SRI International

SPECIAL EDUCATION ELEMENTARY LONGITUDINAL STUDY (SEELS)

REVISED TIMELINE AND DATA COLLECTION, SAMPLE, AND ANALYSIS PLANS

SRI Project 3421

CONTENTS

TABLES/FIGURE

1. INTRODUCTION

The Office of Special Education Programs (OSEP) of the U.S. Department of Education has commissioned a design for the Special Education Elementary Longitudinal Study (SEELS), which is being developed by SRI International, with support from the Research Triangle Institute.

As part of a comprehensive OSEP program of longitudinal research related to the 1997 Individuals with Disabilities Education Act (IDEA97), SEELS is intended to involve a large, nationally representative sample of students in special education who are ages 8 through 12 when the sample is selected (fall 1999). Information generated from SEELS will represent special education students nationally as a group, each federal special education disability category, and each single-year age cohort. Information about students will be collected repeatedly as they transition from elementary to middle school and from middle to high school. The study will investigate the numbers of domains that influence student outcomes, including student characteristics, family characteristics, school characteristics and policies, school programs, and nonschool factors. Table 1-1 depicts the planned data collection and analysis activities over the 6 planned years of the study.

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OVERVIEW OF SEELS DATA COLLECTION</td></tr>
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1999-2000</td><td>Year 2
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SEELS will ultimately provide the first national picture of the experiences and outcomes of students in special education as they move through these crucial years of their educational careers. This report outlines current thoughts as to the study's timeline, data collection, sample construction, and analysis and dissemination approaches.

2. SEELS TIMELINE

The Special Education Elementary Longitudinal Study is expected to be a 6-year[1] project that will involve three main data collection components, each collected in three waves. The three components of data collection are:

- Parent interviews. Parents will be contacted for telephone interviews about children's experiences and outcomes.

- Student data collection.

  - Direct assessments. The academic performance of students will be measured, in part, through direct assessments of children that will be performed by on-site professionals (not the students' teachers) who are recruited and trained for that purpose (e.g., the district's psychologist).

  - Student interview. The assessment event also will be a time to collect some interview information directly from students.

- School data collection.

  - Language arts teacher survey. For each individual student, data will be collected from the language arts teacher about the classroom practices and the student's performance in that particular classroom.

  - School program survey. The special education teacher or other school staff member who is best able to describe each student's overall school program will be surveyed for information about the student's school program and performance more broadly (e.g., days absent from school, instructional settings that comprise the student's whole school experience).

  - School background survey. Completing the school data collection will be a survey of principals, who will provide information on the characteristics of the schools and data on aggregate measures of school performance.

In addition, an optional data collection component involves an in-person parent interview of nonrespondents to the parent telephone survey to assess and correct for potential sample bias in the telephone interview sample.

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[1] If government contracting regulations permit a 6-year contract, that would be the most efficient mechanism for commissioning the study. If there is a 5-year limit on contracts, issuing two overlapping contracts is a feasible alternative, with the first 4-year effort covering the first two waves of data collection and analyses of those data, and a second contract covering preparation for and conduct of the third wave of data collection and the final longitudinal analyses of the three waves of data (years 4, 5, and 6).

Parent interviews will be conducted in the spring/summer[1] of year 1 (school year 1999-2000), year 3 (school year 2001-2002), and year 5 (school year 2003-2004), which will enable analysts to plot trends over time in factors reported by parents. Student and school data collection will be conducted in years 2, 3, and 5. The optional nonresponse study would be conducted in year 2. Data analyses will be conducted as each wave of data is completed, with the final year of the 6-year project being devoted to comprehensive analyses of the full longitudinal data set.

A more detailed timeline of major project activities is presented below.

Table 2-1 SEELS TIMELINE	
Date	**Activity**
YEAR 1, SCHOOL YEAR 1999-2000	
	Select student sample
10/99	Contact sample LEAs/special schools to request rosters of students.
10/99-3/00	Follow up with nonresponding LEAs/special schools to obtain rosters.
10/99-3/00	Receive student rosters; select students using specified sampling fractions for age and disability category.
11/99-4/00	Contact parents of sampled students to inform of study participation and request consent for direct assessment and access to school records.
	Parent interviews, wave 1
3/00-6/00	Conduct wave 1 parent interviews.
7/00-8/00	Prepare parent interview data for analysis.
	Direct assessment, wave 1
3/00-9/00	Prepare training materials for on-site professionals who will do direct assessments.
	Student tracking
Ongoing	Conduct tracking procedures to minimize sample attrition.
YEAR 2, SCHOOL YEAR 2000-2001	
	Parent interviews, Nonresponse Study
9/00-11/00	OPTION: Conduct in-person parent interviews in nonresponding households in high nonresponse communities for sample bias analysis.
	Analysis and reporting
12/00	Construct weights.
1/01-4/01	Analysis of wave 1 parent interview data.
5/01	Submit draft report on wave 1 of parent interview data.
7/01	Submit final report on wave 1 of parent interview data.
	School data collection, wave 1
11/00-2/01	Contact schools to confirm student attendance.* Implement follow-up procedures.
11/00-1/01	Track mobile students to identify schools they currently attend.

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[1] The study contractor should make every effort to contact parents before the close of the 1999-2000 school year. However, because of potential delays in recruiting the student sample, some interviews may need to be conducted during the summer.

	Table 2-1 (Continued) SEELS TIMELINE	
2/01-5/01	Mail wave 1 teacher survey and school program survey to principals for distribution to appropriate school staff who can best respond for individual students. Implement follow-up survey procedures.
2/01-5/01	Mail wave 1 principal survey to principals of all schools attended by sample students. Implement follow-up survey procedures.
6/01-8/01	Prepare school data for analysis.
7/01-8/01	Contact parents by mail to identify school student is expected to attend in fall, year 3, school year 2001-2002.
	Direct assessment, wave 1
11/00-12/00	Contact LEAs/special schools to identify person to do direct assessment at each site.
12/00-2/01	Contract with individuals to conduct direct assessments at each site. Distribute training materials.
2/01-5/01	Conduct direct assessments. Implement follow-up procedures.
6/01-8/01	Prepare assessment data for analysis.
	Student tracking
Ongoing	Conduct tracking procedures to minimize sample attrition.
YEAR 3, SCHOOL YEAR 2001-2002	
	Analysis and reporting
9/01-2/02	Weighting and analysis of direct assessment and school data.
3/02-7/02	Submit draft and final versions of topical reports on students' school programs, students' school performance, and the linkages between them.
	Parent interviews, wave 2
3/02-6/02	Conduct wave 2 parent interviews.
7/02-8/02	Prepare parent interview data for analysis.
	School data collection, wave 2
10/01-1/02	Contact schools to confirm student attendance. Implement survey follow-up procedures.
11/01-1/02	Track mobile students to identify schools they currently attend.
2/02-5/02	Mail wave 2 teacher survey and school program survey to principals for distribution to appropriate school staff who can best respond for individual students. Implement follow-up survey procedures.
2/02-5/02	Mail wave 2 principal survey to principals of all schools attended by sample students. Implement follow-up survey procedures.
6/02-8/02	Prepare school data for analysis.
	Direct assessment, wave 2
11/01-12/01	Contact LEAs/special schools to identify person to do wave 2 direct assessment at each site.
12/01-2/02	Contract with individuals to conduct direct assessments at each site. Distribute training materials.
2/02-5/02	Conduct direct assessments. Implement follow-up procedures.
6/02-8/02	Prepare assessment data for analysis.
	Student tracking
Ongoing	Conduct tracking procedures to minimize sample attrition.

Table 2-1 (Concluded) SEELS TIMELINE	
YEAR 4, SCHOOL YEAR 2002-2003	
	Analysis and reporting
9/02-2/03	Weighting and analysis of wave 2 parent interview, direct assessment, and school data.
3/03-8/03	Submit draft and final versions of topical reports on (1) trends in factors reported by parents and (2) trends in students' school performance, and the linkages between students' school programs and growth or change in performance.
YEAR 5, SCHOOL YEAR 2003-2004	
	School data collection, wave 3
7/03-8/03	Contact parents by mail to identify school student is expected to attend in fall, year 5, school year 2003-2004.
	Parent interviews, wave 3
3/04-6/04	Conduct wave 3 parent interviews.
7/04-8/04	Prepare parent interview data for analysis.
	School data collection, wave 3
10/03-1/04	Contact schools to confirm student attendance. Implement follow-up procedures.
11/03-1/04	Track mobile students to identify schools they currently attend.
2/04-5/04	Mail wave 3 teacher survey and school program survey to principals for distribution to appropriate school staff who can best respond for individual students. Implement follow-up survey procedures.
2/04-5/04	Mail wave 3 principal survey to principals of all schools attended by sample students. Implement follow-up survey procedures.
6/04-8/04	Prepare school data for analysis.
	Direct assessment, wave 3
11/03-12/03	Contact LEAs/special schools to identify person to do wave 3 direct assessment at each site.
12/03-2/04	Contract with individuals to conduct direct assessments at each site. Distribute training materials.
2/04-5/04	Conduct direct assessments. Implement follow-up procedures.
6/04-8/04	Prepare assessment data for analysis.
YEAR 6, SCHOOL YEAR 2004-2005	
	Analysis and reporting
9/04-2/05	Analysis of wave 3 parent interview, direct assessment, and school data.
3/05-8/05	Submit draft and final versions of topical reports on (1) trends in factors reported by parents, (2) trends in students' school performance, and (3) trends in special education (e.g., comparisons of experiences at specified grade levels from one wave to another).

* Parents will be asked in the wave 1 interview what school they expect the student to attend in the coming year.

3. DATA COLLECTION PLAN

The SEELS data collection plan is designed to collect in-depth longitudinal information on the school and nonschool experiences of 8- to 12-year-olds who are special education students at the beginning of the 1999-2000 school year. Because SEELS is intended to be far reaching in terms of conceptual domains that it will address, data will be collected from multiple sources by using several data collection methods. Instruments to be used in data collection are in the process of development. Whenever possible, items from existing data collection instruments will be used to maximize the extent to which SEELS data can be compared with other national databases.

Below, we describe the general approach to each data collection component designed for SEELS. We then outline the content of each data collection instrument in terms of the domains of the SEELS conceptual framework and the specific research questions that each will address. Discussion of approaches to the issues of obtaining parental consent for data collection and identifying schools attended by sample students conclude this section.

Data Collection Components

Parent Telephone Interview

Parents/guardians will be interviewed during years 1, 3, and 5 of SEELS (see study timeline). The SEELS conceptual framework (see Figure 3-1) holds that a child's nonschool experiences, such as extracurricular activities and friendships; historical information, such as age when disability was first identified; household characteristics, such as socioeconomic status; and a family's level and type of involvement in school-related areas are crucial to student outcomes. Parents/guardians are the most knowledgeable about these aspects of students' lives.

Given the size of the SEELS sample and the resources likely to be available for data collection, in-person interviews are not feasible. Computer-assisted telephone interviewing (CATI) will be used for parent interviews. To eliminate the need for respondents to answer items that are inappropriate to the age, disability, or other circumstances of the household or student, carefully constructed skip patterns will be programmed.

Parent/guardian interviews will begin with a screening section identifying the adult who is best able to talk about the student and his/her experiences in school, who will be referred to here as a parent. If a parent is not sufficiently fluent in English to be interviewed and is a Spanish speaker, a Spanish language version of the interview will be administered.[3] Appropriate follow-up procedures will be included to produce a high response rate. In addition, aggressive efforts

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[3] Only an English-language version of the parent questionnaire will be cleared through OMB. The study contractor will be responsible for translating the parent questionnaire into Spanish and any other languages estimated to be represented sufficiently in the sample to justify the expense of translation.
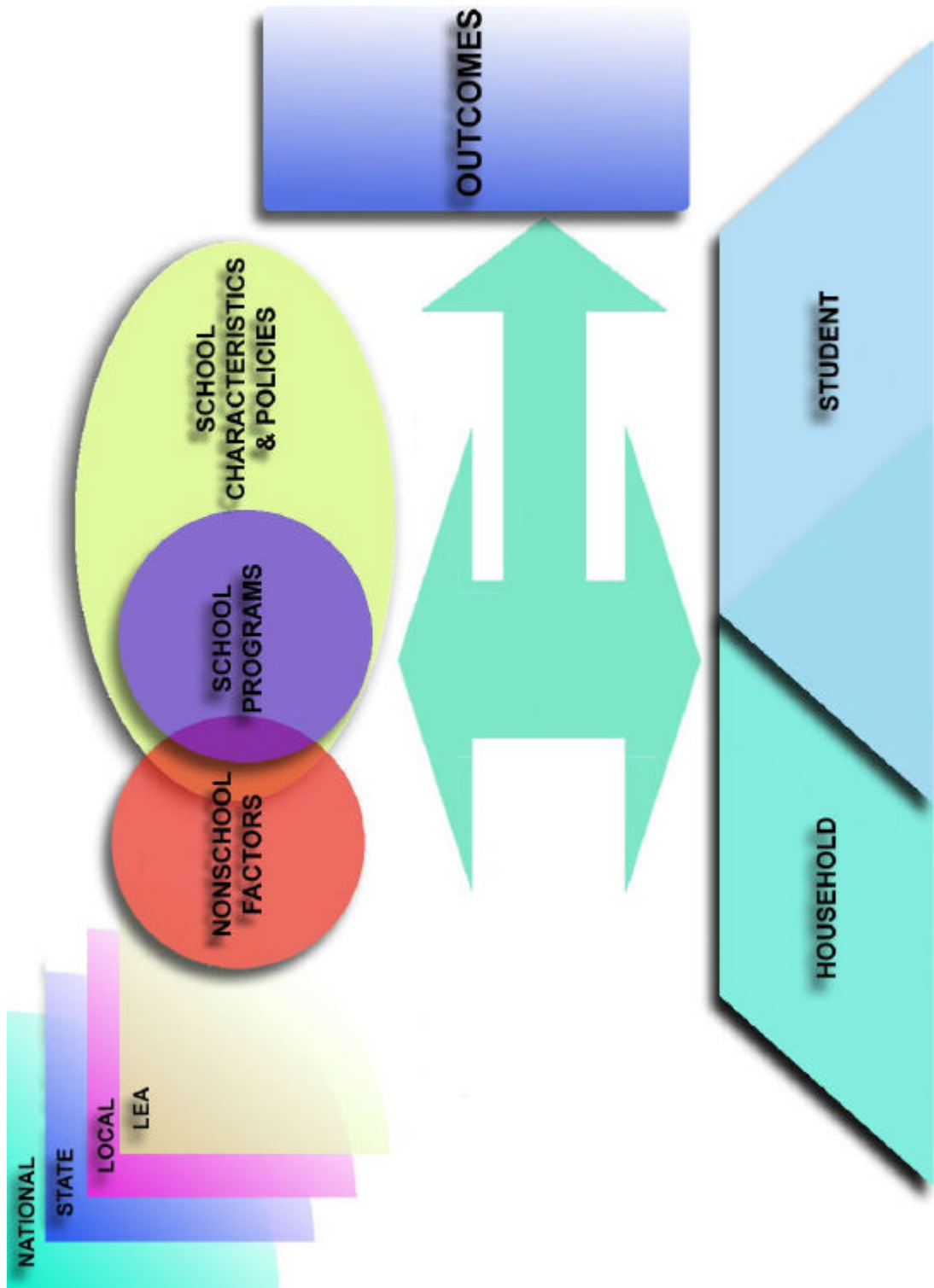
Figure 3-1 SEELS CONCEPTUAL FRAMEWORK

OUTCOMES

SCHOOL CHARACTERISTICS & POLICIES

SCHOOL PROGRAMS

NONSCHOOL FACTORS

NATIONAL
STATE
LOCAL
LEA

STUDENT

HOUSEHOLD

will be made to minimize any potential bias resulting from the telephone interview approach by developing methods of obtaining information for families without telephones (e.g., a simplified mailed version of the questionnaire). Design assumptions are that the average telephone interview length is 40 minutes and that at least a 70% response rate is achieved.

Most of the questions from the wave 1 parent interview will be repeated in waves 2 and 3. However, items that do not change with time, such as when the child was first diagnosed with a disability, will not be repeated. Items that are appropriate for older students, such as questions about employment, pregnancy/parenting, arrest history, and having a driver's license, will be included only in wave 3.

Direct Student Assessment

The academic performance of students in their elementary and middle school years is central to the range of outcomes addressed in the SEELS conceptual framework. To accurately assess academic performance in the key areas of reading, mathematics, and academic problem solving, direct assessments of a student's abilities by a trained on-site professional (other than the student's own teacher) will be conducted in years 2, 3, and 5. This assessment still is being designed and will be pretested in the fall of 1999.

One or more persons (depending on the number of students per community) to conduct direct assessments of students will be recruited through contacts with the school district special education director or, in schools with several students to be assessed, with the school principal. The study team will contract with these persons to conduct assessments during a specific time frame in the spring of the assessment years for a fixed amount of money per completed assessment (currently estimated to be $50).[4] The names of students to be assessed and appropriate training materials will be supplied to each assessor by the study contractor. Assessments are expected to take an average of 30 to 45 minutes per student. Students who require significant accommodations or modifications in the assessment process may require more time to complete assessments.[5] A 75% completion rate is estimated.

Student Interview

Brief student interviews will be conducted in years 2, 3, and 5 in conjunction with the direct assessments conducted in those years by a professional who is not the student's teacher. Although parents and teachers will be asked about many aspects of the student's life, the student is usually the best respondent regarding feelings about his or her social, school, and other experiences.

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[4] There are several questions that OSEP and the ultimate SEELS contractor will need to resolve regarding compensation for study participants. The current design calls for $50 for the direct assessment and $10 for the teacher surveys. Those figures may be too low to meaningfully compensate individuals for their time. In addition, it remains an issue whether other study informants, such as parents or principals, should receive compensation. These issues are very complicated because of both cost and burden issues. For example, an additional $10 paid to respondents could cost the study approximately $100,000.

[5] Procedures will need to be developed so that information regarding needed accommodations can be provided to assessors in a timely fashion.

In year 5 of the study, questions about adolescent risk behaviors (e.g., smoking, drinking, drug use, and gang involvement) are planned to be included in the student interview. An approach to obtaining reliable and valid information from students will need to be developed and submitted for OMB approval by the study contractor prior to incorporation in wave 3 data collection.

Student interviews are expected to take 10 to 15 minutes, so that the entire assessment and interview experience can be completed in less than an hour per student, on average. Students who require substantial accommodations for the assessment or interview are likely to require additional time to complete the two components. As with the accompanying direct assessment, a 75% completion rate is estimated.

Language Arts Teacher Survey

The SEELS conceptual framework suggests the importance of the classroom experience in the lives of students, as well as the importance of behaviors and performance in the classroom setting. To obtain information on these domains, the student's primary language arts teacher (as identified by the school principal) will be asked to complete a mailed, self-administered questionnaire during years 2, 3, and 5. The language arts teacher was selected, rather than another teacher, because a key focus of the student assessment is reading and other language arts skills. Because one purpose of measuring classroom practices is to help explain variations in assessments of academic performance, language arts instruction is the appropriate content area in which to explore instructional practices and adaptations or accommodations made for students in special education. In the context of this instructional setting, the language arts teacher can provide information on student behaviors while engaged in a fairly demanding academic setting. It is also anticipated that virtually all students will be enrolled in some form of language arts instruction for a portion of the school day, whether in a special education or a general education setting.[6]

The language arts teacher survey will focus on the instructional techniques and curriculum that the teacher uses with the student, accommodations or modifications in classroom practice used by the student, and the teacher's training and perceived competence in general and special education. It also will include a variety of questions regarding the student's classroom performance, both academic and behavioral.

Reimbursement in the range of $10 should be considered for completion of the survey. A 75% response rate is estimated.

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[6] A potential problem with this strategy arises when a student receives significant language arts instruction in more than one setting. In this case, it may be difficult for a principal to reliably and validly select which teacher is "primary." However, the alternative of collecting data from each of the language arts environments introduces problems of noncomparability where some students in the database would have data from multiple settings, and others would have data from only one. This seems likely to create significant analytic difficulties later on. As a solution, we propose using the school program survey to identify each of the language arts settings and the amount of time that the student receives instruction in each. This will allow for understanding of multi-setting issue without introducing noncomparability into the dataset.

School Program Survey and Records Request

The school program survey will be administered in years 2, 3, and 5. The principal of each school attended by a sample student will be asked to identify the student's special education teacher. For students who have been declassified from special education and no longer have a special education teacher, the principal will be instructed to identify the person at the school best able to answer questions about the student's overall school program. In the elementary grades, the language arts teacher and the person best able to report on the student's overall school program may be the same respondent.

The purpose of this survey is to identify the student's accommodations, supports and related services; content of IEP goals; and overall school program and performance (e.g., achievement test scores, days absent from school). This survey also will include questions about the special education teacher's experience and background, because s/he may be providing a range of services for the special education student. For students in middle and high school, teacher respondents also will be asked to include a copy of the student's transcript. In addition, respondents will be asked to identify all of the settings where the student receives some language arts instruction and the approximate amount of time spent weekly in each.

Reimbursement in the range of $10 should be considered for completion of the school program questionnaire. A 75% response rate is estimated.

School Background Survey

The school background survey, focusing on schoolwide characteristics and policies, will be conducted in years 2, 3, and 5. The principal will be asked to complete a mail questionnaire that describes the general characteristics of the school and local school district, including, for example, the demographics of the school, student enrollment, grade levels served, and policies regarding special education services. Other school-related factors, such as the orientation toward special education students and organizational structure and availability of specialized services, may provide important contextual information for understanding the placement, provision of services, and outcomes for students in special education. A 75% response rate is estimated.

In-Person Parent Interviews for the Optional Nonresponse Study

A focus on telephone interviewing of parents will result in an underrepresentation of households that have no telephones or have unlisted telephone numbers. To assess the extent to which nonresponse to the telephone interviews introduces sample bias, OSEP may wish to commission a nonresponse study as part of SEELS.[7] Such a nonresponse study could involve

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[7] The National Longitudinal Transition Study (NLTS) included such a nonresponse study. In-person interviews were conducted with parents/guardians of 442 students in 27 LEAs with particularly high nonresponse rates to the telephone survey, an 80% response rate for the 554 sample members selected for the nonresponse study. Comparisons of in-person and telephone interviews revealed that the telephone interview respondents underrepresented minority youth, those from single-parent households, households with a head of household who was not a high school graduate, and households with incomes of less than $12,000 per year. Sample weighting incorporated this information and adjusted for this underrepresentation.

selecting LEAs with particularly high nonresponse and conducting personal interviews in households that did not respond to the telephone survey. Data from these in-person interviews would be used to identify any biases in the telephone interview sample and correct for them through weighting procedures.

Content of Data Collection Instruments

The conceptual framework and research questions determine the development of the data collection plan and the content of the data collection instruments. Table 3-1 demonstrates the content areas and research questions that are included in each data collection instrument.

Table 3-1
CONTENT OF DATA COLLECTION INSTRUMENTS

	Parent/ Guardian Interview	Direct Assess-ment	Student Interview	Language Arts Teacher Survey	School Program Survey	School Back-ground Survey
STUDENT CHARACTERISTICS						
✳ What are students' demographic characteristics (e.g., age, gender, ethnicity, English language use)?	☆					
✳ What are students' identified disabilities?	☆				☆	
✳ What are the implications of disability for student functioning in terms of the students' abilities to hear, see, use arms/hand and legs/feet?	☆					
✳ What are student's strengths (e.g., talents, persistence)?	☆			☆	☆	
✳ What are students' special education and broader treatment histories?	☆					
✳ What is the pattern over time of students' special education disability classification?					☆	
✳ What are students' experiences with health insurance?	☆					
✳ How frequently have students changed schools?	☆					
HOUSEHOLD CHARACTERISTICS						
✳ What is the composition of households of students in special education?	☆					
✳ What are the socioeconomic characteristics of households of students in special education?	☆					
✳ Where are the households of students in special education in terms of community characteristics (e.g., urbanicity, geographic region)?	*					
NONSCHOOL FACTORS						
✳ To what extent do students in special education participate in organized group activities?	☆					
✳ What are the after-school care experiences and needs of students in special education?	☆					
✳ To what extent do parents/guardians of students in special education engage in activities at home that support students' educational and social development?	☆					
✳ What are expectations for students' futures?	☆		☆			

* Derived from household's current address.

	Parent/ Guardian Interview	Direct Assess- ment	Student Interview	Language Arts Teacher Survey	School Program Survey	School Back- ground Survey
Table 3-1 (Continued) **CONTENT OF DATA COLLECTION INSTRUMENTS**						
❋ What services and supports do families provide for their children outside of their school programs?	☆					
SCHOOL PROGRAMS						
General						
❋ What are students' current grade levels?	☆				☆	
Classroom Characteristics						
❋ What are all of the settings in which students spend their school days, and how is time distributed among them?					☆	
❋ What are the characteristics of the classrooms where students in special education are instructed?				☆		
Curriculum and Instruction						
❋ To what extent are students in special education exposed to the regular education curriculum?				☆		
❋ What are the characteristics of instructional practices used with students in special education?				☆		
❋ What vocational experiences are included in the curriculum for students in special education?					☆	
❋ To what extent are community-based (other than vocational) experiences included in the curriculum?					☆	
Student Assessment						
❋ How is student progress evaluated?				☆	☆	☆
Accommodations, Adaptations, Enrichments, or Compensations						
❋ What educational assistive devices do students use at school (e.g., calculators, learning software)?				☆	☆	
❋ What accommodations or modifications do students receive in instruction and assessment, including grading?				☆	☆	

Table 3-1 (Continued)

CONTENT OF DATA COLLECTION INSTRUMENTS	Parent/ Guardian Interview	Direct Assess-ment	Student Interview	Language Arts Teacher Survey	School Program Survey	School Back-ground Survey
❋What medical or other disability-related assistive devices do students use at school that require school staff attention?	☆			☆	☆	
❋What related services do students in special education receive?					☆	
IEPs						
❋In what domains do students have IEP goals?					☆	
Transitions						
❋What preparation or support for the transition from elementary to middle and middle to high schools do students in special education receive? How well did it prepare students for the transition?	☆				☆	
❋What is postsecondary transition planning like?					☆	
Family Involvement						
❋What is the level of contact between teachers and students' families?	☆			☆	☆	
❋To what extent do families participate in IEP meetings?	☆				☆	
Personnel†						
❋What are the characteristics of teachers who serve students in special education?				☆	☆	
❋How well prepared are teachers who serve students in special education?				☆	☆	
❋What professional development is provided to teachers who serve students in special education?				☆	☆	
❋To what extent are paraprofessionals used as direct service providers to students?				☆	☆	
SCHOOL CHARACTERISTICS						
General						
❋What are the characteristics of schools that serve students in special education (e.g., type, size)?						☆
School Climate						
❋How safe are the schools that serve students in special education?	☆		☆			☆
❋To what extent is having students succeed academically and focusing on instruction the school's highest priority?				☆		☆

† OSEP is commissioning a separate large-scale "Study of Personnel Needs in Special Education," which will provide much more extensive information on these personnel.

	Table 3-1 (Continued) CONTENT OF DATA COLLECTION INSTRUMENTS					
	Parent/ Guardian Interview	Direct Assess- ment	Student Interview	Language Arts Teacher Survey	School Program Survey	School Back- ground Survey
Policies						
❄What are schools policies and practices related to special education?						☆
Resources						
❄What placement options are available at the school for students in special education?						☆
❄What options for types of schools are available in the district?						☆
❄What programs operate at the school to support student learning and well-being (e.g., Chapter 1, Reading Recovery, Accelerated Schools, school-based health services, after-school enrichment activities, consultation for teachers)?						☆
❄What personnel resources are at the school to support student learning and well-being (e.g., reading specialist, school counselor, school nurse)?						☆
❄How large a student caseload is carried by special education teachers?					☆	
Family Involvement						
❄What actions does the school take to encourage/support family involvement in the school (e.g., provide transportation to IEP meetings, hold parent meetings at places convenient to the parent, provide child care for events)?						☆
Reforms						
❄What schoolwide reforms have schools implemented, and how are students in special education included in them?						☆
STUDENT OUTCOMES						
Academic and Functional Literacy						
❄What is the academic functioning/performance of students in special education?	☆	☆		☆	☆	
❄What level of engagement in school do students in special education have?	☆		☆	☆	☆	
❄How well do students in special education communicate?	☆	☆	☆	☆	☆	
❄What are students' past academic experiences in terms of previous grade promotion and retention?	☆				☆	

Table 3-1 (Concluded)

CONTENT OF DATA COLLECTION INSTRUMENTS	Parent/ Guardian Interview	Direct Assess-ment	Student Interview	Language Arts Teacher Survey	School Program Survey	School Back-ground Survey
Personal and Social Adjustment						
❈To what extent are students in special education socially engaged?	☆		☆	☆	☆	
❈To what extent do students in special education get along with others?	☆			☆	☆	
❈To what extent are students in special education personally well adjusted?			☆			
Contribution and Citizenship						
❈To what extent do students in special education abide by rules at home, in the community, and at school?	☆			☆	☆	
❈To what extent are students in special education involved in volunteer/ community service activities?	☆					
Responsibility and Independence						
❈How independent are students in special education in terms of self-care, mobility, and household activities?	☆					
❈How do students in special education spend their leisure time?	☆		☆			
❈To what extent do older students begin taking on adult roles?	☆					
Physical health						
❈How healthy are students in special education?	☆					
❈To what extent do students in special education participate in risk behaviors and have/father children in their teen years (as reported by students in year 5 only when all students are ages 13 to 17)?			☆			
Satisfaction						
❈How satisfied do parents of students in special education report being with children's schools and school programs and services?	☆					
❈How satisfied are students in special education with their schools and school programs?			☆			
❈How satisfied are students in special education with their personal and social lives?			☆			

Pretesting

All SEELS data collection protocols will be pretested as part of the design process. The pretest of all data collection protocols, with the exception of the direct assessment, will take place in the spring of 1999. The direct assessment is on a different timeline and will have an extensive pretest in the fall of 1999. The purpose of the pretest is to ensure that the protocols and instruments function according to their design and to provide an opportunity to address problems that may arise during the pretest. In accordance with OMB requirements, the parent interview, language arts teacher survey, school program survey, record review, and school background survey will be conducted with no more than nine participants each. In addition, several different administrations of the direct assessment/student interview are currently under consideration for various groups of students in special education, including at least those with: (1) mild disabilities, (2) deafness/hearing impairments, (3) low vision/blindness, (4) cognitive disabilities, and (5) physical/health disabilities. The general intention of the pretests is to examine all aspects of the data collection, including the contact/follow-up procedures and the completion of the instruments, and conduct an interview with the respondents. The following activities are included in the pretest:

- **Timing.** An important feature of the pretest will be to measure the amount of time that is required to complete each subsection of the surveys/assessments, as well as the entire time required. This information will indicate which sections need to be shortened or revised in the final product.

- **Comprehension.** Respondents will be interviewed to establish how easily they were able to understand instruments, both in terms of their directions and in the content and format of specific items.

- **Item characteristics.** For each item, an analysis will be conducted to ascertain whether: (1) the responses obtained are believable, (2) exhibit variations in responses, and (3) are appropriate for the students or settings at which it is directed.

- **Logical flow/skip patterns.** Respondents will be interviewed to establish whether the instruments flow logically from one section to another, or whether some revision could improve the flow.

- **Logistics.** The pretest will also test the logistics in terms of the sequence of activities that will be required for respondents to either respond or participate appropriately.

- **Accommodations.** In the case of the direct assessment, significant effort will be directed at providing a variety of accommodations so that students can participate. The pretest will thoroughly examine the degree to which the accommodations were implemented and the likely effects of their large-scale implementation.

Obtaining Parental Consent

A concerted effort should be made to obtain consent of parents to have their student included in SEELS. For example, when students are selected for the study sample by the study contractor, a letter can be mailed to parents/guardians informing them of the student's selection and what

participation means. A brief form can be included for the parent to return to the study contractor in a postage-paid envelope indicating agreement or refusal to have the student in the study. Students for whom no consent form is returned should be retained in the study.

In addition, parents can be informed before each student data collection that their child will be involved in a direct assessment and interview. A brief form can be provided for them to report to the study contractor if they decline to have their student involved.

Finally, the study contractor will be supplied with a letter from the U.S. Family Educational Rights and Privacy Act (FERPA) Office asserting that for purposes of SEELS, the study contractor is an agent of the U.S. Department of Education; therefore, schools and school districts are permitted under FERPA to share information about students and from students' school records with the study contractor. This authorization will be sufficient in the majority of schools and LEAs to obtain information from teachers and school records about students.

Identifying Schools for School-Level Data Collection

Parents will be asked during the wave 1 parent interview whether their child is in school and, if so, the name and location of the school the child attends currently and is expected to attend in Fall 2000-2001 (year 2). Schools will be contacted at the beginning of year 2 to confirm the student's attendance. If a student has moved, schools will be asked the reason the child left the school (e.g., transferred, dropped out) and the name and location of the subsequent school or district if the student transferred to another school. Newly identified schools will receive a letter describing the study, along with the student tracking questions asked of the initial school.

Because parent interviews will be occurring concurrently with school-level data collection in waves 2 and 3, parent interviews cannot be used to learn the name of the child's current school in advance of school-level data collection. For waves 2 and 3, therefore, parents will be mailed a form in the summer asking for the name and location of the school they expect their child to attend in the fall. As with all data collection efforts, appropriate follow-up procedures should be used to produce high response rates, including telephone follow-up with nonrespondents.

Having identified the schools attended by sample children, the study contractor can distribute the language arts teacher questionnaire, the school program questionnaire, and the school background questionnaire to the principals at the appropriate schools, with a request that they pass along the language arts and school program questionnaires to the appropriate staff members for each student and complete the school background questionnaire themselves. The study contractor also can contact district-level personnel in the LEAs of schools attended by sample students to arrange to contract for persons to administer the direct student assessment to sample students.

4. SAMPLE DESIGN

Sample Parameters

SEELS must meet the information needs of a wide variety of audiences using a variety of data collection and analytic approaches. Accordingly, the SEELS sample must meet the following requirements in order to serve its multiple purposes:[8]

- **Focus on students.** SEELS data must produce accurate estimates about the characteristics, programs, and outcomes of students in special education. However, no list of all students in special education exists from which to draw the SEELS sample. Thus, a sample of LEAs must be drawn, from whose rosters students can be selected. However, the sample of LEAs is only a vehicle to obtaining a sample of students; it is too small to make highly precise national estimates about LEA practices (OSEP is commissioning a separate study of state and local implementation of IDEA97 to meet this latter purpose).

- **Generalize to each disability category and age cohort.** Not only must the SEELS sample enable reasonably precise estimates for the full special education student population ages 8 through 12 at the outset, OSEP requires that it also generalize to each special education disability category and to each of the single-year age cohorts within the age range. This requirement has important implications for the size of the student sample, which must have enough students in each disability category to meet this requirement. If the sample contains sufficient numbers of students per category, it also will be large enough to generalize to the five single-year age cohorts within the sample.

- **Longitudinal.** SEELS data will be collected repeatedly over a 5-year period (see the timeline presented previously). The initial sample must be large enough to support estimates of reasonable precision in the fifth year of data collection (assuming that 8% of students who are in the sample each year will be lost the following year because of mobility).[9]

- **Multiple data sources.** As the data collection plan outlined, multiple data sources will be needed to obtain the breadth of information specified in the SEELS conceptual framework. Many analyses will employ information from more than one source. Given reasonable assumptions about response rates to the various data collection

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[8] Throughout this discussion of the SEELS sampling approach, we have made a variety of assumptions regarding statistical precision, attrition, response rates, etc. We have based many of these assumptions on the National Longitudinal Transition Study. The NLTS was the only other national study of school-age students in special education, so the use of such estimates seems reasonable for SEELS. We believe the assumptions to be reasonable ones on which to base the SEELS design. However, we should note that other contractors could potentially use different assumptions that would result in different sample size estimates, etc.

[9] The assumption of 8% attrition reflects experience with the National Longitudinal Transition Study, in which aggressive tracking efforts kept sample attrition to about 6% per year. Changing demographics and the younger age of this sample relative to the NLTS suggests that a higher attrition rate may be experienced in SEELS.

efforts, some students will not have information from a source, reducing the sample for analyses using that data source. Even more will be missing information when several sources are combined. The sample must be large enough to accommodate missing information from multiple data sources.

- **Multiple analytic purposes.** The richness of the SEELS database will support a variety of analyses that have implications for the sample design. For example, subgroup analyses will examine experiences and outcomes of students in special education who are differentiated by particular characteristics (other than age and disability category, as mentioned above), such as gender, ethnicity, or functional abilities. The SEELS sample must be large enough to support such subgroup analyses.

In the remainder of this section, the approach to meeting these sample requirements is presented.

General Sampling Approach

SEELS will employ a two-stage process to generate the needed sample of students in special education between the ages of 8 and 12. SEELS will draw a random sample of students in special education from a nationally representative sample of LEAs and a sample of state-supported special schools. Accordingly, the LEA is the primary sampling unit and the student with a disability is the secondary or final unit.

The SEELS sample will be generated by randomly selecting special education students from rosters of LEAs and state-supported schools that serve children of the appropriate ages in special education. The universe of eligible LEAs and special schools will be stratified by key factors to enhance representativeness; these factors are geographic region, district enrollment, and district/community wealth. Taking into account the length of the data collection period and assumptions regarding attrition from the sample, analyses of statistical power requirements suggest that an initial sample of approximately 12,075 students will yield a sample of sufficient size and representativeness to meet the analytic needs of SEELS in its final wave of data collection. This sample will be selected so as to generate 1,150 in each disability category, with the exception of 200 students who are deaf-blind and 375 with traumatic brain injuries, the least populous categories.[10]

The following sections describe the process through which the student sample size was determined and then outline the selection procedures for the LEA and student samples.

Student Sample Size

The size of the SEELS student sample is a function of the duration of the study, desired levels of precision, and assumptions regarding attrition and response rates. The following assumptions have been used in determining the size of the student sample:

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[10] The category of developmental delay is used by only six states; students classified as developmentally delayed will be merged with those with other health impairments, from which 1,150 will be sampled.

- Location information (parent name, address, telephone number) will be provided by LEAs for 90% of sampled students.[11] Therefore, for each 1,000 students sampled in year 1, location information will be available for 900 students.

- In each year of the study after the first year, 92% of the students from the preceding year will be retained. Thus, for each 1,000 students sampled in year 1, 900 will have location information and the sample can be expected to retain 828 in year 2, 762 in year 3, 701 in year 4, and 645 in year 5.

- For each 1,000 students sampled in year 1, parent/guardian interviews will be completed for 70%[12] of students retained in the sample, or 630 students in year 1 (i.e. 70% of the 900 students whom we can track), 533 in year 3, and 451 in year 5.

- Direct assessments will be completed for 75% of the students retained in the sample each year. Therefore, for each 1,000 students sampled in year 1, assessments will be completed for 621 students in year 2 (i.e., 75% of 828 tracked students), 572 in year 3, and 484 in year 5.

- The number of students who have both a parent/guardian interview in year 1 and a direct assessment in year 2 will be 75% x 92% of the number of students who have a parent/guardian interview in year 1 (i.e., 435 students for each 1,000 sampled in year 1).

- The number of students who have both a parent/guardian interview and direct assessment in year 3 will be 75% of the number of students who have a parent/guardian interview in year 3 (i.e., 400 students for each 1,000 students sampled in year 1).

- The number of students who have both a parent/guardian interview and direct assessment in year 5 will be 75% of the number of students who have a parent/guardian interview in year 5 (i.e., 338 students for each 1,000 students sampled in year 1).

This means that approximately three students (i.e., 2.96 students) will need to be sampled for each one student who will have both a parent/guardian interview and a direct assessment in year 5 of SEELS.

The SEELS sample design emphasizes the need to estimate proportions and ratios (for example, the percentage of students in special education reading at grade level) instead of estimating the actual numbers of students in special education having specified characteristics (for example, 2,400 students reading at a particular level). However, relatively precise national estimates of the proportions or ratios of students in special education, whether analyzed as one group or considered separately by disability category, will be needed to adequately answer research questions of interest to the broad range of likely audiences for the study.

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[11] Experience from the NLTS has demonstrated that some LEAs will not reveal location information for students. In such cases, the contractor is likely to need to provide letters of invitation for parents and consent forms to the district, whose staff will then mail them to parents. Only parents who elect to return the consent form, thus identifying themselves, can be included in data collection.

[12] This percentage is based on experience with the NLTS, which obtained parent interviews from 69.6% of households for whom location information was available.

Excluding the deaf-blind, the average number of parent/guardian interviews in the NLTS was approximately 660 per disability category, resulting in a sampling efficiency of approximately 50% and standard errors for proportions of about 2.8%. This level of precision was used as a starting point for precision estimates for SEELS. To obtain the same level of precision in analyses that depend on students who have both the parent interview and the direct assessment in year 5, 1,954 students (i.e., 660 x 2.96) would need to be sampled per disability category.

This sample size is so large that it would make the study prohibitively expensive, particularly given the central importance and considerable expense of a direct assessment of students. In addition, a sample of that size would be a sizable proportion of all the students there are in some low-incidence disability categories (see Table 4-1). Students in special education account for approximately 10.6% of all students in American schools, and the number of students ages 8 through 12 in each disability category ranges from a high of approximately 1,111,000 for students with learning disabilities (approximately 4% of the elementary/middle school student population) to a low of approximately 560 for deaf-blind students (far less than 1%). The 1,954 students per category that would be needed to reach a precision level of 2.8%, as in the NLTS, would be 43% of all students in this age group with traumatic brain injury (TBI) and 16% of all students in this age group with orthopedic impairments. The SEELS sample would need to be drawn from an extremely large number of LEAs to find 1,954 students in these categories.

Table 4-1 APPROXIMATE NUMBER OF STUDENTS IN SPECIAL EDUCATION AGES 8 TO12 IN U.S. PUBLIC SCHOOLS, BY DISABILITY CATEGORY		
	Number of Students	Approximate Percentage of Student Population Ages 8 to 12
Learning disabilities	1,111,131	4.35
Speech impairments	940,960	3.68
Mental retardation	240,098	0.94
Serious emotional disturbance	153,741	0.60
Other health impairments	51,696	0.20
Multiple disabilities	33,185	0.13
Hearing impaired	35,650	0.14
Visual impairments	97,680	0.38
Orthopedic impairments	12,070	0.05
Autism	27,323	0.11
Traumatic brain injury	4,514	0.02
Deaf-blind	560	0.002
Developmental delay	1,935	0.01

Given these drawbacks to sampling sufficient numbers of students per category to reach the NLTS precision levels, the following alternative strategy was used:

- Decrease the level of precision for standard errors to 3.6%. That is, by sampling 1,150 students per disability category (except for TBI and deaf-blind) in year 1, 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%.

- Sample students with traumatic brain injury and students with deaf-blindness with certainty (i.e., select all students in those categories in sampled LEAs and special schools) but do not build the sample around those groups (i.e., do not select additional LEAs, beyond those needed to meet the sample requirements for other categories). The sample of LEAs and state-sponsored schools that is sufficient to meet the sampling requirements of other categories is estimated to contain approximately 375 TBI and 200 deaf-blind students, who will be sampled with certainty. This approach results in sampling far fewer LEAs to generate the sample and increases the sampling efficiency for the other disability groups.

Table 4-2 shows the number of students who are expected to be retained in the study for each year and for whom data are expected to be collected, based on a starting sample of 1,150 students in each category, with the exception of 375 students with traumatic brain injury and 200 who are deaf-blind.

				Table 4-2		

Table 4-2
EXPECTED SAMPLE SIZE, BY YEAR AND DISABILITY CATEGORY

	Deaf-Blind	TBI	Each Other Category	Total
Number of students				
Sampled	200	375	1,150	12,075
With location information	180	338	1,035	10,868
Year 1	180	338	1,035	10,868
Year 2	166	310	952	9,998
Year 3	152	286	876	9,198
Year 4	140	263	806	8,462
Year 5	129	242	742	7,785
Number of parent/guardian interviews				
Year 1	126	237	724	7,608
Year 3	106	200	613	6,439
Year 5	90	169	519	5,450
Number of direct assessments				
Year 2	125	232	714	7,498
Year 3	114	214	657	6,898
Year 5	97	181	556	5,839
Number of students with parent/ guardian interviews (PGI) and direct assessments (DA)				
Year 1 PGI and Year 2 DA	87	163	500	5,250
Year 3 PGI and DA	80	150	460	4,829
Year 5 PGI and DA	67	127	389	4,088

The LEA Sample

The first step in developing a sample that leads to national estimates about students in special education is to select an adequate, representative sample of LEAs. Below we discuss issues related to the LEA sample including size, stratification, and fit.

LEA Sample Size

There are several factors to consider in determining the number of LEAs for the sample. First, it is necessary to establish the number of LEAs that are required to generate the needed student sample. 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 will participate) will be sufficient to generate the student sample. Second, the

rate of LEA refusal to participate should be considered so that the required number of LEAs agree to participate within the limited recruitment period. Previous experience with the NLTS suggests that LEAs typically declined to participate because of concerns related to confidentiality of student records. Although considerable time and effort was expended in recruiting LEAs for the NLTS, approximately 55% of the LEAs invited to participate either declined, did not respond, or introduced procedures that unacceptably lengthened the recruitment process. In SEELS, both the amount of time and the funds available to recruit LEAs are less than were available in the NLTS. Efficiency can be gained if recruitment efforts focus on large LEAs, which are relatively few in number and from which a relatively large proportion of sample students will be selected. Smaller LEAs will receive less intensive recruitment effort than in the NLTS because there are many of them, yielding a large number of potential replacements for refusing districts. Although this strategy is likely to be most efficient in selecting the LEA sample quickly, there is a risk that smaller LEAs who refuse to participate differ systematically from other LEAs in terms of the types or effectiveness of programs that they offer to students. Thus, detailed tracking will be necessary to identify potential patterns that emerge with regard to LEA refusal/nonresponse. The procedural outcome of concentrating our recruitment effort on larger LEAs and being more willing to replace smaller LEAs is that a sample of 765 LEAs is expected to be enough from which to recruit 297 participating LEAs.

Defining the Universe of LEAs

The initial task in selecting the SEELS sample is to define which districts should be included in and excluded from the universe of LEAs from which the sample will be selected. To meet its purposes, the SEELS sample includes only LEAs that have teachers, students, administrators and operating schools—that is, "operating LEAs." The SEELS sample excludes the following categories of local and state educational "districts" that appear on standard listings of educational institutions:

- Nonoperating LEAs, which do not administer any schools.[13]

- Vocational-technical districts (except those that operate as regular LEAs). These districts generally do not serve students of the SEELS age range and often are not comparable to LEAs in enrollment, operating hours, or administrative structure, making their inclusion problematic.

- Supervisory unions, area educational agencies, interim districts, boards of county education services, or other superordinate units. These organizations occur most frequently in rural areas where the individual district-level enrollments are quite small. There is evidence that the operation of superordinate units varies from state to state. For example, in many states, the local districts are fiscally responsible for students attending such service units, and they are therefore listed on local district rosters. Such students would be included in SEELS. In other states, such units may have fiscal responsibility for their students. However, we believe that the exclusion of such units

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[13] According to NCES, an operating system is a self-contained local public school system having its own decision-making board of control, operating a school or schools providing general elementary/middle school/secondary education. A nonoperating system is a self-contained local public school system having its own decision-making board of control, which does not operate schools but pays tuition to other operating systems for the education of the children living within its boundaries.

is justified for the following reasons: (1) their inclusion introduces the risk of double counting in states where students are found on local rosters and on superordinate rosters; (2) the numbers of students in such units are comparatively small enough that they could not serve as an analytic category.

- Public agencies, such as state education agencies (with the exception of the Department of Education in Hawaii, which is an LEA); Bureau of Indian Affairs (BIA) schools; achievement centers and regional resource centers; private agencies, such as homes for delinquent students; and Texas Independent State School Districts, which primarily are correctional facilities and homes for delinquent students. Included, however, are the "accommodation" school districts in Arizona, which are regular operating LEAs with nontraditional boundaries (e.g., around federal dams and military installations).·

- LEAs from Puerto Rico, Guam, and other territories, to reduce the cost and complexity of future data collection.

- LEAs that do not serve students in grades 2 through 7, which are most likely to encompass the age range of SEELS students (i.e., to be part of the sampling universe, an LEA must offer instruction in at least one of grades 2 through 7).

- LEAs (most with very small enrollments) for which the stratifying variable of district wealth cannot be obtained (see "Stratification" section for a discussion of the stratification variables).

- LEAs with 10 or fewer students in grades 2 through 7. Such schools would have an estimated enrollment of less than one student in special education in the target age range.

Creating the Sampling Frame

To create a sampling frame or master list of LEAs, two lists were considered: the public school universe maintained by Quality Education Data (QED, 1998) and the School District Name and Address File maintained by the National Center for Education Statistics in the U.S. Department of Education (1997). The two lists were compared on variables indicating LEA name and location. There were a small number of discrepancies in LEA name and contact information, probably because the data were drawn from different school years. The list with the most current information, QED, was used to construct the sampling frame. As a commercial source, it must maintain accurate data, including addresses of special education coordinators in each district, for its clients. The QED data are from the 1997-98 school year, as updated during the fall of 1998. Using the QED data, the following procedures were used to create a master list of LEAs that were eligible for the SEELS sample:

- Obvious errors were corrected, such as blank or duplicate records, no names, spelling errors, invalid codes, and extreme outliers.

- Sometimes two or three LEAs had the same name. LEAs with the same names were checked to make certain they were actually distinct LEAs.

- All nonoperating LEAs, supervisory unions, vocational-technical districts, and relevant public agencies were eliminated (see previous discussion), as were all districts that did not serve any grade in the grade 2 through grade 7 range.

These procedures resulted in a master list of 13,426 LEAs that are expected to have at least one student in special education in the appropriate age range. These comprise the SEELS LEA sampling frame.

Stratification

The SEELS LEA sample is stratified for four principal reasons: (1) to increase the precision of estimates by eliminating between-strata variance, (2) to ensure that low-frequency types of LEAs (e.g., large urban districts) are adequately represented in the sample, (3) to improve comparisons with the findings of other research, and (4) to make SEELS responsive to concerns voiced in policy debate (e.g., differential effects of federal policies in particular regions, LEAs of different sizes). The first of these reasons is especially important because of the great diversity in the universe of LEAs. Three stratifying variables are used—geographic region, district size (student enrollment), and a measure of district/community wealth. They were selected on the basis of conceptual soundness and the likelihood of providing a gain in precision over simple random sampling. These variables and their sources are described below.

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. Regions differ, for example, in the changes in school enrollment over time. They also differ in terms of economic health, which is linked to resources the region can target to education and other needed services. For SEELS, the regional classification variable selected is used by the Department of Commerce, the Bureau of Economic Analysis, and the National Assessment of Educational Progress (see Table 4-3).

Table 4-3		
DISTRIBUTION OF STATES BY REGION		
Northeast (N = 12)		
Connecticut	Maryland	New York
Delaware	Massachusetts	Pennsylvania
District of Columbia	New Hampshire	Rhode Island
Maine	New Jersey	Vermont
Southeast (N = 12)		
Alabama	Kentucky	South Carolina
Arkansas	Louisiana	Tennessee
Florida	Mississippi	Virginia
Georgia	North Carolina	West Virginia
Central (N = 12)		
Illinois	Michigan	North Dakota
Indiana	Minnesota	Ohio
Iowa	Missouri	South Dakota
Kansas	Nebraska	Wisconsin
West/Southwest (N = 15)		
Alaska	Idaho	Oregon
Arizona	Montana	Texas
California	Nevada	Washington
Colorado	New Mexico	Wyoming
Hawaii	Oklahoma	Utah

By assigning each LEA to a region based on its state, we obtain the allocation of LEAs and proportion of total estimated elementary/middle school student population in grades 2 through 7 to region indicated in Table 4-4.

Table 4-4				
DISTRIBUTION OF LEAS AND STUDENT POPULATION BY REGION				
Region	Number of LEAs	Percent of LEAs	Number of Students	Percent of Students
Northeast	2,815	21.0	4,159,121	19.9
Southeast	1,605	12.0	5,117,654	24.4
Central	5,049	37.6	4,870,149	23.2
West/Southwest	3,957	29.4	6,802,643	32.5
TOTAL	13,426	100.0	20,949,567	100.0

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. These include the extent of district administrative/supportive capacity, the degree of specialization in administrative structure, the nature of citizen and interest group activity in education, and the characteristics of relationships with state and federal governance systems.

In addition, total enrollment (and the previously described estimated elementary/middle school enrollment) serves as an initial proxy for the number of students in 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 2 through 7). These are either districts in large urban centers or large county systems, which are typically organizationally complex and likely to be divided into subdistricts.

- **Large** (estimated enrollment from 4,707 to 17,411 in grades 2 through 7). These are districts set in small to medium-sized cities or large county systems. They are also organizationally complex, but these systems tend to be centralized.

- **Medium** (estimated enrollment from 1,548 to 4,706 in grades 2 through 7). These typically are suburban districts, large rural towns, and small county systems.

- **Small** (estimated enrollment between 10 and 1,547 in grades 2 through 7). The majority of districts in the country fall into this group. Most are small rural districts, which most likely receive little money for special education programs; the range of activities that these funds can be used for is likely to be extremely narrow.

The distribution of districts among these strata and proportion of students accounted for by each stratum are displayed in Table 4-5.

Table 4-5				
DISTRIBUTION OF LEAS AND STUDENT POPULATION BY LEA SIZE				
Enrollment Size Category	Number of LEAs	Percent of LEAs	Number of Students	Percent of Students
Very large (> 17,411)	127	0.9	5,221,029	24.9
Large (4,707 – 17,411)	644	4.8	5,253,803	25.1
Medium (1,548 – 4,706)	2,050	15.3	5,237,205	25.0
Small (10 – 1,547)	10,605	79.0	5,237,530	25.0
TOTAL	13,426	100.0	20,949,567	100.0

District/community wealth. LEAs differ greatly in the resources they have available and in the demands placed on those resources by low-income students whose needs put them at risk for a variety problems, including school failure. Policies and programs may differ in LEAs that face these differential demands of disadvantaged students. Also, prior research has demonstrated that high-poverty districts also have a high proportion of students in special education. 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 distribution of districts among strata and proportion of students accounted for by each stratum are displayed in Table 4-6.

Table 4-6 DISTRIBUTION OF LEAS AND STUDENT POPULATION BY DISTRICT WEALTH				
District Wealth (Orshansky Index)	Number of LEAs	Percent of LEAs	Number of Students	Percent of Students
High (0% – 12%)	3,869	28.8	5,204,897	24.8
Medium (13% – 34%)	3,939	29.3	5,530,089	26.4
Low (34% – 45%)	3,095	23.0	5,065,929	24.2
Very low (> 45%)	2,533	18.9	5,148,652	24.6
TOTAL	13,426	100.0	20,949,567	100.0

The Stratified Universe

The three variables generate a 64-strata grid into which the entire universe can be fit. Table 4-7 shows the strata and the number of LEAs in each stratum. Table 4-8 shows the number of students in all LEAs in each stratum. The next stage in the SEELS sampling process was to select the appropriate LEAs from each stratum to yield a total sample of 765 LEAs.[14] LEAs were selected from strata so as maximize the sampling efficiency and thereby maximize the effective sample sizes.

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[14] A SAS computer program was written to select eligible LEAs from the QED database, sort them into the appropriate strata, and then randomly select LEAs from within each stratum. In practice, each LEA within a stratum was assigned a number and the program was instructed to draw a random number and match it to the appropriate LEA. This process was repeated until the full sample of 765 LEAs was complete.

Table 4-7
NUMBER OF LEAS IN THE UNIVERSE/SAMPLE, BY STRATUM

District Size/Region	District Wealth (Orshansky Index)				
	High (0% – 12%)	Med (12% – 34%)	Low (23% – 45%)	Very Low (> 45%)	Total
Very large (>17,411)	18/8	31/13	31/18	47/26	127/65
Northeast	3/2	5/2	4/4	5/2	17/10
Southeast	4/2	14/6	15/9	14/88	47/25
Central	6/2	12/5	10/3	21/13	49/23
West/Southwest	5/2	0/0	2/2	7/3	14/7
Large	155/44	174/55	149/45	166/56	644/200
Northeast	24/6	17/5	11/3	15/5	67/19
Southeast	16/4	50/16	61/20	43/14	170/54
Central	60/19	71/24	56/16	94/32	281/91
West/Southwest	55/15	36/10	21/6	14/5	126/36
Medium	720/84	573/71	397/49	360/46	2,050/250
Northeast	302/34	133/16	61/8	30/4	526/62
Southeast	15/2	143/19	145/18	180/22	483/61
Central	85/11	159/20	138/17	131/17	513/65
West/Southwest	318/37	138/16	53/6	19/3	528/62
Small	2,976/84	3,151/74	2,518/52	1,960/40	10,605/250
Northeast	1,016/32	710/19	386/9	93/2	2,205/62
Southeast	35/2	196/8	299/10	375/14	905/34
Central	386/7	731/15	913/17	1,084/19	3,114/58
West/Southwest	1,539/43	1,514/32	920/16	408/5	4,381/96
Total	3,869/220	3,929/213	3,095/164	2,533/168	13,426/765

Table 4-8
NUMBER OF STUDENTS IN THE UNIVERSE/SAMPLE, BY STRATUM (THOUSANDS)

| District Size/Region | District Wealth (Orshansky Index) | | | | Total |
	High (0% – 12%)	Med (12% – 34%)	Low (23% – 45%)	Very Low (> 45%)	
Very large	463/194	1,083/414	1,759/1,287	1,916/1,220	5,221/3,115
Northeast	76/58	179/79	662/662	151/44	1,067/843
Southeast	91/47	481/212	624/318	546/332	1,742/1,909
Central	125/37	0/0	224/224	234/87	584/348
West/Southwest	171/52	424/123	249/83	984/757	1,829/1,015
Large	1,177/349	1,418/478	1,199/366	1,460/459	5,254/1,650
Northeast	154/53	121/34	78/24	138/49	492/160
Southeast	116/30	408/132	531/181	360/105	1,415/448
Central	398/120	255/76	160/47	127/38	940/281
West/Southwest	509/144	634/236	429/114	835/267	2,407/761
Medium	1,762/216	1,493/183	1,029/128	953/130	5,237/657
Northeast	707/80	328/41	161/23	90/13	1,285/157
Southeast	39/6	399/54	381/49	462/56	1,282/165
Central	783/98	345/34	135/14	51/10	1,314/156
West/Southwest	233/32	421/54	351/42	350/51	1,356/179
Small	1,802/53	1,536/42	1,079/25	820/19	5,238/139
Northeast	697/24	400/11	178/4	40/>1	1,315/39
Southeast	27/2	159/6	209/8	283/11	679/27
Central	925/25	669/17	333/6	106/1	2,032/49
West/Southwest	154/2	307/8	358/7	392/7	1,211/124
TOTAL	5,205/1,520	5,530/2,234	5,066/3,612	5,149/3,657	20,950/5,700

LEA Sample Characteristics

Our first step in assessing the effectiveness of the sampling process was to evaluate the degree to which the selected LEA sample was comparable to the universe from which it was drawn on variables used in the sampling process. Tables 4-9, 4-10, and 4-11 depict the characteristics of the LEA sample, in weighted and unweighted form, on the sampling variables of region, LEA size, and LEA wealth. Taken together, the tables illustrate that the weighted LEA sample closely resembles the LEA universe with respect to those variables.

Table 4-9				
WEIGHTED AND UNWEIGHTED DISTRIBUTION OF SAMPLED LEAS AND STUDENT POPULATION BY REGION				
Region, Weighted	Number of LEAs	Percent of LEAs	Number of Students	Percent of Students
Northeast	2,815	21.0	4,295,394	20.1
Southeast	1,605	12.0	5,134,032	24.1
Central	5,049	37.6	4,969,920	23.3
West/Southwest	3,957	29.5	6,944,088	32.5
TOTAL	13,426	100.1	21,343,435	100.0
Region, Unweighted				
Northeast	153	20.0	1,198,504	21.6
Southeast	174	22.7	1,549,696	27.9
Central	201	26.3	835,056	15.0
West/Southwest	237	30.0	1,978,082	35.5
TOTAL	13,426	100.0	5,561,338	100.0

Table 4-10				
WEIGHTED AND UNWEIGHTED DISTRIBUTION OF SAMPLED LEAS AND STUDENT POPULATION BY LEA SIZE				
Enrollment Size Category, Weighted	Number of LEAs	Percent of LEAs	Number of Students	Percent of Students
Very large (> 17,411)	127	0.9	5,225,470	24.5
Large (4,707 – 17,411)	644	4.8	5,288,505	24.8
Medium (1,548 – 4,706)	2050	15.3	5,368,699	25.2
Small (10 – 1,547)	10,605	79.0	5,460,759	25.6
TOTAL	13,426	100.0	21,343,435	100.1
Enrollment Size Category, Unweighted				
Very large (> 17,411)	65	8.5	3,115,284	56.0
Large (4,707 – 17,411)	200	26.1	1,649,463	29.7
Medium (1,548 – 4,706)	250	32.7	657,823	11.8
Small (10 – 1,547)	250	32.7	138,768	2.5
TOTAL	765	100.0	5,561,338	100.0

Table 4-11

WEIGHTED AND UNWEIGHTED DISTRIBUTION OF SAMPLED LEAS AND STUDENT POPULATION BY DISTRICT WEALTH (ORSHANSKY INDEX)

District Wealth, Weighted	Number of LEAs	Percent of LEAs	Number of Students	Percent of Students
High (0% – 12%)	3,869	28.8	5,323,816	24.9
Medium (13% – 34%)	3,929	29.3	5,671,446	26.6
Low (34% – 45%)	3,095	23.0	5,049,449	23.7
Very low (> 45%)	2,533	18.9	5,298,723	24.8
TOTAL	13,426	100.0	21,343,435	100.0
District Wealth, Unweighted				
High (0%-12%)	220	28.7	811,246	14.6
Medium (13%-34%)	213	27.8	1,116,664	20.1
Low (34%-45%)	164	21.4	1,805,501	32.5
Very low (>45%)	168	21.9	1,827,927	32.9
TOTAL	765	100.0	5,561,338	100.1

In addition to ensuring that the LEA sample matched the universe of LEAs based on variables used in the sampling, it was important to ascertain whether this stratified random sampling scheme 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 (Table 4-12), and the district's proportion of minority students (Table 4-13). If comparisons between the universe of LEAs and the sample revealed a poor fit, either the sample would be reweighted or a new sample would need to be selected. However, Tables 4-12 and 4-13 reveal that the fit between the weighted LEA sample and the LEA universe is quite good.

Table 4-12

WEIGHTED DISTRIBUTION OF SAMPLED LEAS AND UNIVERSE BY METROPOLITAN STATUS

District Type	Number in Universe	Percent of Universe	Weighted Number in Sample	Percent of Weighted Sample
Unclassified	766,787	3.7	842,107	3.9
Large central city	2,819,935	13.5	2,992,281	14.0
Midsize central city	3,632,880	17.3	3,248,397	15.2
Urban fringe of large city	3,355,052	16.0	3,321,762	15.6
Urban fringe of midsize city	2,200,565	10.5	2,202,556	10.3
Large town	660,781	3.2	723,401	3.4
Small town	4,722,488	22.5	5,216,708	24.4
Rural	2,791,079	13.3	2,796,222	13.1
TOTAL	20,949,567	100.0	21,343,435	100.0

Table 4-13

WEIGHTED DISTRIBUTION OF SAMPLED LEAS AND UNIVERSE BY PROPORTION OF MINORITY STUDENTS

Minority Student Population	Number in Universe	Percent of Universe	Weighted Number in Sample	Percent of Weighted Sample
Less than 5%	3,750,842	17.9	3,890,816	18.2
5% – 10%	2,379,978	11.4	2,549,725	11.9
10% – 20%	2,826,669	13.5	2,995,207	14.0
20% – 50%	5,655,285	27.0	5,681,479	26.6
50% – 100%	6,336,793	30.2	6,226,209	29.2
TOTAL	20,949,567	100.0	21,343,436	100.0

Weighting

Because LEAs have an unequal probability of being selected into the sample, depending on the stratum within which they fall, LEAs will need to be weighted by the inverse of the stratum sampling fraction to create population estimates. As discussed previously, approximately 1,150 students must be sampled in the higher-incidence disability categories, 375 students with traumatic brain injury, and 200 deaf-blind students to make national estimates with reasonable precision about students in each category and students in special education overall.

Student Sample Selection Procedures

During the design task, SRI will contact LEAs and obtain their agreement to participate in the study. Subsequently, in the fall of the 1999-2000 school year, the study contractor will request from participating LEAs rosters of students in special education between the ages of 8 and 12. Requests for rosters will specify that they contain the names and addresses of students in special education under the jurisdiction of the LEA, the disability category of each student, and the students' birthdates or ages. As mentioned previously, some LEAs can be expected to provide only identification numbers for students, along with the corresponding birthdates and disability categories. When students are sampled in these LEAs, identification numbers of selected students are provided to the LEA, along with materials to mail to their parents/guardians (without revealing their identity to the study contractor).

After estimating the number of students enrolled in special education at the appropriate grade levels, the fraction of students in each category at each age that must be selected randomly from each district to yield a sample of 12,075 students must be determined. These sampling fractions will be calculated to maximize the effective sample efficiency while obtaining the required absolute sample sizes. Final sampling fractions cannot be calculated until the composition of the sample of participating LEAs is known; however, initial estimates are presented in Table 4-14.

Table 4-14 ESTIMATED STUDENT SAMPLING FRACTIONS BY LEA SIZE STRATUM (PERCENT)				
	Very Large	Large	Medium	Small
Specific learning disability	12.1	2.4	0.9	0.6
Speech or language impairment	14.3	2.8	0.9	0.6
Mental retardation	56.0	11.0	4.3	2.7
Serious emotional disturbance	87.0	17.1	6.7	4.2
Multiple disabilities	100.0	60.0	24.5	15.0
Hearing impairments	100.0	90.0	31.0	23.0
Orthopedic impairments	100.0	89.0	37.0	22.5
Other health impairments	100.0	29.0	11.5	7.26
Visual impairments	100.0	100.0	100.0	71.2
Autism	100.0	100.0	51.0	33.0
Deaf-blindness	100.0	100.0	100.0	100.0
Traumatic brain injury	100.0	100.0	100.0	100.0

In addition, from the state-supported special schools, 100% of students who are deaf-blind, 50% of students with visual impairments, and 15% of those with hearing impairments are expected to be sampled.

Student sampling weights are the product of the LEA sampling weights and the inverse of the student sampling fraction. The student sampling weight is the number of students in the universe represented by an individual student in the sample. Estimated sampling fractions and weights are included in Table 4-15. In addition, from the state-supported special schools, we expect sampling weights of 3.8 for the deaf-blind, 7.6 for students with visual impairments, and 25.8 for students with hearing impairments.

Table 4-15 EXPECTED STUDENT SAMPLING WEIGHTS BY LEA SIZE STRATUM				
	Very Large	Large	Medium	Small
Specific learning disability	967	967	967	967
Speech or language impairment	819	819	819	819
Mental retardation	209	209	209	209
Serious emotional disturbance	134	134	134	134
Multiple disabilities	117	37	37	37
Hearing impairments	117	26	26	26
Orthopedic impairments	117	25	25	25
Other health impairments	117	78	78	78
Visual impairments	117	23	9	8
Autism	117	23	17	17
Deaf-blindness	117	23	9	5.6
Traumatic brain injury	117	23	9	5.6

Schedule of Activities Related to LEA and Student Sample Selection

Table 4-16 contains a description of the activities required to complete the selection of the student sample.

Table 4-16 SEELS SAMPLE DESIGN ACTIVITIES AND SCHEDULE	
Solicit input from SEELS advisory panel	10/23/98 and following
Notify state education agencies (SEAs)	12/98
Select sample of LEAs and state-supported schools	12/98-1/99
Recruit LEAs and state-supported schools	1/99-5/99
First interim sampling report	2/24/99
Second interim sampling report	3/24/99
Final sampling report	6/24/99
Final sampling fractions	7/26/99
Collect student rosters from LEAs and state-supported schools	9/99-12/99
Follow up with LEAs that do not respond	9/99-12/99
Select student sample	12/99
Provide sample to SEELS study contractor	1/2000

Minimizing Sample Attrition

To minimize sample attrition over the years of data collection, the SEELS study contractor will need to use aggressive tracking mechanisms to maintain accurate and up-to-date contact information for sample members. To aid in this task, the parent questionnaire will include information that will facilitate tracking of parents/guardians, such as additional work and home telephone numbers for the respondents, location information for one or more friends or relatives who would know where the family had moved, and e-mail addresses.

5. SEELS DATA ANALYSIS AND DISSEMINATION

The SEELS sample, research agenda, and data collection schedule make SEELS an especially ambitious study. The study must be equally ambitious with regard to analysis and dissemination so that the generated information will be of maximum use to as many audiences as possible. Specifically, the SEELS analysis and dissemination strategies need to address the following issues:

- **Range of audiences.** SEELS will create a wealth of new information that will be of interest to many audiences, including parents, teachers, administrators, related service professionals, policy-makers, advocacy organizations, and researchers. SEELS will need to consider both the content and presentation of information that suits particular audiences best.

- **Range of information needs.** Related to the variety of audiences, the study will need to address a range of information needs to maximize its usefulness. For example, reports documenting the study's technical details, comprehensive reports, executive summaries, briefing materials, one-page descriptions, peer-reviewed journal articles, a World Wide Web presence, and special topic reports all are likely to play important roles in communicating the study's results.

- **Types of analyses.** Data generated from SEELS will need to support a range of analytic purposes:

  - **Descriptive.** One of the most important analytic tasks of the study will be to describe students in special education at the applicable ages, their background and characteristics, the education they receive, and the outcomes they achieve. These descriptions will need to be weighted so as to represent the national population of students in special education in elementary schools as a whole and by age and disability group.

  - **Relational.** An additional analytic purpose will be to explore relationships between various contexts, characteristics, practices, and outcomes. These relationships may need to be examined by a variety of subgroups defined by disability, age or grade, gender, ethnicity, or other factors.

  - **Explanatory.** An important purpose of the SEELS analysis approach will be to explain the contribution of individual factors and combinations of factors to variation in outcomes.

  - **Comparative.** Many findings are most powerfully understood when placed in the appropriate comparative context. SEELS findings will gain important perspective in their ability to be compared with other national data collections, particularly for peers without disabilities. Items that have been used in national surveys are being included in the SEELS design so that comparison between databases will be possible. Currently, items in SEELS protocols have been borrowed from the Schools and Staffing Survey (SASS), National Health

Interview (NHI), National Early Intervention Longitudinal Study (NEILS), and Early Childhood Longitudinal Study (ECLS).

– **Longitudinal.** Repeated measures over time offer the opportunity to examine and explain changes in student behaviors and outcomes, as well as changes in factors that could influence them, such as school programs and family contexts.

These analyses need to be tailored to formats and conventions that are appropriate for different audiences and formats.

- **Range of media.** The variety of ways in which people access information has increased greatly over the last decade. This represents a great opportunity for SEELS to communicate both progress on study activities and study findings. Possible avenues include CD-ROM and the World Wide Web to supplement traditional media.

Data Analysis Strategy

Given the range of likely SEELS data analysis and dissemination activities, it is appropriate to refer to SEELS analysis and dissemination as consisting of multiple interrelated strategies rather than a single strategy. Thus, the approach here is to propose analysis and dissemination strategies that link likely study analyses and their products to the study's data collection timeline. This approach provides a general framework that will allow for thoughtful planning about analysis and dissemination, but one that is sufficiently flexible to accommodate changes in terms of particular topic areas that may be of interest over the course of the study. Thus, a variety of documents are suggested that are linked to specific waves of data collection, including comprehensive reports, technical reports, and special topic reports. Table 5-1 shows illustrative topics for the reports, as well as their possible timelines and data sources. These topics are placeholders; the actual content addressed in many of the documents may well be different in the implementation of the study.

Table 5-1			
ILLUSTRATIVE DATA ANALYSIS AND REPORTING OUTLINE			
Product	Approx. Date	Data Sources*	Potential Topic Areas
Wave 1 Parent Guardian Interview			
Comprehensive Report	5/01	PGI	• Who are the students in elementary and middle school special education, in terms of demographics, household characteristics, and student abilities/disabilities? • What are their parent-reported educational (e.g., home literacy activities) and non-educational experiences (e.g., extracurricular group activities)? • How are parents involved in and supportive of their children's education? • What are parents' expectations for their children's futures? • How satisfied are parents and students with their schools and school programs?
Technical Report	5/01		• Sampling details • Weighting specifications • Nonresponse analysis
Wave 1, School and Student Data Collection			
Technical Report	12/02		• Sampling details • Weighting specifications • Nonresponse analysis • Accommodations provided
Special Topic Report #1	7/02	LATS, SPS, SBS	• What are the schools like that serve students in special education? • What are students' school programs like in terms of placement, curriculum and instruction, access to general education, performance assessment practices, accommodations, etc.? • How do schools interact with parents?
Special Topic Report #2	7/02	PGI, LATS, SPS, DA, SS	• How well are students in special education doing at school, both academically and socially? • How do students view their school experience and performance?
Special Topic Report #3	7/02	PGI, DA, SPS, LATS, SBS, SS	• What are the individual, household, school, and school program factors that help explain variations in student outcomes?

Table 5-1 (Concluded) ILLUSTRATIVE DATA ANALYSIS AND REPORTING OUTLINE			
Wave 2, All Sources			
Comprehensive Report	3/03	PGI,	• Trends in factors reported in the first comprehensive report on parent interview data
Technical Report	6/03		• Sampling details • Weighting specifications • Nonresponse analysis • Accommodations provided
Special Topic Report #1	8/03	LATS, SPS, DA, SS	• Trends in student performance at school
Special Topic Report #2	8/03	PGI, LATS, SPS, SBS, DA, SS	• What individual, household, school, and school program factors in one school year help explain change in student performance from the previous to the current school year?
Wave 3, All Sources			
Overview Report	3/05	PGI	• Trends in factors reported in the first comprehensive report on parent interview data
Technical Report	5/05		• Sampling details • Weighting specifications • Nonresponse analysis • Accommodations provided
Special Topic Report #1	8/05	LATS, SPS, DA, SS	• Trends in student performance at school
Special Topic Report #2	8/05	PGI, SS	• Trends in school programs—how the experiences of particular grade levels change over time
Special Topic Report #3	8/05	PGI, LATS, SPS, SBS, DA, SS	• What are the individual, household, school, and school program factors that help explain variations in student outcomes?
Special Topic Report #4		PGI, SPS, LATS, SBS	• Declassification from special education—not a one-way street • What individual, household, school, and school program factors help explain why some students are declassified and others are not?

* PGI=parent interview; LATS=teacher survey; SPS=school program survey; SBS=school background (principal) survey; DA=direct assessment; SS=student survey.

In addition to these formal reports, professional journal articles that report segments of analyses from the larger reports also should be produced.

SEELS will use a variety of statistical and analytic methods to generate this variety of products. Likely methods to be used include:

- Weighted frequencies, cross-tabulations, and summary statistics. These tools provide descriptive information in conjunction with standard errors to estimate their degree of precision.

- Exploratory data analysis. The graphical tools used in EDA are especially useful for uncovering patterns in datasets and among subsamples of the data.

- Correlational analyses. Simple and multiple correlation coefficients for continuous, dichotomous, and ordinal data allow investigation of relationships among variables in comparison with both statistical standards and the relative strength of specific relationships across subgroups.

- Multiple regression. The linear combination of variables to predict and explain variation in a continuous dependent variable.

- Logistic regression. The linear combination of variables to predict and explain variation in a dichotomous dependent variable.

- Hierarchical linear modeling. Multi-level HLM allows the construction of models that sort factors into conceptually logical strata.

- Structural equation modeling. This method may be useful to construct and test models among underlying (as opposed to measured) factors.