2.1)	85.5 (14.7)
Homework	--	93.0 (1.9)	95.4 (1.5)	95.2 (1.6)	93.5 (2.3)	94.1 (2.1)	95.2 (1.7)	95.2 (1.0)	95.8 (2.4)	81.3 (3.6)	84.7 (15.0)
Class participation	--	85.9 (1.4)	95.0 (1.5)	89.7 (2.3)	93.2 (2.3)	94.0 (2.1)	93.9 (1.9)	93.1 (1.2)	94.2 (2.8)	94.4 (3.0)	97.8 (11.8)
Performance relative to a set standard	--	94.9 (1.6)	94.6 (1.6)	89.4 (2.3)	87.4 (3.1)	94.3 (2.0)	94.2 (1.8)	93.4 (1.2)	90.1 (3.6)	95.4 (2.8)	98.2 (5.5)
Attitude/behavior	--	86.8 (2.5)	82.3 (2.7)	72.7 (3.4)	81.0 (3.6)	77.9 (3.6)	80.7 (3.1)	79.6 (1.9)	80.4 (4.8)	83.7 (4.8)	99.1 (4.2)
Attendance	--	82.2 (2.8)	79.8 (2.8)	72.8 (3.4)	83.2 (3.4)	73.3 (3.8)	73.0 (3.5)	74.9 (2.1)	85.5 (4.2)	85.5 (4.6)	83.8 (15.3)
Student portfolio	--	77.7 (3.0)	69.4 (3.2)	67.2 (3.6)	71.0 (4.2)	72.5 (3.9)	69.2 (3.6)	68.2 (2.2)	77.6 (5.0)	82.6 (4.9)	84.9 (15.1)
Performance relative to the class	--	70.6 (3.3)	59.7 (3.4)	49.3 (3.8)	60.4 (4.5)	54.2 (4.3)	60.5 (3.8)	58.8 (2.3)	60.0 (5.9)	65.2 (6.2)	68.0 (19.4)
Special education											
Special projects	68.8 (5.9)	75.6 (3.8)	85.4 (2.7)	91.1 (2.1)	84.1 (2.9)	85.0 (3.5)	86.0 (3.8)	84.1 (2.0)	94.1 (3.2)	97.5 (4.4)	92.1 (12.0)
Tests	57.5 (6.8)	86.3 (3.1)	90.1 (2.3)	88.4 (2.4)	85.8 (2.7)	87.2 (3.3)	89.2 (3.4)	88.3 (1.8)	87.7 (2.9)	83.6 (5.0)	51.5 (22.8)
Homework	54.3 (6.8)	74.0 (3.9)	81.5 (3.0)	84.7 (2.6)	78.8 (3.2)	79.5 (3.9)	83.3 (4.1)	61.5 (2.7)	73.0 (3.9)	76.3 (5.7)	83.3 (16.5)
Class participation	89.6 (4.2)	88.0 (2.9)	92.8 (2.0)	92.7 (1.9)	94.2 (1.8)	89.2 (3.0)	91.6 (3.0)	89.2 (1.7)	94.4 (2.0)	97.1 (2.2)	98.2 (5.9)
Performance relative to a set standard	64.1 (6.6)	77.4 (3.8)	74.9 (3.3)	76.5 (3.1)	74.0 (3.4)	72.4 (4.4)	78.6 (4.5)	76.4 (2.4)	72.8 (3.9)	79.1 (5.5)	77.6 (18.5)
Attitude/behavior	81.7 (5.3)	68.1 (4.2)	70.0 (3.5)	65.1 (3.5)	69.3 (3.6)	66.5 (4.5)	76.5 (4.6)	66.7 (2.6)	69.9 (4.0)	71.2 (6.0)	87.6 (14.7)
Attendance	65.7 (6.5)	64.5 (4.3)	64.3 (3.7)	71.3 (3.3)	71.1 (3.6)	67.4 (4.6)	61.4 (5.3)	63.1 (2.7)	77.1 (3.7)	72.8 (5.9)	79.5 (18.8)
Student portfolio	63.9 (6.5)	68.9 (4.1)	71.1 (3.5)	61.0 (3.6)	69.0 (3.6)	59.7 (4.8)	64.5 (5.2)	61.5 (2.7)	73.0 (3.9)	76.3 (5.7)	83.3 (16.5)
Performance relative to the class	26.5 (6.0)	25.7 (3.9)	34.3 (3.6)	43.1 (3.7)	40.6 (3.9)	31.8 (4.5)	35.8 (5.2)	30.5 (2.6)	40.8 (4.4)	53.1 (6.7)	52.4 (23.0)
Sample size											
General education	2	848	928	762	537	590	876	1,958	333	252	49
Special education	328	742	904	984	1,014	703	654	1,876	794	423	52

Standard errors are in parentheses.

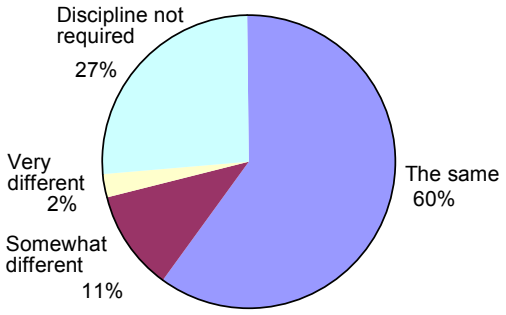
Discipline of Students with Disabilities in General Education Settings

Although evaluating student progress with regard to academics or IEP goals is essential, it also is important that the classroom environment be conducive to learning; maintaining discipline in the classroom is crucial to establishing a healthy learning environment. The topic of discipline was given considerable attention in the 1997 reauthorization of IDEA and is a general source of public concern. Issues related to discipline and students with disabilities are complicated because disciplinary actions must consider whether infractions reflect a student's disability and must reflect the obligation to provide education to students with disabilities under IDEA.

SEELS explored the discipline policies applied by general education language arts teachers to their students with disabilities. Teachers were asked to determine whether their students with disabilities were receiving the same discipline, somewhat different discipline, or very different discipline than other students in class, or whether no discipline was required for the students with disabilities in their classes.

- The majority of students with disabilities in general education classes are disciplined in ways comparable to other students in their classes (Exhibit 8-4); 13% of students have discipline policies that are somewhat or very different from those for other students.
- Almost 30% of students with disabilities in general education classes do not require discipline at all.

Exhibit 8-4
Discipline Practices for Students with Disabilities in General Education Language Arts Classes, Compared with Other Students in Class



Discipline Practices: Disability Category Differences

Teachers generally apply comparable disciplinary policies in the classroom across disability categories, with a few exceptions (Exhibit 8-5).

Exhibit 8-5
Discipline Practices for Students with Disabilities in General Education Language Arts Classes, by Disability Category

Percentage whose discipline is:	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabili-ties
Similar to others	56.4 (3.8)	64.6 (3.0)	56.5 (6.9)	41.0 (4.8)	55.7 (4.8)	61.6 (4.4)	51.6 (4.4)	60.8 (4.7)	32.3 (5.9)	40.7 (9.7)	37.5 (12.9)
Somewhat different	12.1 (2.5)	6.8 (1.6)	15.4 (5.0)	43.0 (4.8)	7.3 (2.5)	7.9 (2.5)	9.6 (2.6)	14.2 (3.4)	40.7 (6.2)	13.8 (6.8)	31.7 (12.4)
Very different	2.9 (1.3)	1.1 (0.7)	2.9 (2.3)	6.9 (2.5)	0.7 (0.8)	1.4 (1.1)	2.2 (1.3)	4.9 (2.1)	14.3 (4.4)	5.7 (4.6)	5.4 (6.0)
Not required	28.5 (3.5)	27.5 (2.8)	25.3 (6.0)	9.1 (2.8)	36.3 (4.6)	29.1 (4.1)	36.6 (4.2)	20.1 (3.9)	12.7 (4.2)	39.8 (9.6)	25.5 (11.6)
Sample size	335	485	98	201	274	300	324	265	195	77	49

Standard errors are in parentheses.

- Students with emotional disturbances, autism, traumatic brain injuries, or multiple disabilities are the most likely to be disciplined differently from other students in general education language arts classrooms; only 32% to 41% of these students are disciplined in the same way as other students.
- Students with speech impairments, visual impairments, and other health impairments are the most likely to be treated comparably to other students in the general education language arts classroom. Nevertheless, approximately 40% of these students are disciplined differently from other students in their classrooms.
- Students with hearing impairment, orthopedic impairment, or traumatic brain injury are the least likely of all students with disabilities to require any discipline at all.

Discipline Practices: Grade-Level and Demographic Differences

- Discipline practices do not vary for students with disabilities who differ in regard to grade level, household income, or racial/ethnic background.
- However, boys are more likely than girls to require discipline in general education language arts classrooms (77% vs. 65%). For students who require discipline, there is no difference between boys and girls with respect to being treated like other students in the classroom.

Summary

Teachers of students with disabilities consider a variety of factors to be important in determining students' grades, including factors related to student products (e.g., homework, tests) and processes (e.g., participation in class). However, teachers of students with disabilities in general education classes generally consider a wider variety of factors to be important than do teachers in special education language arts settings. The kinds of factors considered important in evaluating students also differ, with special education teachers placing less emphasis on projects, tests, homework, attitude, or attendance.

General education teachers of students with disabilities in the upper grades are less likely to consider several factors to be important in evaluating students' performance. In contrast, in special education settings, teachers are more likely to emphasize several factors in the upper grade levels. Several differences are noted for students who differ in other demographic characteristics, but no strong patterns emerge.

Teachers report that almost one-third of students with disabilities in general education classes do not need to be disciplined. However, when discipline is required, in most cases, teachers tend to use the same forms of discipline that they use with other students. Students with autism or emotional disturbances—disabilities that fundamentally involve behavioral and social adjustment issues—as well as students with traumatic brain injuries or multiple disabilities, are the most likely to be subject to different disciplinary practices than other students in their general education language arts classes.

9. Summary: Differences in Students' Classroom Experiences *by Jose Blackorby and Mary Wagner*

Language arts is a core academic content area for elementary and middle school students, both with and without disabilities. Because of numerous reports of students having poor language arts skills and the potential of direct intervention to improve those skills, reading and language arts are the focus of many legislative, policy, and practice reform efforts. For students with and without disabilities, language arts and reading begin with early acquisition of basic skills (e.g., print convention, decoding) and working with simple texts in the early elementary years. Over time, language arts instruction transitions to increasingly complex, higher order uses of language and communication, the mastery of which is essential for learning content in all other academic areas.

Although language arts instruction plays an important role in the education of students with disabilities across the disability spectrum, experiences with language arts vary dramatically for students who differ in a variety of student and classroom characteristics. The single most important distinguishing feature in those varied experiences is the setting in which instruction takes place. Students with disabilities whose primary language arts instruction takes place in a special education setting differ importantly from their peers in general education classes in the needs and abilities they bring to their learning experiences and in the instruction and support they receive in those settings. However, among students who share a given instructional setting, differences in instruction and support are apparent for those who differ in their primary disability, grade level, and other factors. Those differences are summarized below.

Diversity in Instructional Experiences

Efforts to improve student performance frequently address the organization and type of instruction students should receive. For example, NCLB seeks to ensure that students receive instruction that has been validated by rigorous evidence-based research. Although this report does not address the evidence base behind the instruction provided to students with disabilities, it describes the considerable diversity of language arts instructional activities and approaches they experience. Students with disabilities receive instruction in a variety of groupings, including whole-class, small-group, and individual instruction. Furthermore, for at least 40% of students, language arts instruction frequently includes activities such as class discussion, answering questions, taking tests, reading literature and informational materials, and practicing vocabulary and phonics. In addition, students receive an average of six accommodations or learning supports in language arts, such as increased time for tests or assignments, different or modified materials, tutors, and computer software. It is evident that schools and

teachers provide this range of instructional activities in varying combinations in their efforts to meet students' needs.

Yet, despite this diversity, some common threads run through the broader school experiences of students with disabilities. Importantly, almost all elementary and middle school students who receive special education services are general education students as well—virtually all spend some part of their school day in general education classes. Those who spend any part of their school day in those classes, on average, spend the majority of their day there. Thus, the "shared responsibility" of general and special education for achieving positive results for students with disabilities is readily apparent in their actual school experiences.

The Instructional Setting as a Reflection of Diverse Student Needs

For the last 25 years, the field of special education has been debating the merits of different types of educational settings in providing students with disabilities a free and appropriate public education in the least restrictive environment. This report has documented that the most prominent distinction in students' language arts experiences is the setting in which instruction takes place. Forty-five percent of elementary and middle school students with disabilities receive their primary language arts instruction in general education classes; the remainder receive it in special education settings—usually resource rooms, but also self-contained special education classes or one-to-one instruction. Students who represent the range of student characteristics, including ability levels and demographic backgrounds, can be found in both settings; as a group, however, students who receive their primary language arts instruction in special education settings differ dramatically from their peers with disabilities in general education classrooms. Instruction experiences also differ in many ways, as intended by the emphasis of federal special education policy since its inception on individualized approaches to helping students with disabilities achieve success.

Special education language arts classes are less than half the size of general education classes, containing an average of 10 students, and contrasting with the 23 students in the average general education class, among whom three receive special education services. But perhaps more important than their number are the differences in the characteristics of the students. Students in special education settings are more likely to bring to their learning experience a broader range of learning challenges than are their peers with disabilities in general education classes. For example, although both instructional settings have students in each disability category, students with more apparent cognitive and other learning challenges (e.g., those with mental retardation, autism, or multiple disabilities) are more likely to be in special education settings. Their functional abilities in many domains are more limited, including self-care, social, communication, and functional cognitive skills, and they are more likely to be in poorer health.

In addition to more significant challenges that may relate to their disabilities, students in special education settings also are more likely to exhibit other characteristics associated with learning challenges. Compared with their peers in general education classes, they are more likely to be living in poverty and in households with only one parent, with another person with a disability, and with a head of household who is poorly educated. Perhaps reflecting the difference in students' abilities, parents of students in special education settings tend to have lower expectations for their children's future achievements than do parents of students with disabilities in general education classes, and to be less active in supporting them at school.

With their generally more complex learning challenges, it is not surprising that the resources and instruction provided to students with disabilities in special education settings differ markedly from those provided to students with disabilities in general education classrooms. Special education language arts classrooms are more than twice as likely as general education language arts classrooms to include instructional aides. Having fewer students and more instructional staff, language arts classes in special education settings are more likely to include individual and small-group instruction than were general education classes. Although a diversity of general and reading-related activities occur in both settings, special education settings exhibit a greater emphasis on skills-oriented instruction, such as reading words at sight and phonics or phonemic skills, in contrast to the greater emphasis in general education classes on reading literature and informational materials and on writing. Further, although class work, tests, and special projects are the most commonly used means to determine grades in both settings, special education teachers place greater emphasis on in-class activities and less emphasis on attitudes or attendance in determining students' grades than their peers who teach general education classes.

Finally, the number and types of supports provided to teachers and students alike vary by setting. More accommodations are provided to more students who receive their language arts instruction in special education settings.

Disability Differences within Settings

Some kinds of experiences are notably different among students with different disabilities who share the same setting for language arts instruction. These differences suggest that the learning needs of students with different kinds of disabilities are reflected in students' instructional experiences, regardless of setting.

For example, among students with disabilities in general education language arts classes, some kinds of resources brought to bear to support students vary markedly for students with different disabilities. Whereas half of the students with traumatic brain injuries have special education teachers in their general education classrooms, no more than 20% of students with most other types of

disabilities do. Similarly, 66% of students with autism and 77% of students with multiple disabilities have classroom aides, one-on-one instructional assistants, or other specialists in their general education classrooms, compared with between 25% and 42% of students with other types of disabilities. Interpreters or readers are most often provided to students with hearing impairments in special education, but are not common for other students.

Instructional practices and accommodations also differ in some ways for students with different disabilities in the same setting. For example, more than half of students with multiple disabilities in general education classes receive individual instruction frequently, whereas only one in four students with speech impairments do so. More than half of students with speech impairments in general education language arts classes work independently, participate in class discussions, or respond orally to questions frequently, whereas about one-fourth of students with mental retardation in that setting participate in those activities frequently. Thus, schools may attempt to reflect the diversity of students' needs, not only in their placement decisions but also in individual teachers' practices within general and special education settings.

Other Differences in Instructional Settings

As with disability differences, many of the differences in instructional experiences of students who vary in demographic factors are related to the differences in their likelihood of being in general or special education settings. However, some differences within settings remain. For example, in both general education and special education settings, skill acquisition becomes less important over time. With grade-level progression, class sizes increase, as does the average number of special education students in general education classes. Further, special education settings increasingly rely on whole-class instruction as students move to middle school.

In addition, in general education classes, low income and African-American students are more likely than white students to receive individual instruction. They also are more likely than white students to concentrate on learning and practicing vocabulary. In these same settings, Asian and Pacific Islander students are much less likely than white students to engage in most of the skill-building language-arts activities.

What is special about special education? This report suggests that this often-asked question has no single answer. For some students with disabilities, language arts instruction closely resembles the instruction of their classmates in general education, and only modest numbers of supports are necessary. For others, language arts instruction occurs in special education settings with more individual attention and more extensive support. The diversity in language arts instruction points to the efforts of schools to accommodate a wide range of student needs. Future SEELS reports will examine the degree to which students benefit from the educational services they receive.

Appendix A
SEELS SAMPLING, DATA COLLECTION, AND ANALYSIS PROCEDURES: WAVE 1 SCHOOL DATA COLLECTION

This appendix describes several aspects of the SEELS methodology for the Wave 1 teacher survey, including:

- Sampling of districts, schools, and students.
- School data collection procedures and response rates.
- Weighting of the parent interview/questionnaire data.
- Estimation and use of standard errors.
- Measurement issues.
- Categorization of accommodations/learning supports into NCEO categories.

SEELS Sample Overview

The SEELS sample was constructed in two stages. A sample of 1,124 school districts was selected randomly from the universe of approximately 14,000 school districts that serve students receiving special education in at least one grade from first to seventh grade.[1] These districts and 77 state-supported special schools that serve primarily students with hearing and vision impairments and multiple disabilities were invited to participate in the study. A total of 245 districts and 32 special schools agreed to participate and provided rosters of students receiving special education in the designated age range, from which the student sample was selected.

The roster of all students receiving special education from each school district[2] and special schools was stratified by disability category. Students then were randomly selected from each disability category. Sampling fractions were calculated that would produce enough students in each category so that, in the final study year, we can generalize to most categories individually with an acceptable level of precision, accounting for attrition and for response rates to both the parent interview and the direct assessment. A total of 10,410 students were selected and eligible to participate in the SEELS teacher survey sample.

Details of the LEA and students samples are provided below.

The SEELS LEA Sample

Defining the Universe of LEAs

The SEELS sample includes only LEAs that have teachers, students, administrators, and operating schools—that is, "operating LEAs." It excludes the such units as supervisory unions; Bureau of Indian Affairs schools; public and private agencies, such as correctional facilities;

[1] The 1999 Quality Education Data, Inc. (QED) database was used to construct the sampling frame.

[2] School districts were instructed to include on the roster any student for which they were administratively responsible, even if the student was not educated within the district (e.g., attended school sponsored by an education cooperative or was sent by the district to a private school). Despite these instructions, some districts may have underreported students served outside the district.

LEAs from U.S. territories; and LEAs with 10 or fewer students in the SEELS age range, which would be unlikely to have students with disabilities.

The public school universe maintained by Quality Education Data (QED, 1998) was used to construct the sampling frame because it maintained more recent information than the alternative list maintained by the National Center for Education Statistics (1997). Correcting for errors and duplications resulted in a master list of 13,426 LEAs that were expected to have at least one student receiving special education in the appropriate age range. These comprised the SEELS LEA sampling frame.

Stratification

The SEELS LEA sample was stratified to increase the precision of estimates by eliminating between-strata variance, to ensure that low-frequency types of LEAs (e.g., large urban districts) were adequately represented in the sample, to improve comparisons with the findings of other research, and to make SEELS responsive to concerns voiced in policy debate (e.g., differential effects of federal policies in particular regions, LEAs of different sizes). Three stratifying variables were used:

Region. This variable captures essential political differences, as well as subtle differences in the organization of schools, the economic conditions under which they operate, and the character of public concerns. The regional classification variable selected was used by the Department of Commerce, the Bureau of Economic Analysis, and the National Assessment of Educational Progress.

District size (student enrollment). LEAs vary considerably by size, the most useful available measure of which is pupil enrollment. A host of organizational and contextual variables are associated with size that exert considerable potential influence over the operations and effects of special education and related programs. In addition, total enrollment serves as an initial proxy for the number of students receiving special education served by a district. The QED database provides enrollment data from which LEAs were sorted into four categories serving approximately equal numbers of students:

- **Very large** (estimated enrollment greater than 17,411 in grades 1 through 7).
- **Large** (estimated enrollment from 4,707 to 17,411 in grades 1 through 7).
- **Medium** (estimated enrollment from 1,548 to 4,706 in grades 1 through 7).
- **Small** (estimated enrollment between 10 and 1,547 in grades 1 through 7).

District/community wealth. As a measure of district wealth, the Orshansky index (the proportion of the student population living below the federal definition of poverty) is a well-accepted measure. The distribution of Orshansky index scores was organized into four categories of district/community wealth, each containing approximately 25% of the student population in grades 2 through 7:

- **High** (0% to 12% Orshansky)
- **Medium** (13% to 34% Orshansky).
- **Low** (35% to 45% Orshansky).

- **Very low** (over 45% Orshansky).

The three variables generate a 64-cell grid into which the entire universe was arrayed.

LEA Sample Size

On the basis of an analysis of LEAs' estimated enrollment across district size, and estimated sampling fractions for each disability category, 297 LEAs (and as many state-sponsored special schools as would participate) was considered sufficient to generate the student sample. Taking into account the rate at which LEAs were expected to refuse to participate, a sample of 1,124 LEAs was invited to participate, from which 297 participating LEAs might be recruited. A total of 245 LEAs actually provided students for the sample. Although the sample of LEAs was somewhat smaller than anticipated, analyses of the characteristics of the LEA sample, in weighted and unweighted form, on the sampling variables of region, LEA size, and LEA wealth confirmed that that the weighted LEA sample closely resembled the LEA universe with respect to those variables, thus yielding an initial sample of LEAs that was representative of the nation.

In addition to ensuring that the LEA sample matched the universe of LEAs on variables used in the sampling, it was important to ascertain whether this stratified random sampling approach resulted in skewed distributions on relevant variables not included in the stratification scheme. Two variables from the QED database were chosen to compare the "fit" between the first-stage sample and the population: the district's metropolitan status and the district's proportion of minority students. Analyses revealed that the fit between the weighted LEA sample and the LEA universe was quite good.

The SEELS Student Sample

Determining the size of the SEELS student sample took into account the duration of the study, desired levels of precision, and assumptions regarding attrition and response rates. We calculated that approximately three students would need to be sampled for each one student who would have both a parent/guardian interview and a direct assessment in Wave 3 of SEELS data collection.

The SEELS sample design emphasizes the need to generate fairly precise estimates of proportions and ratios for students receiving special education as a whole and for each of the 12 special education disability categories. A level of precision for standard errors of 3.6% was considered sufficient for study purposes. Thus, by sampling 1,150 students per disability category (except for TBI and deaf-blind) in year 1, we estimated there would be 388 students per category with both a parent interview and a direct assessment in year 5. Assuming a 50% sampling efficiency (which will tend to be exceeded for almost all disability categories), the 388 students would achieve a standard error of estimate of 3.6%. In addition, all students with traumatic brain injury or with deaf-blindness in participating LEAs and special schools were selected

SRI contacted LEAs and special schools to obtain their agreement to participate in the study and request rosters of students receiving special education who were between the ages of 6 and

12 on September 1, 1999 and in at least first grade.[3] Requests for rosters specified that they contain the names and addresses of students receiving special education under the jurisdiction of the LEA, the disability category of each student, and the students' birthdates or ages. Some LEAs would provide only identification numbers for students, along with the corresponding birthdates and disability categories. When students were sampled in these LEAs, identification numbers of selected students were provided to the LEA, along with materials to mail to their parents/guardians (without revealing their identity to SRI).

After estimating the number of students enrolled in special education in the SEELS age range, the appropriate fraction of students in each category was selected randomly from each district. In addition, from the state-supported special schools, 100% of students who were deaf-blind, 50% of students with visual impairments, and 15% of those with hearing impairments were sampled. In cases in which more than one child in a family was included on a roster, only one child was eligible to be selected. LEAs and special schools were notified of the students selected and contact information for their parents/guardians was requested.

School Data Collection

The data sources for the findings reported here were primary language arts teachers of SEELS sample members and teachers most knowledgeable of students' overall programs, who were sent questionnaires by mail. The SEELS conceptual framework holds that language arts instruction is central to the educational experiences of students with disabilities and that classroom context, curriculum, instruction, accommodations, and assessment are crucial to student outcomes and are most amenable to intervention. Language arts teachers are the most knowledgeable about these aspects of students' language arts programs. Further, student experiences span the school day and that content classes, related services, IEP goals, participation in district/state assessments all describe student experiences and relate to student progress. These data are best provided by teachers who are most knowledgeable about the student's program.

The first step in the school data collection process was to identify the current school attended by the sampled students during the 2000-2001 school year. School attendance data had been collected during the parent interview during the summer and fall of 2000. Parent responses relating to schools were coded (e.g., address, phone) using the Quality Education Data (QED) database. For identified schools not in the QED or for students for whom there was no complete parent interview, school district records collected for sampling were used. School attendance data was sent to schools for verification using the School Enrollment Form (SER). In addition to verification of attendance, the SER form requested that schools provide the name of the teacher who provided primary language arts instruction for the sampled student (for the teacher survey), as well as the name of the teacher who was most knowledgeable about the student's overall school program (for the school program questionnaire).

In March 2001, packets were sent to each school (n=3,827), which included a teacher questionnaire for each sample member, a school program questionnaire for each sample member, and a single school characteristics questionnaire for the school. A second packet was sent in April 2001. Additional mailings were conducted to individual teachers in May 2001 and

[3] Students who were designated as being in ungraded programs also were sampled if they met the age criteria.

September 2001. By December 2001, completed teacher questionnaire were returned for 6,250 out of 10,410 eligible sample members (60% response), and completed school program questionnaire were returned for 6,213 out of 10,410 eligible sample members (59% response).

Weighting the Wave 1 Teacher Questionnaire Data

In describing students with disabilities, we generally report percentages of students with a particular characteristic, status, or experience (e.g., the percentage of students living with a single parent or having moderate hearing loss). Percentages are weighted to represent the U.S. population of students receiving special education who were ages 6 to 12 on September 1, 1999 and in at least first grade. They are not percentages of the sample, but estimates for the population of students with disabilities in the SEELS age range as a whole and for students in each of the federal special education disability categories in use in 1999. In other words, rather than each student counting equally in calculating percentages, each student's value for a variable is weighted proportionate to the number of students like him/her nationally. Hence, for example, values for students with learning disabilities are weighted more heavily than those for students with visual impairments when discussing students as a group because of the significantly greater number of students with learning disabilities in the population as a whole.

Exhibit A-1 illustrates the concept of sample weighting and its effect on percentages or means that are calculated for students with disabilities as a group. In this example, 12 students are included in a sample, 1 from each of 12 disability groups, and each has a hypothetical value regarding whether that student participated in organized group activities outside of school (1 for yes, 0 for no). Six students participated in such activities, which would result in an unweighted sample mean of 50% participating. However, this would not accurately represent the national population of students with disabilities because many more students are classified as having a learning disability or speech impairment than orthopedic or other health impairments, for example. Therefore, in calculating a population estimate, we apply weights in the example that correspond to the proportion of students in the population that are from each disability category (actual SEELS weights account for disability category and several aspects of the districts from which they were chosen). The sample weights for this example appear in column C. Using these weights, the weighted population estimate is 89%. The percentages in all SEELS tables are similarly weighted population estimates, whereas the sample sizes are the actual number of cases on which the weighted estimates are based (similar to the 12 cases in Exhibit A-1).

Exhibit A-1
EXAMPLE OF WEIGHTED PERCENTAGE CALCULATION

Disability Category	A Number in Sample	B Participated in Group Activities	C Weight for Category	D Weighted Value for Category
Learning disability	1	1	4.3	4.3
Speech/language impairment	1	1	3.0	3.0
Mental retardation	1	1	1.0	1.0
Emotional disturbance	1	0	.8	0
Hearing impairment	1	1	.1	.1
Visual impairment	1	1	.1	.1
Orthopedic impairment	1	0	.1	0
Other health impairment	1	1	.4	.4
Autism	1	0	.1	0
Multiple disabilities	1	0	.1	0
TOTAL	10	6	10	8.9
	Unweighted sample percentage = 60% (Column B total divided by Column A total)		Weighted population estimate = 89% (Column D total divided by Column C total)	

Sample Weighting

The students in LEAs and state schools parent interview/survey data were weighted to represent the universe of students in LEAs and state schools using the following process:

- For each of the 64 LEA sampling cells, an LEA student sampling weight was computed. This weight is the ratio of the number of students in participating LEAs in that cell divided by the number of students in all LEAs in that cell in the universe of LEAs. The weight represents the number of students in the universe who are represented by each student in the participating LEAs. For example, if participating LEAs in a particular cell served 4,000 students and the universe of LEAs in the cell served 400,000 students, then the LEA student sampling weight would be 100.
- For each of the 64 LEA cells, the number of students in each disability category was estimated by multiplying the number of students with that disability on the rosters of participating LEAs in a cell by the adjusted LEA student sampling weight for that cell. For example, if 350 students with learning disabilities were served by LEAs in a cell, and the LEA student sampling weight for that cell were 100 (that is, each student in the sample of participating LEAs in that cell represented 100 students in the universe), then we would estimate there to be 35,000 students with learning disabilities in that cell in the universe.
- For the state schools, the number of students in each disability category was estimated by multiplying the number of students with that disability on the rosters by the inverse of the proportion of state schools that submitted rosters.
- The initial student sampling weights were adjusted by disability category so that the sum of the weights (that is, the initial student sampling weights multiplied by the number of

students with completed interviews) was equal to the number of students in the geographical and wealth cells of each size strata. The adjustments were typically small and essentially served as a nonresponse adjustment. However, the adjustments could become substantial when there were relatively few interviewees (as occurred in the small and medium strata for the lowest-incidence disabilities) because in these cases, there might not be any interviewees in some cells, and it was necessary to adjust the weights of other interviewees to compensate. Two constraints were imposed on the adjustments: 1) within each size stratum, the cells weights could not vary from the average weight by more than a factor of 2, and 2) the average weight within each size strata could not be larger than 5 times the overall average weight. These constraints substantially increased the efficiency of the sample at the cost of introducing a small amount of weighting bias (discussed below).

- In a final step, the weights were adjusted so that they summed to the number of students in each disability category, as reported to OSEP by the states for the 1999-2000 school year (OSEP, 2001).

Bias

As mentioned earlier, the imposition of constraints on the adjusted weights increased sampling efficiency at the cost of introducing a small amount of bias. The largest increases in sampling efficiency and the largest biases occurred for the categories of autism and visual impairment; the smallest increase in efficiency and biases occurred for specific learning disabilities. The principal bias for autism was the reduction in the proportion of students from the Northeast (from 22% to 18%), from the West/Southwest (from 34% to 30%) and from small LEAs (from 16% to 13%). The principal bias for visual impairment is in small LEAs (from 12% to 4%), in very wealthy LEAs (from 20% to 17%). For learning disability, all biases introduced by the imposition of constraints on the student weights are negligible. Considering the increase in sampling efficiency for autism (from 23% to 53%) and visual impairment (from 18% to 53%), we consider these biases to be acceptable.

The reason for the reduction in the proportion of students represented in the cells mentioned above is that there were relatively few students with interview/survey data in those cells. For example, in small LEAs, there were only six students with visual impairments with data, requiring that they represent an estimated 1,771 students with visual impairments from small LEAs. The weighting program determined that the average weight required (i.e., 295) violated the constraints, and therefore reduced these weights to a more reasonable value (i.e., 84.4).

Approach to Estimating Standard Errors

The SEELS sample is both stratified and clustered, so that calculation of standard errors by formula is not straightforward. Standard errors for means and proportions can also be estimated using pseudo-replication, a procedure that is widely used by the U.S. Census Bureau and other federal agencies involved in fielding complex surveys. To that end, we developed a set of weights for each of 50 half-replicate subsamples. Each half-replicate involved randomly selecting half of the total set of LEAs that provided contact information and then weighting that half to represent the entire universe. Randomization was accomplished within each of the 64

sampling cells. The half-replicates were used to estimate the variance of a sample mean by: 1) calculating the mean of the variable of interest on the full sample and each half-sample using the appropriate weights; 2) calculate the squares of the deviations of the half-sample estimate from the full sample estimate; and 3) adding the squared deviations and divide by (n-1) where n is the number of half-replicates.

Although the procedure of pseudo-replication is less unwieldy than development of formulas for calculating standard errors, it is not easily implemented using the Statistical Analysis System (SAS), the analysis program used for SEELS, and it is computationally expensive. In the past, we have found that it was possible to develop straightforward estimates of standard errors using the effective sample size.

When respondents are independent and identically distributed, the effective sample size for a weighted sample of N respondents can be approximated as Neff = N x (E^2[W] / (E^2[W] + V[W])) where Neff is the effective sample size, E^2[W] is the square of the arithmetic average of the weights and V[W] is the variance of the weights. For a variable X the standard error of estimate can typically be approximated by sqrt (V[X]/Neff), where V[X] is the weighted variance of X.

SEELS respondents are not independent of each other because they are clustered in LEAs and the intra-cluster correlation is not zero. However, the intra-cluster correlation traditionally has been quite small, so that the formula for the effective sample size shown above has worked well. To be conservative, however, we multiplied the initial estimate by a "safety factor" that assures that we will not underestimate the standard error of estimate.

To determine the adequacy of fit of the variance estimate based on the effective sample size and to estimate the required safety factor, we selected 24 questions with 95 categorical and 2 continuous responses. We calculated standard errors of estimates for each response category and the mean response to each question for each disability group using both pseudo-replication and the formula involving effective sample size. A safety factor of 1.25 resulted in the effective sample size standard error estimate underestimating the pseudo-replicate standard error estimate for 92% of the categorical responses and 89% of the mean responses. Because the pseudo-replicate estimates of standard error are themselves estimates of the true standard error, and are therefore subject to sampling variability, we considered this to be an adequate margin of safety. All standard errors in Wave 1 are 3% or less, except for categories of deaf-blindness and traumatic brain injury, where sample sizes are very small.

Measurement Issues

The chapters in this report include information on specific variables included in analyses. However, several general points about SEELS measures that are used repeatedly in analyses should be clear to readers as they consider the findings reported here.

Categorizing students by primary disability. Information about the nature of students' disabilities came from rosters of all students in the SEELS age range receiving special education in the 1999-2000 school year under the auspices of participating LEAs and state-supported

special schools. In data tables included in this report, students are assigned to a disability category on the basis of the primary disability designated by the student's school or district. Definitions of disability categories and criteria and methods for assigning students to them vary from state and to state and even between districts within states. Because we have relied on category assignments made by schools and districts, SEELS data should not be interpreted as describing students who truly had a particular disability, but rather as describing students who were categorized as having that disability by their school or district. Hence, descriptive data are nationally generalizable to students in the SEELS age range who were classified as having a particular disability in the 1999-2000 school year.

Demographic characteristics. Findings in this report are provided for students who differ in age, gender, household income, and race/ethnicity. For the majority of students, age, gender, and race/ethnicity were determined from data provided by students' schools or districts for sampled students. For students for whom information was not provided by schools or districts, data for these variables were gathered during the parent interview. Classifying the household income of students' households relied exclusively on information provided during the parent interview/survey.

Comparisons with the general population of students. Many of the analyses reported here do not have precise statistical comparisons with the general population of students. Instead, we have drawn comparisons using published data. For many of these comparisons, differences in samples (e.g., ages of students) or measurement (e.g., question wording on surveys) reduce the direct comparability of SEELS and general population data. Where these limitations affect the comparisons, they are pointed out in the text and the implications for the comparisons are noted. Comparisons using data from the National Household Education Survey (NHES) are more precise because an analysis file was created from the publicly available data to match the age of SEELS students.

Variable Creation

Categorizing Student Accommodations. The teacher survey addressed the receipt of 24 separate accommodations and supports. These were coded into the NCEO categories of timing, presentation, response, setting, or other. The categorization plan is included below in Exhibit A-2. Note that some accommodations included more than one category.

Exhibit A-2
CATEGORIZATION OF STUDENT ACCOMMODATIONS INTO NCEO CATEGORIES

C9_D6 Item	ITEM	NCEO Category(ies)
1	More time in taking tests	Timing
2	Test read to student	Presentation
3	Modified tests	Presentation
4	Alternative tests or assessments	Presentation
5	Modified grading standards	Response
6	Slower-paced instruction	Presentation
7	Additional time to complete assignments	Timing
8	Shorter or different assignments	Presentation Response
9	More frequent feedback	Presentation
10	Physical adaptations	Setting
11	Reader or interpreter	Presentation
12	Teacher aides, instructional assistants, or other personal aides.	Presentation
13	Student progress monitored by special education teacher or related services provider	Other
14	Peer Tutor	Presentation Response
15	Tutoring by an adult	Presentation Response
16	Behavior management program	Other
17	Learning strategies/study skills assistance	Presentation Response
18	Self-advocacy training	Other
19	Books on tape	Presentation
20	Communication aids	Presentation
21	Use of computer for activities not allowed for other students	Presentation
22	Computer software designed for students with disabilities	Presentation Response
23	Computer hardware adapted for student's unique needs	Presentation Response
24	Other	Other

Appendix B
Standard Errors for Exhibits Displaying Data in Chart Format

Standard errors for Exhibit 4-2 (Average Number of Students in Language Arts Classes, by Disability Category and Instructional Setting)

	Total	LD	SP	MR	SED	HI	VI	OI	OHI	AUT	TBI	MULT
General education												
Students without disabilities	(.2)	(.4)	(.3)	(.7)	(.5)	(.6)	(.5)	(.4)	(.6)	(.8)	(1.4)	(1.2)
Students with disabilities	(.1)	(.3)	(.2)	(.4)	(.3)	(.3)	(.2)	(.3)	(.3)	(.3)	(.9)	(.6)
All students	(.2)	(.4)	(.3)	(.7)	(.5)	(.6)	(.5)	(.4)	(.6)	(.8)	(1.8)	(1.3)
Special education												
Students without disabilities	(.2)	(.3)	(.9)	(.3)	(.3)	(.3)	(.5)	(.4)	(.5)	(.3)	(.7)	(.3)

Standard errors for Exhibit 4-5 and 4-6 (Average Percentage of Students in Language Arts Classes Rated by Teachers at Various Reading Levels, by Disability Category and Instructional Setting)

	Total	LD	SP	MR	SED	HI	VI	OI	OHI	AUT	TBI	MULT
General education												
Much below average	(0.5)	(1.1)	(0.6)	(1.2)	(1.5)	(1.1)	(1.2)	(1.3)	(0.9)	(1.5)	(5.1)	(3.1)
Somewhat below avg.	(0.7)	(1.5)	(1.0)	(3.0)	(1.7)	(2.0)	(1.4)	(1.2)	(1.5)	(1.6)	(4.1)	(2.4)
Average	(0.9)	(1.7)	(1.3)	(2.8)	(2.3)	(2.2)	(2.1)	(1.9)	(2.1)	(2.9)	(4.7)	(6.4)
Somewhat above avg.	(0.6)	(1.0)	(0.9)	(1.5)	(1.5)	(1.3)	(1.7)	(1.1)	(1.3)	(1.5)	(2.2)	(3.1)
Much above average	(0.6)	(0.9)	(1.0)	(1.7)	(1.3)	(1.7)	(1.5)	(1.5)	(1.4)	(2.2)	(3.2)	(3.8)
Special education												
Much below average	(1.6)	(2.7)	(5.3)	(2.2)	(2.9)	(3.0)	(5.2)	(3.6)	(3.9)	(2.7)	(6.0)	(3.1)
Somewhat below avg.	(1.4)	(2.4)	(4.8)	(1.8)	(2.5)	(2.5)	(4.1)	(2.7)	(3.5)	(2.2)	(5.5)	(2.3)
Average	(0.8)	(1.3)	(2.9)	(0.9)	(1.8)	(1.4)	(2.2)	(1.6)	(2.2)	(1.2)	(2.1)	(1.4)
Somewhat above avg.	(0.3)	(0.5)	(1.1)	(0.2)	(0.7)	(0.8)	(0.9)	(0.6)	(0.9)	(0.4)	(0.1)	(0.4)
Much above average	(0.2)	(0.4)	(0.6)	(0.4)	(0.6)	(0.5)	(1.1)	(0.3)	(0.6)	(0.3)	(0.6)	(0.2)

Standard errors for Exhibit 4-7, 4-8, and 4-9 (Average Percentage of Students in Language Arts Classes Rated by Teachers at Various Reading Levels, by Grade Level, Household Income, Race/Ethnicity and Instructional Setting)

	1st through 3rd	4th and 5th	6th and above	Ungraded	$25,000 or less	$25,001 to $50,000	More than $50,000	White	African American	Hispanic	Asian
General education											
Much below average	(0.7)	(0.8)	(1.1)	--	(1.1)	(1.1)	(0.7)	(0.5)	(1.2)	(2.2)	(3.2)
Somewhat below avg.	(1.1)	(1.1)	(1.5)	--	(1.9)	(1.3)	(1.3)	(0.8)	(2.4)	(2.2)	(4.7)
Average	(1.6)	(1.4)	(1.8)	--	(2.1)	(1.8)	(1.6)	(1.0)	(2.4)	(3.1)	(7.4)
Somewhat above avg.	(1.0)	(0.9)	(1.0)	--	(1.2)	(1.0)	(1.2)	(0.7)	(1.5)	(1.6)	(3.5)
Much above average	(1.1)	(0.9)	(1.2)	--	(1.1)	(1.3)	(1.4)	(0.7)	(1.1)	(2.1)	(4.4)
Special education											
Much below average	(3.4)	(2.9)	(2.6)	(3.9)	(2.8)	(3.3)	(4.0)	(2.1)	(3.2)	(4.9)	(11.9)
Somewhat below avg.	(2.8)	(2.6)	(2.3)	(3.0)	(2.4)	(3.0)	(3.6)	(1.8)	(2.7)	(4.1)	(8.3)
Average	(1.8)	(1.4)	(1.2)	(1.6)	(1.3)	(1.6)	(2.4	(0.5)	(1.4)	(2.2)	(5.8)
Somewhat above avg.	(0.7)	(0.5)	(0.4)	(0.5)	--	--	--	--	--	--	--
Much above average	(0.4)	(0.5)	(0.4)	(0.4)	--	--	--	--	--	--	--

Standard errors for Exhibit 4-10 (Certification of Language Arts Teachers of Students with Disabilities in Regular and Special Education Settings)

	Regular/standard/ advanced certificate	Probationary/ provisional/te mporary certificate	Emergency certificate	Other certificate
General education	(1.3)	(1.1)	(0.6)	(0.3)
Special education	(1.6)	(1.3)	(0.8)	(0.7)

Standard errors for Exhibit 4-12 (Types of Certificate Held by Language Arts Teachers of Students with Disabilities)

	General education credential	Special education credential	Disability-specific credential	No credential
General education	(1.0)	(1.3)	(0.9)	(0.5)
Special education	(2.1)	(1.7)	(1.7)	(0.6)

Standard errors for Exhibit 4-14 (Type of Preparation Program of Language Arts Teachers of Students with Disabilities)

	Bachelor's, master's, 5th-year program	Continued professional development	Alternative program
General education	(0.9)	(0.6)	(0.7)
Special education	(1.2)	(0.6)	(0.9)

Standard errors for Exhibit 4-15 (Educational Level of Language Arts Teachers of Students with Disabilities

	Bachelor's, degree	Bachelor's degree +1 year	Master's degree	Ed spec, 1 year past master's	Other
General education	(1.9)	(1.9)	(2.0)	(1.0)	(0.4)
Special education	(1.8)	(1.9)	(2.0)	(1.2)	(0.6)

Standard errors for Exhibit 5-1 and 5-3 (Students Whose Teachers Used Instructional Groupings "Often" by Instructional Setting and Grade Level)

	Total	**1st through 3rd**	**4th and 5th**	**6th and above**	**Ungraded**
General education					
Whole class	(1.8)	(3.1)	(3.1)	(3.2)	--
Small group	(2.0)	(3.6)	(3.5)	(3.2)	--
Individual/teacher	(1.9)	(3.4)	(3.3)	(3.3)	--
Special education					
Whole class	(2.1)	(4.3)	(3.7)	(3.6)	(6.2)
Small group	(2.0)	(3.3)	(3.3)	(3.6)	(5.8)
Individual/teacher	(2.1)	(4.2)	(3.7)	(3.6)	(6.0)

Standard errors for Exhibit 5-5 and 5-7 (Frequently Used General Instructional Activities by Instructional Setting and Grade Level)

	Total	1st through 3rd	4th and 5th	6th and above	Ungraded
General education					
Works independently	(2.1)	(3.5)	(3.5)	(3.8)	
Takes quizzes or tests	(2.1)	(3.6)	(3.5)	(3.8)	--
Responds orally to questions	(2.1)	(3.6)	(3.5)	(3.8)	--
Participates in class discussion	(2.1)	(3.6)	(3.5)	(3.7)	--
Works on a project or presentation	(1.8)	(2.7)	(3.1)	(3.5)	--
Special education					
Works independently	(2.1)	(4.1)	(3.8)	(3.7)	(5.8)
Takes quizzes or tests	(2.1)	(4.3)	(3.7)	(3.7)	(5.0)
Responds orally to questions	(2.0)	(3.8)	(3.4)	(3.5)	(6.1)
Participates in class discussion	(2.1)	(4.3)	(3.6)	(3.6)	(6.1)
Works on a project or presentation	(1.6)	(2.3)	(2.9)	(3.1)	(3.2)

Standard errors for Exhibit 5-9 and 5-11 (Frequent Reading Activities by Instructional Setting and Grade Level)

	Total	1st through 3rd	4th and 5th	6th and above	Ungraded
General education					
Practices/learns vocabulary	(2.0)	(3.3)	(3.4)	(3.8)	--
Reads silently	(2.0)	(3.3)	(3.3)	(3.8)	--
Completes a writing assignment	(2.0)	(3.5)	(3.4)	(3.8)	--
Reads literature	(2.1)	(3.6)	(3.5)	(3.8)	--
Reads informational materials	(2.0)	(3.6)	(3.5)	(3.4)	--
Reads aloud	(2.0)	(3.6)	(3.4)	(3.2)	--
Phonics or phonemic skills	(1.9)	(3.6)	(2.9)	(2.3)	--
Sight word reading	(1.9)	(3.6)	(3.0)	(2.7)	--
Special education					
Practices/learns vocabulary	(2.0)	(3.6)	(3.3)	(3.5)	(6.1)
Reads silently	(2.1)	(4.1)	(3.7)	(3.5)	(5.1)
Completes a writing assignment	(2.1)	(4.3)	(3.7)	(3.7)	(5.6)
Reads literature	(2.0)	(3.8)	(3.6)	(3.5)	(5.3)
Reads informational materials	(1.9)	(3.4)	(3.4)	(3.4)	(5.0)
Reads aloud	(2.1)	(4.2)	(3.6)	(3.7)	(5.9)
Phonics or phonemic skills	(2.1)	(3.5)	(3.6)	(3.5)	(6.2)
Sight word reading	(2.1)	(4.2)	(3.7)	(3.5)	(6.1)

Standard errors for Exhibit 6-1 (Student Information Provided to General Education Teachers Before the Enrollment of Students with Disabilities in Their Classes)

	Total
Some type of information provided	(1.3)
Student IEP	(1.9)
Student academic abilities or previous performance	(2.1)
Instructional modifications/adaptations	(2.4)
Student social/behavioral	(2.4)
Instructional modifications/adaptations	(2.4)
Grading modifications	(2.1)
Behavioral support plan	(1.9)

Standard errors for Exhibit 6-3 (Supports Made Available to General Education Teachers)

	Total
Any type of support provided to teacher	(1.0)
Special materials to use	(2.0)
In-service training on special needs of students	(2.0)
Co-teaching/team teaching	(4.8)
Special procedures	(2.3)
Consultation services by special education	(2.3)
Teacher aides	(2.1)
Smaller student load	(1.5)
No support needed	(1.3)

Standard errors for Exhibit 6-5 (General Education Language Arts Teacher's Perceptions of Adequacy of Training and Support to Teach Students with Special Needs)

	I am given the support I need to teach students with special needs	I have adequate training for teaching students with special needs
Strongly disagree	(0.7)	(0.7)
Disagree	(1.6)	(1.8)
Agree	(2.1)	(2.1)
Strongly agree	(1.8)	(1.7)

Standard errors for Exhibit 7-2 (Accommodations and Supports Provided to Students with Disabilities, by Instructional Setting)

	General Education	Special Education
Any support on the IEP or 504 plan	(1.7)	(0.4)
Accommodations/modifications		
More time in taking tests	(2.3)	(1.7)
More time to complete assignments	(2.4)	(1.7)
Shorter/different assignments	(2.3)	(2.0)
Test read to student	(2.3)	(2.0)
Modified test	(2.3)	(2.1)
More frequent feedback	(2.3)	(2.0)
Slower-paced instruction	(2.2)	(1.7)
Modified grading standards	(2.2)	(2.1)
Physical adaptations	(2.0)	(1.8)
Alternative tests/assignments	(2.2)	(2.1)
Other learning supports		
Progress monitored by special education teacher	(2.4)	(1.9)
Teacher aides, instructional assistants or other personal aides	(2.1)	(2.1)
Learning strategies/study skills	(2.0)	(2.1)
Peer tutor	(2.0)	(1.7)
Tutoring by adult	(1.9)	(1.3)
Books on tape	(1.7)	(1.8)
Self-advocacy training	(1.7)	(1.1)
Computer not allowed for other students	(1.5)	(1.7)
Reader or interpreter	(1.5)	(1.5)
Behavior management program	(1.4)	(1.9)
Software for special needs	(0.9)	(1.7)
Communication aids	(0.8)	(0.8)
Hardware for special needs	(0.7)	(0.8)

Standard errors for Exhibit 7-5 (Teachers' Ratings of the Adequacy of Educational Supports Provided to Students)

	Total
Very adequate	(2.3)
Somewhat adequate	(2.2)
Not very adequate/not at all adequate	(1.2)

Standard errors for Exhibit 8-1 (Factors Considered Important in Evaluating Student Performance)

	Total
General education	
Daily class work	(1.7)
Special projects	(2.1)
Tests	(2.0)
Homework	(2.1)
Class participation	(2.1)
Performance relative to a set standard	(2.0)
Attitude/behavior	(2.1)
Attendance	(2.1)
Student portfolio	(2.1)
Performance relative to rest of the class	(2.0)
Special education	
Daily class work	(1.5)
Special projects	(2.2)
Tests	(2.2)
Homework	(2.2)
Class participation	(2.2)
Performance relative to a set standard	(2.2)
Attitude/behavior	(2.2)
Attendance	(2.1)
Student portfolio	(2.1)
Performance relative to rest of the class	(2.0)

Standard errors for Exhibit 8-4 (Discipline Applied to Students with Disabilities in General Education Language Arts Classes, Compared with Other Students in the Class)

	Total
The same	(2.0)
Somewhat different	(1.3)
Very different	(0.6)
Discipline not required	(1.8)