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## ABSTRACT

This paper reports the results of a study of 1,300 special education students attending 81 elementary, middle, and high schools in Massachusetts that examined the patterns of variation in services delivered to students with disabilities in relation to student characteristics. Results of the study indicate that the majority of these students spent some portion of their time in regular classrooms. Almost 57 percent of the students served were in nondepartmentalized environments and spent some portion of their week receiving services from regular self-contained classroom teachers. Many students with disabilities received special education services while in the regular classroom. In many cases, the data suggest that these special education teachers served both special and regular education students while in these classrooms. More than 34 percent of the students with disabilities in nondepartmentalized environments were served in special classes, and almost 39 percent are served by a special education resource teacher in a resource room. For the majority of students served in nondepartmentalized and in departmentalized settings, approximately one-third of the per pupil costs of serving students with disabilities are generated within the regular classroom settings. For ungraded students, this percentage of expenditure accounted for in the regular setting falls to around 7 percent. Although only small percentages of students are involved, it appears that often students with more severe disabilities receive other specialized or extended care services from nurses, health professionals, personal nurses, aides, or other family counseling and social services. (CR)

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# The Patterns of Services Provided to Students with Disabilities

Jay G. Chambers, Ph.D.  
 September 1998



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**The Center for Special Education Finance** was established in October 1992 to address a comprehensive set of fiscal issues related to the delivery and support of special education services to children throughout the U.S. The Center's mission is to provide information needed by policymakers to make informed decisions regarding the provision of services to children with disabilities, and to provide opportunities for information sharing regarding critical fiscal policy issues.

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# Acknowledgments

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This paper is based on a larger study for the Commonwealth of Massachusetts conducted by the Center for Special Education Finance (CSEF). The full report on which this paper is based is entitled *Comprehensive Study of Special Education for the Commonwealth of Massachusetts — Final Report*. The report provides a detailed analysis of the revenues, expenditures, and uses of funds in special education. Copies may be obtained from CSEF.

The study was conducted in the wake of the Education Reform Act passed by the Massachusetts state legislature in June 1993. This legislation was intended to provide the Commonwealth of Massachusetts with the four major components necessary to ensure high quality education for every student:

- new standards and programs that ensure high achievement for all students
- enhanced quality and accountability for all educational personnel
- a governance structure that encourages innovation and accountability
- a fair and equitable system of school finance

As a result of education reform, there has been an increase in the state share of education costs and a heightened interest in understanding the costs and uses of education funds.

We would like to express our gratitude to various staff members of the Massachusetts Department of Education for their contributions to this project. We would like to thank Mary-Beth Fafard, Pam Kaufmann, Suzanne Knight, Jeff Nelhaus, Tom Collins, Mary Jane McDonnell, Phyllis Rogers, and Christine Lynch. Special thanks to Marcia Mittnacht.

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# I. Introduction and Purpose ---

The relative growth of special education expenditures has been a topic of concern among educational policymakers at all levels. The potential for encroachment of special education spending on regular education has stimulated serious consideration of finance reform within a majority of the states in the nation. This policy debate pits special education against regular education in part because the right to a free and appropriate public education was established exclusively for students with disabilities under the *Individuals with Disabilities Education Act* (IDEA).

This kind of debate between special and regular education may not adequately reflect the diversity of needs represented within the community of students who are found eligible for special education services. Students with disabilities represent a significantly wider and more diverse set of special needs than do all of the remaining students served in K–12 education in the United States. At the same time, students with disabilities obviously share many of their basic needs for educational services with other students. This overlap of needs is particularly significant in light of the current movement toward the alignment of standards of service and assessments for all students, with and without disabilities.

Nevertheless, to understand the factors that may contribute to significant changes in special education expenditures over time, policymakers must first understand the ways in which services are currently delivered to students with disabilities.

Furthermore, policymakers must understand how the characteristics of students with disabilities relate to the levels and composition of services and expenditures, and they must understand the areas of services that students with disabilities share with all other (i.e., regular) students. It is through understanding these patterns of service delivery that policymakers can then begin to appreciate the factors that may result in changes in the overall expenditures on special education.

What is required is a better recognition of the factors that reflect educational needs among not only special education, but all students. These need characteristics should be based on criteria that are as objectively measured as possible so that funding formulas based on these need factors do not significantly influence the identification or placement of students to inappropriate service delivery models.<sup>1</sup>

Expenditure differences arise out of differences in student needs. Moreover, students may be categorized according to their own characteristics (e.g., age, grade level, disability, level of need) or according to their placement (referred to in this paper as their service prototype).<sup>2</sup> Each way of categorizing students reveals significant information about the patterns of expenditure variation. While the state may select one way of categorizing students for the purpose of funding or reimbursement, the various factors that contribute to the patterns of variation are important in understanding the equity implications of alternative funding

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<sup>1</sup> The state of Florida has recently undertaken a study focused on the development of objective criteria for classifying special education students to determine needs for services, their costs, and the level of state funding to be provided (Florida Department of Education, 1996).

<sup>2</sup> This terminology, the service prototype, is adopted to conform to that of the Commonwealth of Massachusetts, whose data provide the basis for the analysis in this paper.

mechanisms. Differences in the distribution of students with respect to various need categories, for example, may have dramatic effects on costs. School systems enrolling more high-need students than other school systems will tend to exhibit higher per student expenditures.

The purpose of this paper is to examine the patterns of variation in services delivered to students with disabilities in relation to student characteristics, and to illustrate how student needs relate to patterns of service and expenditure.

Section II describes the institutional context for the study and discusses the study methodology. This study is unique in that it uses detailed data on individual students as the unit of analysis in order to understand the diversity of student needs and the associated patterns of expenditures.

Section III explores the educational and service needs of students with disabilities from the perspective of the resources required to meet those needs. The data presented portray various combinations of regular and special services received by students with disabilities.

Section IV examines the implications of those service configurations on the costs of providing services to different types of students, and it identifies what portion of total per student expenditures is generated by services provided in different education settings.

Finally, Section V presents a summary of the results and points to future directions of policy and research based on this analysis.

## II. Context and Study Methodology

### Context

Prior to the 1993 *Education Reform Act* passed by the Commonwealth of Massachusetts, special education funding relied on a system of weights based on student placement.<sup>3</sup> The new funding formula adopted as a result of the reform is a census-based system in which additional funds for special education are allocated to school systems based on the total student population rather than on actual counts of students with disabilities.

Central to the *Reform Act* was the establishment of a funding formula to provide all schools with adequate and equitable education resources. These resources provide the foundation on which the rest of the reform components are built. This Foundation budget — comprising a combination of local and state resources — is based on assumptions regarding educational service requirements for the number and types of students in attendance and a standard of local taxation for every community.

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<sup>3</sup> The term placements, as used in this paper, is based on the service prototypes previously used by the Commonwealth of Massachusetts to describe the ways in which special education students were served.

Funding for special education is included in the Foundation budget. All students are first counted as regular education and associated with a basic foundation of support for services. The Foundation formula then provides additional funds for special education based on a presumed percentage of students needing special education services.<sup>4</sup> One rationale for this type of formula is that it does not provide a fiscal incentive to identify and label students for special education. The formula was also designed to support a philosophy of inclusion by eliminating incentives for separate placements for students with disabilities.

## Data and Samples

The Center for Special Education Finance (CSEF) study includes data collected for a random sample of approximately 1,300 special education students attending 81 elementary, middle, and high schools in Massachusetts. These schools, in turn, were randomly selected from 25 school districts selected from a stratified random sample of the three different types of schools systems (i.e., local K–12, elementary, and regional school systems). The sample school systems were selected with probability proportional to district size (i.e., larger districts had a greater chance of

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<sup>4</sup> The special education component of the Foundation formula assumes that 14 percent of the entire student population served within the district will receive special education services for 25 percent (on average) of the school day. Therefore, additional funds are provided based on 3.5 percent (14 percent x 25 percent = 3.5 percent full-time equivalent [FTE]) of the student population. For the 1994–95 school year, this amounted to \$14,870 for every FTE student (or \$3,718 for each .25 FTE student). The formula also assumes that 1 percent of the student population will be served out-of-district. Therefore, the state also provides \$15,533 (1994–95) for these presumed out-of-district placements. In addition, the state pays 50 percent of the tuition of students actually placed in out-of-district residential placements. The formula also assumes that in vocational schools, 18 percent of the student population will receive special education services in-district for one-quarter of the day (18 percent x .25 = 4.5 percent FTE)

being selected). Three of the school systems in the original sample did not wish to participate in the study and were replaced with a school system from the same stratum.

The original study includes data collected from the sample districts, schools, and special education service providers. In addition to completing a *Special Education Teacher/Service Provider Questionnaire*, each respondent also completed an *Information About a Special Education Student* form for three randomly selected students from their class or caseload.<sup>5</sup> District special education directors also provided information on a sample of special education students served in out-of-district placements. The student-level data collection provided information on the services a student receives and the number and type of school staff providing these services. In total, CSEF staff collected information on 415 teachers/service providers (80.3 percent response rate) and 1,297 students (80.2 percent response rate).<sup>6</sup> School and district level data were obtained from 100 percent of the participating schools and districts. Table 1 details the breakdown by type of school system.

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<sup>5</sup> Instructions were provided to each respondent on how to select the students at random from their classes or caseloads.

<sup>6</sup> The response rates are estimates. The teacher/service provider response rate was calculated by dividing the total number of usable surveys completed and returned by the number of teachers that could have responded. The number of teachers that could have responded varied by school depending on the number of surveys CSEF sent (a minimum of 5) and the number of special education service providers located at the school. The student information form response rate was calculated by dividing the number of usable forms by the number of forms teachers could have completed and returned.

**Table 1. Number of Student Surveys Used in This Analysis**

	Total	Student Information Forms		
		Nondepartmentalized Settings	Departmentalized Settings	Out-of-District Placements
<b>Local K–12 School Systems</b>	51	—	—	51
Elementary Schools	480	444	36	—
Middle Schools	462	87	175	—
High Schools	323	61	262	—
<b>Elementary School Systems</b>	6	—	—	6
Elementary Schools	40	40	n/a	—
<b>Regional School Systems</b> (vocational and academic combined)	9	—	—	9
Elementary Schools	30	30	n/a	—
High Schools	96	12	84	—
<b>Total</b>	<b>1297</b>	<b>674</b>	<b>557</b>	<b>66</b>

While the sample was not originally stratified on the basis of the instructional setting for students served within the district, it is useful to display the sample in Table 1 in terms of those students in departmentalized versus nondepartmentalized settings because of the role this factor plays in the subsequent analysis.

Middle and high schools are traditionally organized in departmentalized environments in which the school day is divided into separate class periods.<sup>7</sup> Elementary schools are more commonly organized as nondepartmentalized settings.<sup>8</sup> However, in some instances, certain higher grade levels in an elementary school are departmentalized. Moreover, certain categories of students (e.g., severely disabled) may be served in self-contained environments regardless of grade level. The data collection forms used to gather student services distinguish between these two modes of service delivery.

## Methodology

The analysis contained in this paper focuses on personnel expenditures for instructional and related services to students. Nonpersonnel expenditures represent only a small percentage (perhaps less than 5 percent) of instructional and related services expenditures, and compatible data across sites on nonpersonnel resources are more difficult to obtain.

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<sup>7</sup> In the most common departmentalized models, both regular and special education students are enrolled in anywhere from five to seven class periods, each of which focuses on a different subject or specialized set of skills. This environment is referred to as departmentalized since the courses are most commonly organized into separate departments by subject area.

<sup>8</sup> Nondepartmentalized environments are characterized by self-contained classrooms, organized by grade level(s), in which students are assigned to classrooms staffed, most often, by one full-time teacher who provides instruction in most of the primary academic and, in some cases, nonacademic subjects. In some instances, classes or subsets of subjects are team taught or are instructed by subject matter specialists.

The study uses a Resource Cost Model (RCM) approach to data collection and analysis. The RCM is a bottom-up approach to gathering data on resources.<sup>9</sup> Personnel resources allocated to students are initially measured in hours and are organized according to the way services are delivered to students (e.g., self-contained classrooms, pull-out programs, supplemental instructional services within the regular classroom, or departmentalized classrooms).

Another feature of the study is that the effects of differences across school systems in the salaries and benefits paid to school personnel are removed from the analysis. All expenditure estimates use an estimated statewide average salary and benefit rate for each different employee job title represented in the data. For example, all teachers are assigned the same salary and benefit rate regardless of the school system in which they teach. Each of the other categories of service providers (e.g., speech therapists, instructional aides, counselors) is treated in a similar fashion. Thus, none of the differences in expenditures observed in this study may be attributed to any factors (e.g., local labor market conditions or teacher quality) that might affect the levels of salaries and benefits across local school systems within the state. The remaining differences in expenditures are those associated only with differences in the quantities and combinations of different kinds of personnel used in the provision of services to children with various disability conditions or special needs.

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<sup>9</sup> Initially, this was referred to as the ingredients approach by Levin (1983) because of its focus on the physical ingredients allocated for programs and services. As this methodology has been used and enhanced by Chambers and Parrish (1982, 1984, 1993) over the years, it has come to be known as the Resource Cost Model, or RCM, approach.

All of the descriptive statistics presented this report are intended to reflect statewide estimates except where explicitly noted. All data from the sample of students have been weighted, so that the descriptive statistics represent estimates of the values for the statewide population from which the samples are selected.

## III. Services Received by Students with Disabilities

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Each student has a unique set of educational and service needs. The data presented in this section portray these needs from the perspective of the resources required to meet them. These data provide a picture of the various combinations of regular and special services received by students with disabilities. This section addresses the following questions:

- How much time does the average student with disabilities spend with students in regular education programs?
- What other kinds of related services do students with disabilities receive?
- To what extent are special education services provided within regular education as opposed to segregated (e.g., pull-out or separate classroom) settings designed for students with disabilities?
- How do these patterns differ for students with disabilities served in nondepartmentalized (mostly elementary) versus departmentalized (mostly secondary) environments?

Addressing these questions provides a foundation for understanding the patterns of expenditures on students with disabilities. Moreover, it reveals the extent to which special education services are either integrated with, or segregated from, regular education services.

For the purpose of this discussion, the students with disabilities have been divided into two groups: those students who are served within and those who are served outside the local school system. In addition, those students with disabilities who are served within the district may be further divided into those served in departmentalized (mostly secondary school) versus nondepartmentalized (mostly elementary school) environments. The reason for dividing students in this fashion is that the basic organization of service delivery, as well as the distribution of students by grade level and age, are quite different.

Table 2a describes the configurations of services received by students with disabilities who are being served in nondepartmentalized environments. Table 2b presents similar data for students served in departmentalized environments. The patterns of services for each of these categories of students are described in separate sections below. In each table, the first column contains a description of the services and resources provided to students with disabilities. The second column presents an estimate of the percentage of students who are receiving each specific service. Of those students receiving each specific service, the third through sixth columns indicate, respectively, the average hours of service received per week, the average class or group size in which the service is provided, the average personnel expenditure per student for the service, and the percentage of those

students receiving the service for whom the service is paid by Medicaid or another non-school agency.

## **Nondepartmentalized Environments**

Special education students in nondepartmentalized settings receive services in one of three basic settings: the regular self-contained elementary classroom, some combination of the regular classroom and a resource room for students with disabilities, or a special class specifically designed only for students with disabilities. In addition, a relatively small percentage of these students receive some extended time (before- or after-school) services, as well as other related medical and psychological services provided on a weekly or monthly basis. As policymakers begin to think more about stimulating inclusive practices in schools, it is of interest to note the percentages of special education children who receive services within the regular classroom as opposed to services in separate or segregated environments.

Table 2a. Services and Resources Received by Students with Disabilities Served in Nondepartmentalized Settings: School Year 1994-95

Within Regular Classroom	Estimated Percent of Students Receiving Services	For Those Students Receiving Each Service:			
		Hours per Week of Service	Class or Group Size in Which Service Was Provided	Personnel Expenditures per Student	Percentage Paid by Non-School Agency
<b>Regular Education Program Staff</b>					
Self-contained classroom teacher	56.67%	18.73	23	\$1,558	0.00%
Team teacher	5.06	11.75	23	938	0.00
Subject matter specialists	62.01	4.22	24	308	0.00
Instructional aides	8.87	7.48	26	125	0.00
<b>Special Education Program Staff</b>					
Resource teacher/specialist	23.03	11.88	19	1,294	0.00
Instructional aides	17.23	9.83	20	513	0.00
Other	0.98	2.54	4	2,304	0.00
<b>Related Service Provider</b>					
Speech/Language specialists	18.30	0.96	12	240	a
Physical/Occupational therapists	6.06	1.56	15	244	a
Other	2.77	1.25	4	337	37.89
<b>Title I (Chapter 1) Program Staff</b>					
Resource teacher	1.92	4.92	8	1,489	0.00
Instructional aides	0.12	3.75	12	138	0.00
<b>ESL/Bilingual Program Staff</b>					
Resource teacher	3.91	1.98	26	142	0.00
Instructional aides	0.62	26.24	24	483	0.00

*continued . . .*

Table 2a. Services and Resources Received by Students with Disabilities Served in Nondepartmentalized Settings: School Year 1994-95 (continued)

Outside Regular Classroom	Estimated Percent of Students Receiving Services	For Those Students Receiving Each Service			
		Hours per Week of Service	Class or Group Size in Which Service Was Provided	Personnel Expenditures per Student	Percentage Paid by Non-School Agency
<b><i>Special Class for Disabled Students</i></b>					
Special class teacher	34.51%	23.70	10	\$4,507	0.00%
Instructional aides	24.28	20.78	10	1,414	0.00
<b><i>Special Education Resource Room</i></b>					
Resource teacher/specialist	38.86	12.50	10	2,384	0.00
Instructional aides	17.46	15.50	11	716	0.00
Additional resource teachers	0.52	4.98	6	1,092	0.00
Additional instructional aides	0.15	2.00	2	442	0.00
<b><i>Related Services (Pull-Out)</i></b>					
Speech/Language specialist	31.24	0.97	4	457	a
Physical/Occupational therapist	11.52	1.49	4	628	1.30
Other	8.68	0.76	3	577	11.24
<b><i>Title I (Chapter 1) Program Staff</i></b>					
Resource teacher	1.02	2.77	8	726	0.00
Instructional aides	0.15	2.00	10	88	0.00
Additional resource teachers	0.05	1.25	4	657	0.00
Additional instructional aides	a	—	—	—	0.00
<b><i>ESL/Bilingual Resource Room</i></b>					
Resource teacher	1.97	9.18	9	1,812	0.00
Instructional aides	0.42	18.91	14	633	0.00

*continued . . .*

Table 2a. Services and Resources Received by Students with Disabilities Served in Nondepartmentalized Settings: School Year 1994–95 (continued)

Before- or After-school Services	Estimated Percent of Students Receiving Services	For Those Students Receiving Each Service			Percentage Paid by Non-School Agency
		Hours per Week of Service	Class or Group Size in Which Service Was Provided	Personnel Expenditures per Student	
<b>Extended Time, Care, or Service</b>					
Resource teacher/specialist	0.89%	4.08	1	\$7,672	16.78%
Specialist	1.32	2.76	2	2,356	100.00
Day care providers	1.38	18.68	20	411	99.46
<b>Weekly Services</b>					
<b>Personal/Medical Care for Disabled Child</b>					
Nurse/Health professional(s)	6.49	7.05	3	1,856	5.24
Nurses aide(s)	0.16	5.60	1	—	76.19
Personal instructional aide(s)	0.88	20.17	2	5,230	22.26
<b>Counseling and/or Family Services</b>					
Adjustment counselor(s)	15.05	1.46	3	1,256	23.19
Family counselor/Social services	4.80	0.92	2	905	71.85
Other	0.99	0.81	5	526	15.13
<b>Monthly Service<sup>1</sup></b>					
Monthly service	2.32	2.13	2	1,559	2.45
Additional monthly service	0.07	1.38	4	440	a
<i>continued . . .</i>					

**Table 2a. Services and Resources Received by Students with Disabilities Served in Nondepartmentalized Settings: School Year 1994–95 (continued)**

	Estimated Percent of Students Receiving Services	For Those Students Receiving Each Service			
		Hours per Week of Service	Class or Group Size in Which Service Was Provided	Personnel Expenditures per Student	Percentage Paid by Non-School Agency
<b>Transportation Services<sup>2</sup></b>					
<b>Transportation Services Provided by District</b>					
None	21.37%	—	—	—	—
Regular home-to-school	44.18	—	—	—	—
Special education home-to-school	26.03	—	—	—	—
Reimbursement to parent for transporting	0.42	—	—	—	—
Other	0.20	—	—	—	—
Unknown	7.76	—	—	—	—
<b>Specialized Transportation Services</b>					
Personal aide	0.39	—	—	—	—
Wheelchair lift	1.93	—	—	—	—
Other	3.90	—	—	—	—
Unknown	7.48	—	—	—	—
<b>Summer School</b>					
Summer school/Extended year	5.73	15.87	—	—	—
<p><i>How to interpret this table:</i> Based on the data presented above, 56.67 percent of special education students served in nondepartmentalized settings spend some time in regular classrooms with regular classroom teachers. For the special education students receiving these services, the average student spends 18.73 hours per week in the regular class with an average class size of 23 students. The average cost of these services is \$1,558 per student (for each of the 23 students). The total costs for a hypothetical student receiving multiple services would be determined by adding the personnel expenditures per student for each service received adjusted for actual versus average hours (reported in the table) of service.</p>					
<p><sup>1</sup> Monthly services were not pre-coded on the survey. Among the services listed on the survey were audiology, counseling, vision specialist, physical and occupation therapy, and speech therapy.</p>					
<p><sup>2</sup> No data were available that would permit a breakdown of transportation costs by type of transportation service.</p>					
<p>Note: “—” indicates no data collected for the particular item and ‘a’ indicates a value less than 0.00 percent.</p>					
<p>Source: CSEF <i>Information About a Special Education Student</i> survey.</p>					

## ■ Services Within Regular Classroom

### *Regular Education Services Received*

Table 2a shows that almost 57 percent of the special education students served in nondepartmentalized environments spend some portion of their time receiving services in regular self-contained classrooms. These students receive about 19 hours of service per week in a class of about 23 students, at a per student cost of \$1,558 per year. If the elementary school day averages about 6 hours, then 19 hours of service per week amounts to more than 60 percent of the average hours in school week.<sup>10</sup> More than 5 percent of special education students receive almost 12 hours per week of services in a class with a team teacher, at an added cost of \$938 per student. More than 60 percent of students are involved with the regular education students through instruction by subject matter specialists (e.g., through classes in physical education, art, or music), costing another \$308 per student. Of those students receiving such services, the average amount of class time is just over 4 hours per week.

### *Special Education Services Received*

More than 23 percent of special education students in nondepartmentalized environments receive services from a special education resource teacher or

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<sup>10</sup> According to data from the *Schools and Staffing Survey* administered by the National Center for Education Statistics, the average school day for elementary students in Massachusetts in 1993–94 was 5.9 hours (i.e., 29.5 hours per week). The national average was 6.09 hours per day.

specialist who comes into the regular classroom to provide almost 12 hours of service per week at a cost of almost \$1,300 per student. According to survey respondents, the average number of students sharing these services in regular classrooms is 19, which suggests that in many instances, these specialists are serving both special and regular education students in the classroom.

#### *Related Services Received*

Similarly, more than 18 percent of the special education students served in nondepartmentalized environments receive an average of about 1 hour of speech and language services provided within the regular class setting at a per student cost of about \$240 per year. Over 6 percent of the students in nondepartmentalized environments receive about 1.5 hours of physical and/or occupational therapy while in the regular classroom.

### ■ Services Outside Regular Classroom

#### *Special Classes*

More than 34 percent of special education students in nondepartmentalized environments are served for some part of the day in special classes, and about 70 percent ( $= 100 \times 24.28/34.52$ ) of these students are in classes with special education instructional aides. These students average more than 23.5 hours per week of service, and the average special classroom has access to an instructional aide for almost 21 hours per week. The average special class costs about \$4,500 per student per year, with aide time costing an additional \$1,414 per student per year. The

remainder of these students' time is spent in a combination of regular classrooms or in segregated settings receiving other special educational or related services.

#### *Special Education Resource Rooms*

Almost 39 percent of the students with disabilities in nondepartmentalized environments are served by a special education resource teacher in a resource room for an average of 12.5 hours per week, at a cost of \$2,384 per student. Only small percentages (about 0.5 percent) of students receive special education services in more than one resource room. It is assumed that the remainder of these students' time is spent in the regular classroom.

#### *Related Services*

More than 31 percent of the students with disabilities in nondepartmentalized environments receive speech and language services outside the regular classroom for about 1 hour per week, and more than 11 percent are pulled out of the regular classroom to receive physical/occupational therapy, averaging about 1.5 hours per week. Based on these figures, more students receive related services outside rather than inside the regular class setting (i.e., 31 percent versus 18 percent).

#### *Other Services*

Relatively small percentages (i.e., 1 to 2 percent) of students with disabilities in nondepartmentalized settings also receive services outside the regular classroom from Title I or ESL or bilingual program staff.

### ■ Before- or After-school and Other Weekly or Monthly Services

Relatively few (i.e., less than 1.5 percent) students with disabilities receive any extended time or care services in nondepartmentalized environments. About 6.5 percent of students with disabilities receive about 7 hours per week of services from nurses or other health professionals. About 1 percent receive an average of almost 21 hours per week of services from an instructional aide who provides personal or medical care during the course of the school day, and more than 15 percent receive some direct services from adjustment counselors.

### ■ Transportation Services

More than 25 percent of the nondepartmentalized special education students receive transportation services specifically designed for special education students. However, only 0.39 percent (i.e., 1 in every 250) require a personal aide during transportation, and just less than 2 percent require a wheelchair lift.

Almost 6 percent of the nondepartmentalized special education students attend summer school or extended year programs designed for students with disabilities. These students average just less than 16 hours per week in these programs.

### ■ Services Paid for by Non-school Agencies

In some instances, other social service agencies rather than schools pay for certain special education services. For example, for almost 38 percent of the students who receive other related services within the regular classroom (see Table 2a), non-

school agencies pay for the services.<sup>11</sup> For almost all of those special education students who receive services from specialists or day care providers after the school day is completed, non-school agencies pay for virtually all of the services. For those students receiving the services of nurses aides or other family counseling or social services, non-school agencies pay for these services in three out of four cases. Non-school agencies pay for the counseling and/or family services received by students in more than 70 percent of the cases.

## Departmentalized Environments

Services in a departmentalized environment presented in Table 2b include nine categories of courses, classes, or services:

- regular education courses without a laboratory or shop component
- regular education courses with a laboratory or shop component
- remedial courses
- special education courses without a laboratory or shop component
- special education courses with a laboratory or shop component

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<sup>11</sup> No data were collected on which non-school agencies provided these services.

- other special education services received on a weekly basis
- other special education services received on a monthly basis
- transportation services
- summer school

Within each of these categories, specific classes or courses are listed by subject area and by other types of instructional or related services provided to students with disabilities. Delineation of services in this fashion allows one to see the patterns of course-taking among students with disabilities at the secondary grade levels.

#### ■ Services in Regular Education Classes

Table 2b shows that substantial percentages of students with disabilities in departmentalized environments (predominantly middle and high school students) are enrolled in the standard curriculum for regular education. Almost 37 percent of the students with disabilities are enrolled in regular English; more than 40 percent are taking regular social science, math, and science; almost 60 percent are enrolled in regular physical education.<sup>12</sup> More than 24 percent are taking vocational courses with no laboratory or shop component, while more than 13 percent are taking vocational course work with a shop component. About 3 percent of these students

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<sup>12</sup> Note that a student is counted once for each class or course. Since students generally enroll in multiple programs, these percentages will not add to 100 percent.

are enrolled in various remedial courses including computers, language arts and reading, music, or art.

The average special education student enrolled in these regular departmentalized courses attends 2 to 4 hours per week, and courses have enrollments ranging from 18 to 26 students per class (with the exception of work study, which involves a special caseload). In addition, the total cost of these courses includes both the cost of the regular teacher and the cost of special education teachers and/or aides who provide additional resources in a regular class to serve the needs of the students with disabilities.

#### ■ **Services in Special Education Classes**

In addition to their enrollment in regular courses, students with disabilities served in departmentalized settings are enrolled in courses that are specifically designed for special education. For example, more than 50 percent of these students are enrolled in special education math, about 31 percent in special education English, nearly 37 percent in special education language arts and reading, almost 28 percent in special education social science, and about 23 percent in special education science. Over 17 percent of these students are enrolled in courses in life, work, and independent living skills for students with disabilities. Almost 13 percent of these students are enrolled in vocational education courses for special education. Just over 3 percent are enrolled in a general resource room program for which no subject was indicated.

Among the related services, speech therapy enrolls almost 12 percent of the special education students served in departmentalized environments. Just over 4 percent receive some kind of physical or occupational therapy. Relatively small percentages (less than 2 percent in each category) receive services from nurses or health professionals, nurses aides, or other family counseling and social services. Just under 8 percent receive services from adjustment counselors.

Only about 12 percent of the students with disabilities served in departmentalized settings receive special education home-to-school transportation services, and between 6 and 7 percent attend summer school designed for special education students.

**Table 2b. Services Received by Special Education Students in Departmentalized Settings: School Year 1994-95**

Types of Classes, Courses, and Services	For Those Students Receiving Each Service:						Percentage Paid by Non-School Agency
	Percentage of Students Receiving Services	Hours per Week of Service	Class/Group Size in Which Service was Provided	Regular Education Personnel Expenditures per Student	Special Education Personnel Expenditures per Student	Total Personnel Expenditures per Student	
<b>Regular Education, No Laboratory</b>							
Computers	15.05%	3.01	26	\$187	\$2	\$189	—
English	36.80	4.02	22	333	85	418	—
English as a second language	0.26	4.43	19	315	129	444	—
Foreign language	7.90	3.91	24	283	0	283	—
Language arts and reading	16.38	4.42	22	365	158	522	—
Life/Work/Independent living skills	3.82	2.68	22	217	2	218	—
Math	40.11	3.93	21	322	121	443	—
Music, art	30.23	2.07	25	138	6	144	—
Other	24.28	2.42	22	178	53	231	—
Physical education	59.89	2.04	28	140	6	147	—
Extended/Child care services	0.58	2.70	18	66	326	392	—
Vocational resource program	0.06	3.75	10	608	0	608	—
Work study program	0.04	—	4	406	0	406	—
Science	40.08	4.12	24	293	68	361	—
Safety/Driver education	0.09	1.25	25	89	0	89	—
Social science	41.47	3.89	24	287	38	326	—
Vocational education	24.41	4.83	21	393	55	448	—
<i>continued . .</i>							

**Table 2b. Services Received by Special Education Students in Departmentalized Settings: School Year 1994-95 (continued)**

Types of Classes, Courses, and Services	For Those Students Receiving Each Service						Percentage Paid by Non-School Agency
	Percentage of Students Receiving Services	Hours per Week of Service	Class/Group Size in Which Service was Provided	Regular Education Personnel Expenditures per Student	Special Education Personnel Expenditures per Student	Total Personnel Expenditures per Student	
<b>Regular Education, Laboratory</b>							
Computers	2.12%	237	25	\$166	\$14	\$180	—
English	1.12	2.00	19	171	0	171	—
Foreign language	0.03	1.50	25	97	0	97	—
Language arts and reading	0.04	3.67	12	496	0	496	—
Life/Work/Independent living skills	0.66	2.31	18	220	0	220	—
Math	0.85	1.86	11	284	0	284	—
Music, art	1.11	2.75	21	167	460	627	—
Other	2.44	2.85	18	265	0	265	—
Physical education	1.33	2.18	26	152	0	152	—
Science	2.00	4.11	20	345	53	397	—
Vocational education	13.23	6.34	18	587	30	617	—
<b>Remedial Education, No Laboratory</b>							
Computers	2.95	1.00	5	324	88	413	—
English	0.65	4.05	19	271	133	404	—
Language arts and reading	3.28	2.56	13	271	104	376	—
Life/Work/Independent living skills	3.08	1.10	5	311	113	424	—
Math	2.28	2.63	14	161	181	341	—
Music, art	2.95	3.00	5	649	517	1,166	—
Other	1.53	1.83	9	160	260	421	—
Physical Education	3.03	1.03	6	320	86	406	—
Vocational resource program	0.15	3.50	5	227	0	227	—
Science	0.66	3.73	20	330	86	416	—
Social science	1.17	2.69	20	193	123	316	—
Vocational education	0.62	4.33	13	603	0	603	—

*continued . .*

**Table 2b. Services Received by Special Education Students in Departmentalized Settings: School Year 1994–95 (continued)**

Types of Classes, Courses, and Services	Percentage of Students Receiving Services	For Those Students Receiving Each Service					Percentage Paid by Non-School Agency
		Hours per Week of Service	Class/Group Size in Which Service was Provided	Regular Education Personnel Expenditures per Student	Special Education Personnel Expenditures per Student	Total Personnel Expenditures per Student	
<b>Special Education, No Laboratory</b>							
Computers	0.63%	1.34	17	\$0	\$156	\$156	—
English	30.54	3.85	11	0	779	779	—
English as a second language	0.69	2.63	11	0	213	213	—
Language arts and reading	36.76	4.26	10	0	933	933	—
Life/Work/Independent living skills	17.26	4.42	9	0	1,144	1,144	—
Math	53.80	3.79	10	0	799	799	—
Music, art	0.66	2.65	4	0	1,322	1,322	—
Other	20.31	3.18	10	0	883	883	—
Physical education	9.44	2.71	13	0	469	469	—
Audiology	0.15	1.50	1	0	2,555	2,555	—
Extended/Child care services	0.79	1.13	28	0	90	90	—
Social work services	0.47	2.97	5	0	1,293	1,293	—
Physical/Occupational therapy	4.22	0.96	1	0	1,827	1,827	—
Resource room	3.25	3.31	10	0	688	688	—
Speech	11.72	1.23	3	0	906	906	—
Other therapy services	1.56	2.93	5	0	1,584	1,584	—
Vocational resource program	0.95	6.95	17	0	1,439	1,439	—
Work study program	3.28	13.65	6	0	5,161	5,161	—
Science	22.69	3.80	11	0	750	750	—
Social science	27.79	3.70	11	0	788	788	—
Vocational education	12.83	4.42	9	0	1,196	1,196	—
<b>Special Education, Laboratory</b>							
Other	0.29%	2.63	8	\$0	\$1,237	\$1,237	—
Vocational resource program	0.65	11.16	11	0	2,324	2,324	—

**Table 2b. Services Received by Special Education Students in Departmentalized Settings: School Year 1994-95 (continued)**

Types of Classes, Courses, and Services	For Those Students Receiving Each Service:						
	Percentage of Students Receiving Services	Hours per Week of Service	Class/Group Size in Which Service was Provided	Regular Education Personnel Expenditures per Student	Special Education Personnel Expenditures per Student	Total Personnel Expenditures per Student	Percentage Paid by Non-School Agency
<b>Weekly Services</b>							
Nurse/Health professional(s)	0.50	6.95	2	—	—	12,892	23.61
Nurses aide(s)	0.06	20.00	7	—	—	1,408	0
Personal instructional aide(s)	0.47	2.64	2	—	—	1,005	23.98
Adjustment counselor(s)	7.54	0.97	3	—	—	859	31.59
Family counselor/Social services	1.55	1.36	1	—	—	1,605	50.29
Other	1.22	0.99	2	—	—	1,078	0
<b>Monthly Services</b>							
Monthly service	1.32	1.08	3	—	—	750	8.55
Additional monthly service	0.09	0.69	1	—	—	748	33.33
<b>Transportation Services</b>							
None	35.16	—	—	—	—	—	—
Regular home-to-school	46.42	—	—	—	—	—	—
Special education home-to-school	12.08	—	—	—	—	—	—
Other	3.03	—	—	—	—	—	—
Unknown transportation	5.03	—	—	—	—	—	—
Personal aide	0.06	—	—	—	—	—	—
Wheelchair lift	0.39	—	—	—	—	—	—
Unknown special transportation service	7.39	—	—	—	—	—	—
<b>Summer School</b>							
Summer school/extended day	6.55	14.30	—	—	—	—	—

### Table Notes

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<sup>1</sup>Unknown indicates a *don't know* response to the survey item.

Note: “—” indicates no data collected for the particular item.

*How to interpret this table:* Based on the data presented above, 36.80 percent of special education students served in departmentalized settings are enrolled in regular English classes. The average class meets for about 4.02 hours per week and has a class size of 22 students. The per student cost of the regular classroom teacher (and aide, if any) is \$333. The average cost per student of additional special education personnel amounts to \$85. If these special education personnel provide services to other nonspecial education students in the class (as reported on the surveys), then the per student costs include all students. If they provide support only to the special education students, then the per student costs reflect only the services to special education students.

Note: “—” indicates no data collected for the particular item.

Source: CSEF *Information About a Special Education Student* survey.

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## Implications of Service Configurations

The data presented in this section suggest that while students with disabilities spend a substantial amount of time in regular education programs, a significant portion of special education services is still provided to students in segregated settings. The proportion of special education services provided within general education settings, however, has been increasing in recent years. Between October 1990 and October 1994, the percentage of special education students served solely outside of the regular classroom declined from 23.1 percent to 20.5 percent, while the percentage of special education students served solely in the regular classroom increased from 10.2 percent to 12.5 percent.<sup>13</sup>

The CSEF data suggest that more than 70 percent of special education students in nondepartmentalized settings receive services outside of the regular classroom for a

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<sup>13</sup> These figures are based on the *School System Summary Reports and Individual School Reports*, 1990 and 1994, from the Massachusetts Department of Education.

substantial portion of the school week.<sup>14</sup> These students spend from about 12.5 to 24 hours per week outside regular classrooms. While 23 percent of these students receive resource services within the regular classroom, these resource services tend to be shared with their non-special education classmates. In contrast, those students receiving services outside the regular classroom appear to receive a more concentrated dose of services, since they are served in smaller classes or groups. The average hours per week of service for both groups are about equal (i.e., 11.88 versus 12.50). However, the average class size for those students served by the resource teacher in the regular class is 19, compared to an average class size of 10 for students served in the resource room. This regular class size of 19 students far exceeds the average number of students with disabilities in a regular classroom.<sup>15</sup> In contrast, all 10 students in the resource room are special education students.

The patterns of services provided to special education students in departmentalized settings (predominantly middle and high school) are similar. Although substantial percentages of these students are enrolled in various regular education courses, a significant proportion are enrolled in separate special education courses — particularly in basic math, English, and language arts and reading courses. Services

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<sup>14</sup> The 70 percent figure assumes that students with disabilities served in special classes are a different group of students than those students served in resource rooms (70 percent = 34.51 percent in special classes + 38.86 percent in resource rooms). Assuming that, CSEF data on nondepartmentalized special education students suggest that more than 70 percent of these students are served for a substantial portion of the school week outside of the regular classroom.

<sup>15</sup> The average number of students with disabilities in a regular self-contained classroom could range from about 2 to 4 students assuming identification rates between 10 and 15 percent and a class size of 25 students. Even if 20 percent of the students were identified for special education, the average regular self-contained class would have no more than 5 students with disabilities.

to these students tend to be more concentrated, since they are targeted exclusively to special education students in smaller classes than the regular education courses.

Related services or other specialized services, while costly to provide to any student, are received by a relatively small percentage of the students with disabilities at the secondary level. While a larger percentage of students with disabilities receive related services at the elementary level, the average hours of service per week represent only a small percentage of time during the school week.

The data also show that the average special education class or service is more costly than the average regular course, primarily because they require significantly smaller class sizes or caseloads. In some instances, the costs of instructional services even within regular environments may be relatively higher for students with disabilities compared to nondisabled students because of the greater use of instructional aides for students with disabilities.

It is also noteworthy that some small percentage (perhaps as high as 9 percent) of students with disabilities receive not only special and regular education services, but also specialized services for educationally disadvantaged or limited-English proficient students (i.e., through Title I programs or English as a Second Language/Bilingual programs, respectively).<sup>16</sup>

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<sup>16</sup> Assuming that the patterns of services are independent of one another, this 9 percent figure is derived by adding the percentage of students receiving Title I and ESL/Bilingual services from resource teachers both within and outside the regular education setting (i.e., 8.87 percent = 1.92 + 3.91 + 1.02 + .05 + 1.97). Although it is reasonable to assume that most services provided within versus outside the regular education setting are independent, there is likely to be some overlap of students receiving Title I and ESL services.

## IV. Sources of Instructional and Related Service Expenditures by Type of Student

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Table 3a presents data that break down the expenditures per student served in the nondepartmentalized environments according to the setting in which the expenditures are generated. Specifically, this table reports what portion of the total per student expenditure is generated by services provided within each of the following five settings:

- within the regular setting
- outside the regular setting
- before- or after-school extended care services
- other services provided on a weekly basis (e.g., personal or medical care and counseling and/or family services)
- other services provided on a monthly basis (e.g., psychological or other clinical or assessment services)

Table 3b reports similar information for special education students served in departmentalized environments. The list of settings is somewhat different:

- regular departmentalized classes or services
- special education departmentalized classes or services
- other services provided on a weekly basis (e.g., personal or medical care and counseling and/or family services)
- other services provided on a monthly basis (e.g., psychological or other clinical or assessment services)

Because of the way the data for students served in departmentalized environments are recorded in this study, before- and after-school extended care services are included with special education departmentalized classes or services.

In both Tables 3a and 3b, the data are broken down according to alternative student placements and student characteristics as reflected in grade level, primary disability, and aggregated level of adaptations or need.<sup>17</sup> The expenditure data include all services received by special education students from all programs, including regular education, special education, and other special need programs such as Title I and limited-English proficient.

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<sup>17</sup> The aggregated level of adaptation or need is based on a combined index of curricular, behavioral, and physical adaptations.

For the majority of students served in nondepartmentalized settings (those in grades 1–3 and 4–8), approximately one-third of the per pupil costs of serving students with disabilities are generated within the regular classroom setting (\$2,079/\$5,477 and \$1,520/\$5,108, respectively). For ungraded students, the percentage of expenditure accounted for in the regular setting falls to around 7 percent (\$563/\$8,012).

Similarly, for the majority of students served in departmentalized settings (those in grades 4–12), approximately one-third of the per student expenditures for serving special education students is generated within the regular education classes. Grades 4–8 are at 32 percent (\$1,197/\$3,748) and grades 9–12 are at about 37 percent (\$1,312/\$3,528). Once again, for ungraded students, the percentage of expenditure accounted for in the regular setting falls significantly to around 7 percent (\$638/\$9651).

Other specialized services provided on a weekly or monthly basis are higher for students in nondepartmentalized settings than for those in departmentalized settings. As Table 3a suggests, students with more severe disabilities generate the need for greater levels of specialized services (i.e., those provided on a weekly or monthly basis) and also generate higher costs of basic instructional and related services. Nondepartmentalized students requiring major adaptations of the learning environment generate an average of \$1,786 per student in weekly services above and beyond those generated both within and outside the regular school setting. Differences in extended care services, however, seem to be more idiosyncratic than systematically related to needs.

**Table 3a. Instructional and Related Service Personnel Expenditures per Student by Service Delivery Across Grade Levels, Disabilities, Placements, and Levels of Adaptations for Special Education Students in Nondepartmentalized Settings: School Year 1994–95**

Placement	Number of Students Included in the Sample	Estimated Percent of Actual Population of Students with Disabilities	Total Instructional Expenditures per Student: All Services	Instructional and Related Service Expenditures per Student by Type of Service Delivery			
				Outside Regular Classroom	Extended School	Weekly Services <sup>1</sup>	Monthly Services <sup>2</sup>
Regular classroom	111	16.82%	\$3,920	\$236	\$21	\$113	\$1
Up to 25% outside regular class	174	19.11	3,907	1,210	14	133	8
25%–60% outside regular class	131	20.06	5,122	2,420	338	474	24
Solely outside regular class, in regular school building	184	34.92	7,170	5,739	100	757	83
Separate public facility	17	7.93	6,399	6,191	0	171	24
Home/hospital program	1	0.10	13,048	12,235	0	812	0
Unknown	4	1.06	4,498	2,417	0	0	0
<b>Student Characteristics</b>							
<b>Grade Level</b>							
Pre-kindergarten	24	1.01%	\$5,370	\$3,389	\$49	\$218	\$0
Kindergarten	28	2.78	3,950	2,472	7	0	11
Grade 1–3	239	35.14	5,477	2,758	30	594	16
Grade 4–8	298	50.94	5,108	3,098	177	253	60
Grade 9–12	38	2.01	4,991	2,689	45	618	0
Ungraded	35	6.39	8,012	6,617	12	820	1
Missing	12	1.73	9174	8181	137	2	0

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**Table 3a. Instructional and Related Service Personnel Expenditures per Student by Service Delivery Across Grade Levels, Disabilities, Placements, and Levels of Adaptations for Special Education Students in Nondepartmentalized Settings: School Year 1994–95 (continued)**

Placement	Number of Students Included in the Sample	Estimated Percent of Actual Population of Students with Disabilities	Total Instructional Expenditures per Student: All Services	Instructional and Related Service Expenditures per Student by Type of Service Delivery			
				Outside Regular Classroom	Extended School	Weekly Services <sup>1</sup>	Monthly Services <sup>2</sup>
<b>Primary Disability</b>							
Learning disability	352	48.94%	\$4,499	\$2,161	\$64	\$279	\$9
Speech impairment	42	4.03	4,019	1,263	0	351	57
Mild mental retardation	43	10.36	6,531	3,884	254	750	0
Profound mental retardation	10	1.09	13,282	11,542	0	1,565	0
Emotional disturbance	50	10.11	6,299	5,205	27	347	282
Orthopedic impairment	3	1.46	18,965	10,150	566	4,375	0
Visual impairment/blindness	5	0.90	6,136	4,556	0	614	0
Hearing impairment	5	0.44	10,237	9,104	0	0	0
Multiple disorders	22	3.46	7,905	4,053	1,135	929	3
Other health impairment	3	0.20	10,375	9,530	0	420	0
Autism	2	0.15	12,142	2,029	0	469	0
Traumatic brain injury	3	0.49	8,377	7,540	0	0	0
Developmentally delayed	64	15.46	5,196	3,914	6	179	2
Unknown	18	2.89	5,126	3,184	1	242	68
<b>Level of Adaptations<sup>3</sup></b>							
No significant adaptations	118	14.26%	\$3,378	\$868	\$104	\$22	\$2
Minor	337	55.70	4,810	2,799	113	209	12
Moderate	127	23.54	7,097	4,849	107	847	129
Major	30	5.54	10,710	7,132	87	1,786	2
Unknown	10	0.96	8,455	7,322	82	64	31

How to interpret this table — an example: For special education students served in a regular classroom placement in nondepartmentalized settings, the mean per student expenditure for total instructional and related service personnel is \$3,920. Broken into its component parts, \$3,549 is expended within the regular classroom setting, \$236 is expended outside the regular classroom setting, \$21 is expended on before- and after-school extended care services, \$113 on weekly services, and \$1 on monthly services. Based on the weighting scheme, it is estimated that 16.82 percent of the total population of students with disabilities within Massachusetts are served in almost entirely within the regular classroom (i.e., within-district, nondepartmentalized, regular classroom). These estimated statistics are based on an actual sample size of 111 students.

<sup>1</sup>Weekly services include personal/medical professionals and aides; school, family, and social service counseling; and speech, physical, occupational, and vision therapy provided on a weekly basis.

<sup>2</sup>Monthly services include speech, physical, occupational, and vision therapy, and counseling provided on a monthly basis.

<sup>3</sup>Based on a combined index of curricular, behavioral, and physical adaptations required to served the needs of special education students.

Note: Missing indicates no response to the survey item. Unknown indicates a *don't know* response to the survey item.

Source: CSEF *Information About a Special Education Student* survey.

**Table 3b. Instructional and Related Service Personnel Expenditures per Student by Service Delivery Across Grade Levels, Disabilities, Placements, and Levels of Adaptations for Special Education Students in Departmentalized Settings: School Year 1994–95**

Placement	Number of Students Included in the Sample	Estimated Percent of Actual Population of Students with Disabilities	Total Instructional Expenditures per Student: All Services	Instructional and Related Service Expenditures per Student by Type of Service Delivery			
				Regular Education Classes	Special Education Classes	Weekly Services <sup>1</sup>	Monthly Services <sup>2</sup>
Regular classroom	91	13.36%	\$3,044	\$2,182	\$755	\$106	\$0
Up to 25% outside regular class	191	32.05	2,833	1,697	1,038	77	21
25%–60% outside regular class	147	28.77	3,795	875	2,807	111	1
Solely outside regular class, in regular school building	120	22.14	7,151	470	6,485	189	7
Separate public facility	5	3.12	3,222	424	2,798	0	0
Unknown	6	0.56	4,371	1,558	2,787	26	0
<b>Student Characteristics</b>							
<b>Grade Level</b>							
Grade 4–8	218	37.28	3,748	1,197	2,482	62	7
Grade 9–12	314	54.23	3,528	1,312	2,095	113	9
Ungraded	24	8.03	9,651	638	8,701	298	14
Missing	4	0.46	6,387	915	4,413	1,059	0
<b>Primary Disability</b>							
Learning disability	343	57.38%	\$3,328	\$1,276	\$1,974	\$71	\$8
Speech impairment	3	0.08	2,498	1,550	949	0	0
Mild mental retardation	47	10.13	5,199	1,234	3,705	259	0
Profound mental retardation	4	2.85	7,889	0	7,889	0	0
Emotional disturbance	35	4.29	5,396	1,139	3,688	564	6
Orthopedic impairment	1	0.16	9,954	9,869	85	0	0
Visual impairment/blindness	4	0.42	6,590	1,720	3,586	1,246	38
Hearing impairment	7	0.61	3,788	2,146	1,222	0	419
Multiple disorders	9	3.23	13,458	1,543	11,779	102	35
Other health impairment	6	0.81	4,067	2,162	1,717	187	0
Autism	2	0.18	21,019	1,217	19,802	0	0
Traumatic brain injury	5	0.45	5,283	1,361	3,921	0	0
Developmentally delayed	35	8.94	2,543	547	1,984	11	0
Unknown	59	10.46	3,785	1,383	2,299	103	0
<b>Level of Adaptations<sup>3</sup></b>							
No significant adaptations	109	17.86	2,995	1,586	1,375	35	0
Minor	354	65.95	3,869	1,163	2,557	137	11
Moderate	79	13.13	5,179	912	4,144	115	8
Major	13	2.74	12,100	1,339	10,729	26	6
Unknown	5	0.32	5,175	2,023	2,985	167	0

*continued . . .*

**Table Notes**

*How to interpret this table—an example.* For special education students in departmentalized settings served in a regular class placement, the mean per student expenditure for total instructional and related service personnel is \$3,044. Broken into its component parts, \$2,185 is expended within the regular classroom setting, \$755 is expended outside the regular classroom setting, \$106 is expended on weekly services, and nothing is spent on monthly services. Based on the weighting scheme, it is estimated that 13.36 percent of the total population of students with disabilities within Massachusetts are served in almost entirely within regular classes. These estimated statistics are based on an actual sample size of 91 students.

<sup>1</sup> Other weekly services include personal/medical professionals and aides; school, family, and social service counseling; and speech, physical, occupational, and vision therapy provided on a weekly basis.

<sup>2</sup> Other monthly services include speech, physical, occupational, and vision therapy, and counseling.

<sup>3</sup> Based on a combined index of curricular, behavioral, and physical adaptations required to served the needs of special education students.

Note: Missing indicates no response to the survey item. Unknown indicates a *don't know* response to the survey item.

Source: CSEF *Information About a Special Education Student* survey.

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## V. Conclusion

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This paper examines the patterns of instructional and related services and the patterns of expenditures for students with disabilities in Massachusetts. All data are derived from responses of special education service providers who were asked to provide information about a sample of three students randomly selected from their caseloads or classes.

To explore these service configurations, special education students are divided into two groups: those who are served in departmentalized environments and those served in nondepartmentalized environments, since the basic organization of service delivery in these two environments is quite different.

The majority of students with disabilities spend some portion of their time in regular classrooms. For example, almost 57 percent of students with disabilities served in nondepartmentalized environments spend some portion of their week receiving services from regular self-contained classroom teachers.

Many students with disabilities receive special education services while in the regular classroom (i.e., without being pulled out). Approximately one in four of these students in nondepartmentalized environments receives resource teacher services in the regular classroom, while one in five receives speech and language services in the regular classroom. In many cases, the data suggest that these special education

teachers serve both special and regular education students while in these classrooms. In some cases, physical and occupational therapy is also provided in the regular classroom.

Nevertheless, the Commonwealth of Massachusetts in 1994–95 served large percentages of students with disabilities in either separate or pull-out environments outside of the regular classroom setting. More than 34 percent of students with disabilities in nondepartmentalized environments are served in special classes, and almost 39 percent are served by a special education resource teacher in a resource room (i.e., a pull-out program). Almost one in three nondepartmentalized students with disabilities receives speech and language services outside the regular classroom for about 1 hour per week.

Many students with disabilities served in departmentalized environments in secondary schools take courses specifically designed for special education students. For example, more than 50 percent are enrolled in math, about 31 percent in English, nearly 37 percent in language arts and reading, almost 28 percent in social science, and about 23 percent in science classes all designed specifically for students with disabilities. Courses in life, work, and independent living skills for special education students enroll over 17 percent of these students. Almost 13 percent of these students are enrolled in vocational education courses for special education students.

Although only small percentages of students are involved, it appears that often students with more severe disabilities receive other specialized or extended care services from nurses, health professionals, personal nurses, aides, or other family

counseling and social services. In many instances, at least some of the costs of these specialized and other related services are paid by non-school agencies.

These data provide a unique picture of the composition of services and expenditures associated with a random sample of individual students with disabilities. These kinds of data can permit a more detailed analysis of the factors underlying variations in costs because the data combine information on individual student needs and disabilities with placement information. More importantly, the data provide information on the number of hours and intensity of services as measured by class or group sizes. Larger, multi-state samples extending beyond Massachusetts would be valuable in understanding the impact of state and district policies, wealth, and other demographic characteristics on the patterns of placement and costs of serving students with disabilities.

## References

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- Chambers, J., Parrish, T., Hikido, C., and Dueñas, I. (1995). *Comprehensive Study of Special Education for the Commonwealth of Massachusetts — Final Report*. Palo Alto, CA: American Institutes for Research, Center for Special Education Finance.
- Chambers, J., and Parrish, T. (1984). *The Development of a Program Cost Model and a Cost-of-Education Index for the State of Alaska — Final Report, Volumes I – IV*. Stanford, CA: Associates for Education Finance and Planning, Inc.
- Chambers, J., and Parrish, T. (1982). *The Development of a Resource Cost Model Funding Base for Education Finance in Illinois, Volume I — Executive Summary and Volume II — Technical Report*. Stanford, CA: Associates for Education Finance and Planning, Inc.
- Florida Department of Education (1996). *Proposed Funding Model — Final Report, 1994–95*. Tallahassee, FL: Author.
- Levin, H. M. (1983). *Cost-Effectiveness: A Primer*. Beverly Hills, CA: Sage Publications.
- Massachusetts Department of Education (1994). *Individual School Reports*. Boston, MA: Author.

Massachusetts Department of Education (1990). *School System Summary Reports*.  
Boston, MA: Author.

U.S. Department of Education, National Center for Education Statistics (1996).  
*Schools and Staffing in the United States: A Statistical Profile, 1993–1994*.  
Washington, D.C.: Author.



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