

Education System

Development of the education system is reflected in enrollment and school size. The first part of this section presents the main characteristics of enrollment and calls attention to major processes and trends. Afterwards, the discussion focuses on the system's two main organizational settings: the class and the school.

The growth and development of these two settings have important budgetary implications. The class is the decisive unit in budgeting of the education system; the number of classes is the factor that determines the cost of the system.

The second part of this section discusses class size in its educational, organizational, and economic aspects. This part presents the distribution of classes by size and various characteristics of the population and uses this context to focus on the implications of reducing class size.

The third part of the section discusses school size in several respects. Various factors affect the size of schools and they rarely lend themselves to rapid change. The figures and discussions presented below shed light on various aspects of the issue.

1. Enrollment in the Education System

The education system consists of various levels in which pupils are enrolled on the basis of their age; it is composed of subsystems and sectors that benefit from various degrees of special treatment or even autonomy. Under these circumstances, developments in many social processes – alongside

demographic trends and rising enrollment rates – affect the growth, segmentation, and structure of the education system. The survey below explores this issue by examining it at each level of education.

a. Preschools

Israel is one of the world's most advanced countries in terms of preschool enrollment. In 1999, some 311,000 Jewish youngsters and 30,000 Arab children aged 2-5 attended preschools. In the Jewish sector, this enrollment figure pertains to all urban preschools (including day-care centers), public and private, including kindergartens (for age 5) and prekindergartens (ages 2-4). The figure for enrollment in the Arab sector pertains to kindergarten only. Kindergarten enrollment is nearly total in the Jewish sector; by the 1993/94 school year, the participation rate came to more than 95 percent in the 3-5 age cohort and 69 percent in the age 2 group.¹

Table 1. Preschool Enrollment Rates, 3–5 Age Cohort

	Jews			Arabs		
	1983	1989	1993	1983	1989	1993
Age 3	94	96	95	15	25	44
Age 4	99	99	99	25	53	71
Age 5	100	100	100	95	95	90

The low participation rates in Arab-sector preschools reflect, *inter alia*, the paucity of job opportunities for women and, evidently, less availability of suitable preschools. The changes that have been sweeping the Arab sector at large and, in particular, changes in the percent of women who accept work outside the home may have boosted both the numbers of

¹ Based on official reports from the Central Bureau of Statistics on preschool enrollment. These publications do not allow us to itemize preschool enrollment rates by age after 1994.

children who attend preschools and the enrollment rates in recent years. In any case, the data for the 5-4 age group point to an uptrend in the Arab sector that has lifted enrollment in this sector to nearly 100 percent, as in the Jewish sector.

Until recently – before the Knesset extended the incidence of the Compulsory Education Law to the 3-4 age group – some citizens (residents of “Class A” National Priority Areas) were totally exempt from tuition payments for these age groups and others (participants in Project Renewal) received a 90 percent exemption. All other parents were liable to standard tuition for their children’s prekindergartens. The tuition fee was staggered on the basis of income; low – and middle-low- income households received discounts of up to 90 percent. The share of fully exempt households has climbed steeply in the past three years, for reasons including the inclusion of localities over the Green Line in “Class A” National Priority Areas. Concurrently, the number of children who received a maximum exemption in Project Renewal localities and neighborhoods has declined.

Table 2. Children Exempt from Prekindergarten Tuition Fees, by Types, 1992-1998

	Children in localities in which staggered tuition applied	Full exemption: new and Class A National Priority localities*	90 percent exemption in Project Renewal localities	Average rate of parent payment
1992	86,467	26,259	7,107	68
1993	91,007	27,866	8,250	66
1994	100,784	32,318	9,582	66
1995	98,427	27,843	8,511	70
1996	92,530	30,043	9,311	66
1997	98,495	41,729	8,831	67
1998	99,537	36,846	7,434	60

* Until 1995 – new localities; since 1995 – Class A National Priority Areas.

Implications of Expanding Compulsory Education to Ages 3-4

In 1999, the Knesset expanded the incidence of the Compulsory Education Law to the 3-4 age cohort. This decision should be examined in the overall context of its effect on the education system and on narrowing educational and social disparities, in view of the preschool enrollment figures in different sectors. The focal point of the Knesset's action was the wish to expand the state's commitment to compulsory free education to younger age groups, thus including a large population of children – Arab children in particular—who had not received systematic, state-supervised preschool education until this action was taken.

The expansion has two main implications: 1) absolving some parents of preschoolers from having to pay tuition; and 2) boosting enrollment rates of the 3-4 age group in the Arab sector. It also stands to reason that, in view of the expected effect of increased preschool enrollment rates in the Arab sector, the scholastic and educational gaps between the Arab and Jewish sectors will narrow. Finally—if the new legislation will prompt a transition from private to public preschools—the quality of pre-primary education may improve somewhat. This conjecture stems from the assumption that the public prefers preschools that are under public inspection because they offer superior and, in most cases, less expensive education. This effect is relevant mainly for the age 3 group, since the overwhelming majority of four-year-olds already attend public preschools.

Importantly, a large financial outlay will be needed to accommodate the relatively small increase in preschool enrollment as a result of the new law. In 1998, parents paid 60 percent of tuition cost. Since the government participated in tuition in the sum of NIS 390 million, parents paid NIS 585 million. This sum, therefore, represents the minimum direct cost of the law. Additionally, it will be necessary to build at least 1,000 preschool classrooms to receive the newly enrolled Arab children, as well as a sizable number of new preschools to

replace the private ones. Moreover, additional preschool teachers will have to be trained. Apart from this, since there is no reason to assume that the law will result in changes in educational praxis in preschools, the law will have a marginal educational effect on children in the Jewish sector.

b. Primary Education

Enrollment in the primary education system climbed from 612,000 in the beginning of the decade to 694,000 in 1999.² Although the primary education population increased by 15 percent, enrollment has been stable in the past three years, with virtual stagnation in the Jewish sector and an increase in the Arab sector. Since the primary enrollment rate has long been close to 100 percent in both sectors, both trends reflect demographic developments.

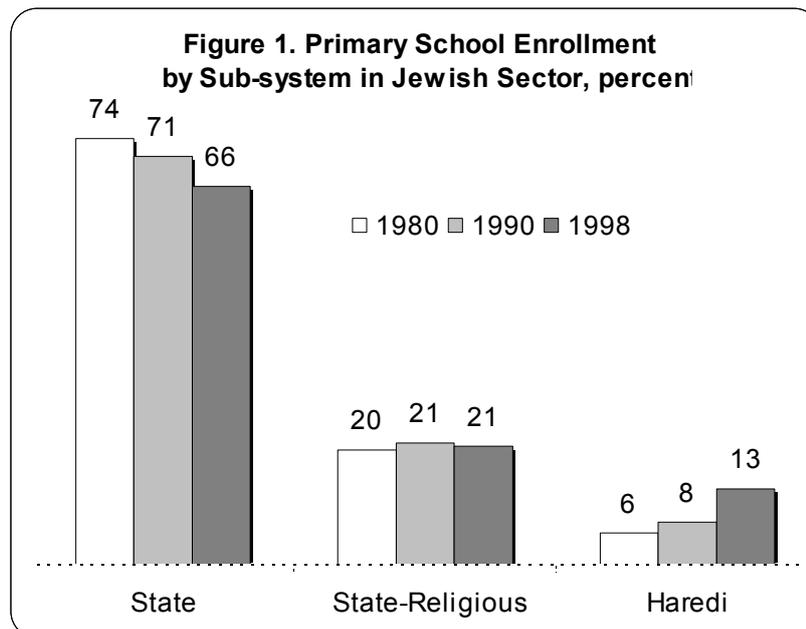
This is especially noticeable in respect to the number of pupils who attend educational and organizational settings defined as primary schools. Although most schools in this rubric offer grades 1-6, a diminishing number of schools run for eight years. In 1999, the proportion of seventh- and eighth – graders in primary schools did not exceed 20 percent of total enrollment in these grades. If we relate to all schools organizationally affiliated with the primary level in the Jewish sector, we see that the system is contracting due to demographic trends and an acceleration in the process of completing the education-system reform – the transfer of grades seven and eight from the primary to the junior-high level. This process stands in sharp contrast to the protracted growth trend in the Arab sector. Thus, despite mass immigration (mainly Jewish) from the former Soviet Union in the past decade, the proportion of the Arab system at the primary level climbed to 24 percent in 1998. This figure pertains to pupils in grades 1-6 only; we present these figures to

² As the administrative framework is defined, i.e., grades 1-6 or 1-8, depending on the type of school, and not in terms of pupils who attend grades 1-6 only.

“cleanse” the data of the effect of inter-sectorial differences that originate in different paces of changeover of grades 7-8 to junior-high (see below).

Table 3. Enrollment in Grades 1-6, by sector

	Total	Total	Thereof:	
	Thousands	Percent	Jews	Arabs
1990	531	100	77	23
1995	615	100	78	22
1998	640	100	76	24



Examination of the growth of primary schooling by its constituent subsystems illuminates further differences in Israel's demographic development. A salient finding is the set of changes that occurred in the share of religious education – especially, *haredi* (“ultra-Orthodox”) education – in the education system at large (see Figure 1). The share of the State-Religious system in primary education has remained more-or-less stable since 1980, but that of *haredi* education has more than doubled. Corresponding data on distribution of first graders by school systems points to similar trends.

c. Post-Primary Education

In 1999, some 535,000 pupils attended post-primary schools, including 238,000 in junior-high schools. After the pace of action to complete the school-system reform was hastened, the share of junior high in the post-primary system climbed steadily and comes today to 44.5 percent. Three factors affect post-primary enrollment: the demographic factor – growth of the relevant age group; the educational factor – rising post-primary enrollment rates; and the organizational-structural factor – e.g. the transfer of seventh- and eighth-graders from the primary to the junior-high level.

In the most recent half-decade (since 1995), the main increase at the post-primary level has been associated with the acceleration in completing the education-system reform and an increase in enrollment rates, whereas the contribution of demographic growth to the increase has been relatively small. In a lengthier retrospect embracing two decades, post-primary enrollment rates have risen significantly. The improvement during this period occurred at different rates in different levels of education and different sectors. In the past decade, junior-high enrollment and the proportion of seventh- and eighth-graders who attend these schools has been steadily increasing. The school-system reform is being carried out more quickly in the Arab sector than in the Jewish sector; the proportion of seventh- and eighth-graders in junior high in the

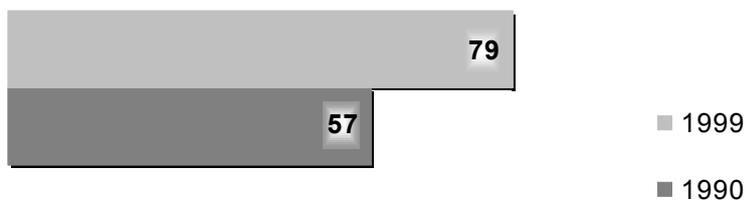
Table 4. Post-Primary Enrollment, by Sectors and Levels of Education, 1990-1999

	Enrollment (Thousands)			Avg. annual percent change	
	1990	1995	1999	1990-95	1995-99
Total	394	467	535	3.5	3.5
Junior high	149	182	238	4.0	6.9
Senior high	245	284	297	3.0	1.1
Jews	326	384	437	3.3	3.3
Junior high	205	242	252	3.4	1.0
Senior high	121	143	185	3.4	6.6
Arabs	69	82	98	3.5	4.5
Junior high	40	43	45	1.5	1.1
Senior high	29	40	53	6.6	7.3

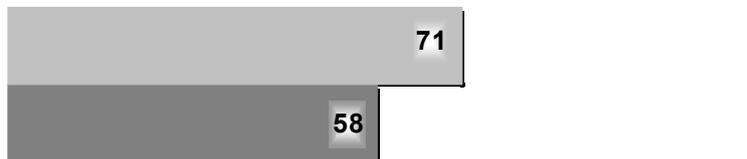
Figure 2. Seventh- and Eighth-Grade Enrollment in Junior High Schools

As percent of total 7th- and 8th-grade enrollment

Arab sector



Jewish sector



Jewish sector climbed from 58 percent in 1990 to 71 percent in 1999; corresponding figures for the Arab sector are 57 percent and 79 percent, respectively.

As for the distribution of post-primary pupils by subsystems, in senior high, the State-Religious system has contracted significantly and the share of the Independent (*haredi*) system has been growing at a rate similar to its expansion at the primary level. Evidently the change in the share of the religious sector is not fully manifested in the rate of increase at the junior-high level because of differences in carrying out the school-system reform, but it becomes visible at the senior-high level.

Table 5. Post-Primary Education, By Subsystems (Percent)

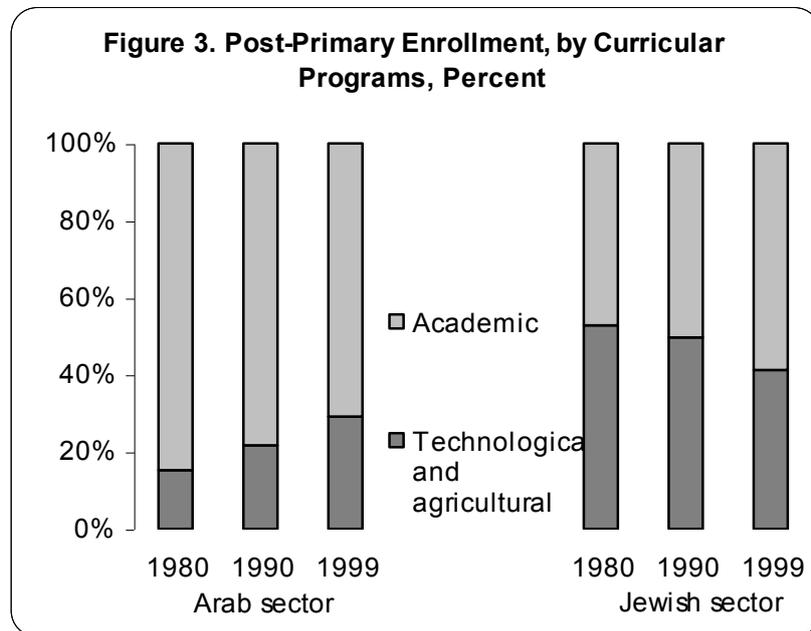
	Total	State	State-Religious	Haredi
Junior-high				
1980	100.0	75.6	23.1	1.4
1990	100.0	83.3	16.1	0.6
1998	100.0	82.7	17.0	0.3
Senior-high				
1980	100.0	73.8	22.2	4.0
1990	100.0	75.9	18.4	5.7
1998	100.0	72.1	18.1	9.8

Another interesting phenomenon in post-primary schooling is the proportional decline of technological education, coupled with a gentle but steady increase in technological curricular programs leading to matriculation. More than 60 percent of pupils in technological education participate in these programs. The proportional decline in technological education is evidently progressing in the Jewish sector only; in the Arab sector, the opposite trend is evident – a steady increase in the share of technological education in the post-primary system at large. In view of the Jewish sector's growing tendency to downscale technological studies, a question worth asking is whether the uptrend of technological schooling in the Arab sector is favorable. It is immensely important to assure that the

technological schooling offered by the system will enable pupils to obtain a matriculation certificate that will meet the admission requirements of higher-education institutions.

Table 6. Post-Primary Schooling, by Sectors (Percent)

	Jewish sector		Arab sector	
	Academic (incl. continuing classes)	Technological and agricultural	Academic (incl. continuing classes)	Technological and agricultural
1980	47.2	52.8	84.8	15.2
1990	50.3	49.7	78.6	21.7
1999	58.7	41.3	70.8	29.2



d. Higher Education

The higher-education system is comprised of post-secondary education institutions, colleges, and universities. Higher-education enrollment has been rising steadily and verged on 205,000 in 1999: 90,000 in colleges and various post-secondary institutions and 115,000 in universities³.

The rubric of *colleges and post-secondary education institutions* includes teachers' training colleges; institutions for technological sciences, practical engineering, training of technicians and the like, and paramedical occupations (including nursing), colleges of administration, economics, and law; and institutions for the arts, design, and architecture.

Enrollment in these institutions has burgeoned since 1990: from 30,000 to 90,000, i.e., 200 percent in nine years. This unprecedented growth included the establishment of new institutions and increases in enrollment in existing ones. Enrollment in accredited academic-degree-awarding institutions other than universities climbed from 8,286 in 1990 to 41,198 in 1998 and increased by 30 percent between 1997 and 1998 alone. The number of degrees awarded by these institutions increased by 20 percent during those years. These developments are dramatic by any measure.

The largest increases in non-university higher-education enrollment during this time occurred in practical engineering, clerical occupations and administration, and the arts – at 80 percent, 305 percent, and 333 percent, respectively. As for the increase in degree recipients, the largest contribution was made by teachers' colleges training which underwent rapid academization.

Enrollment in universities has also increased very rapidly in recent years (from 67,000 in 1990 to 115,000 in 1999). The change originates in the growth of the relevant age group among nonimmigrants and the rising propensity of this population

³ The university enrollment figure does not include the Open University of Israel, which more than 30,000 students attended in 1999.

group to apply for higher studies. A secondary contribution was made by immigration from the former Soviet Union over the past decade. The Arab sector has not been a main participant in the increase in university enrollment. In this sector, the share of the 20-29 age cohort that attended universities was lower in 1996 than in 1985, and the rate of increase between 1990 and 1996 was negligible relative to that of the other groups.

Table 7. University Enrollment Rates, 20-29 Age Cohort
(Percent)

	1975	1985	1990	1993	1996
Jews					
Men	7.2	7.6	8.0	8.9	9.8
Women	8.0	7.5	7.3	7.8	8.1
Israel-born, by origin	6.3	7.6	8.7	10.1	11.5
Israel	10.0	13.4	14.0	15.3	14.8
Asia-Africa	3.0	3.7	3.9	4.7	5.8
Europe-America	14.0	14.9	14.2	14.8	15.1
Arabs	..	2.1	1.7	1.6	2.0

2. The Class-Size Issue

a. Average Class Size

The previous section related to enrollment trends at various levels of education. However, since the most important unit in organizational, educational, and budgetary terms is, for the most part, not the individual pupil or student but the class, it is no less important to assess developments in the number of classes, average class size, and average tuition hours per class and per pupil. (The concept of "class" has two meanings. The more conventional meaning is the educational setting, usually in the sense of a homeroom class; the other meaning is the classroom, chiefly in its physical respect. This discussion refers mainly to the educational sense.) It is worth recalling that an increase in enrollment does not, in itself, make the education system more

expensive; it alone does not entail more teachers, rooms, and teaching hours. Only an increase in the number of classes, almost always accompanied by an increased allocation of teaching hours and, usually, by additional building, makes the education system more costly.

Between 1985 and 1999, the number of classes in the education system increased by 30 percent (from 34,506 to 44,800) and enrollment increased by 29 percent. This would indicate that the average class size did not change significantly during these fifteen years. However, this finding pertains to the system at large and does not distinguish among sectors and subsystems.

Table 8. Average Class Size, 1990 and 1997

	Total	Jewish sector				Arab sector
		Total	State	State-Religious	Independent	
Primary						
1990	26.9	26.1	27.2	24.4	22.7	30.1
1997	27.3	26.5	27.6	25.1	23.9	30.5
Junior-high						
1990	30.6	30.0	31.2	24.7	23.6	33.1
1997	30.4	30.3	31.5	25.7	26.2	33.9
Senior-high						
1990	28.7	28.1	29.3	24.1	24.6	32.4
1997	28.2	27.4	28.4	24.3	26.1	31.0

The data show that the average class size increased throughout the entire education system. The trend stands out more in the State-Religious and *haredi* (ultra-Orthodox) subsystems and evidently reflects the expansion of these two systems in enrollment as against the contraction of enrollment in the State (non-religious) subsystem. Generally speaking, the

addition of classes has followed the direction of demographic developments over the past decade.

b. Educational Aspects of the Issue

Inputs that one may use to discuss the issue of class size come from various sources. Most people involved directly in the educational process – principals, teachers, pupils, and parents – agree that smaller classes cannot but result in a large and significant improvement in education. This consensus is based on an accumulation of experience that points to the preferability of small classes over congested ones. According to this approach, small classes are better in terms of pupils' scholastic achievements, the educational and scholastic climate in class, and teachers' ability to pledge a maximum of effort to educational work instead of maintenance of discipline. Reducing class size facilitates teachers' work, diminishes their tendency to "burn out", helps create a more comfortable climate in class, reduces noise and violence, and, generally speaking, enhances the quality of the educational and scholastic environment for pupils and teachers alike. Recent research and empirical findings given this approach a certain amount of backing.

The tension between the reality of large, crowded classes, usually resulting from economic constraints and a shortage of professional manpower, and the educational approach has led to a large number of studies concerning the utility that might be gained by reducing class size. Some of the research was performed in evaluation studies that addressed themselves to controlled experiments in this field; another portion was done in conjunction with comprehensive and far-reaching actions to reduce class size. Two of the most salient attempts in this direction were a pilot project in Tennessee and, in its wake, a comprehensive effort to reduce class size in California. The Tennessee project was a large, controlled pilot venture, in which the number of pupils in classes in grades 1-3 was set at maximum of seventeen per pilot class and twenty-three per control class. Some of the classes had one teacher; others were

given a teaching aide as well. The California project was not an experiment but an overall policy meant to lower class size from kindergarten through third grade from twenty-nine on average to twenty at the most. The California project was accompanied with evaluation.

Most educational studies in this field share several salient conclusions:

1. Reducing class size is most effective in the early primary grades.
2. Reducing class size is especially effective in schools that serve “disadvantaged” pupils.
3. In cost-benefit terms, reducing class size is more effective in enhancing scholastic achievements than extending the school day but less effective than using tutors.
4. The effect of class size on scholastic achievements depends largely on other factors, such as teaching methods, curricula, and quality of the teaching staff.
5. Exogenous factors that affect the ability of the education system to work under conditions of congested classes (as has occurred successfully in Asian countries such as Japan and South Korea): the conventional educational and social tradition, prevailing values and patterns – mostly concerning relations between supervisors and subordinates and, in particular, between pupils and teachers – and the level of economic and educational development.
6. Most educational studies on the topic of class size were performed in countries where class size is much smaller than in Israel. The average in these countries, at the primary level, ranged from twenty-three to twenty-six, and the frequency of classes larger than thirty was extremely low. Therefore, the finding that only when the number of pupils in the downsized class is under twenty does the reduction affect education and pupils’ scholastic achievements should be treated with the utmost caution.

c. Distribution of Classes by Size

In 1999, Israel had 44,000 primary and post-primary classes, or about 50,000 if kindergarten classes are included. The average class size in 1998 was twenty-eight – twenty-seven in the Jewish sector and thirty-one in the Arab sector. In 1996, average class size was thirty in the State system and only twenty-six in the State-Religious system.

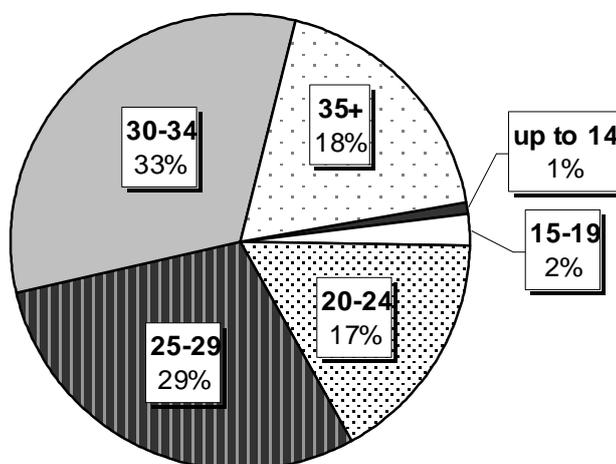
The table below shows the distribution of classes at the primary level by size.

Table 9. Primary Classes by Class Size and Grade, 1998

	Total	Class size					
		Up to 14	15-19	20-24	25-29	30-34	35+
Total	18,480	167	404	3,081	5,422	5,995	3,411
1 st grade	3,188	32	57	510	928	1,042	621
2 nd grade	3,073	25	76	555	901	945	571
3 rd grade	3,072	28	69	535	963	973	504
4 th grade	3,124	20	65	525	925	980	609
5 th grade	3,030	28	79	459	889	1,050	525
6 th grade	2,993	34	58	497	816	1,007	581

Figure 4. Primary School Classes by Size, 1998

Percent distribution



The distribution shown above illuminates the extent of the problem in Israel's primary-school system. The data on the distribution of classes by size indicate that more than 50 percent of classes have thirty pupils or more, 46 percent have 20-29, and the rest have fewer than 20 pupils on average. Action to reduce class size to a maximum of thirty-five would seem to be relevant for 3,411 classes in grades 1-6. Since most large schools have two or more classes per grade, they could reduce class size without having to increase the number of classes by the full extent that would be needed if every class that exceeded the maximum were split. In other words, the splitting would be distributed across the entire grade.

Another relevant inquiry in the matter of class size pertains to the distribution of pupils in the school by deciles on the index of level of disadvantage. It turns out that 22 percent of classes in the three least disadvantaged deciles have thirty-five pupils or more, as against 18 percent in the population at large. In contrast, in the three weakest deciles only 12 percent of classes have more than thirty-five pupils. Thus, much caution is needed in taking action to reduce class size, since a sweeping and indiscriminate policy in this matter would actually give schools with a less disadvantaged pupil population a significant advantage.

Table 10. Primary Classes by Class Size and Pupils' Social Characteristics, 1998 (Percent)

	Total	Class size					
		Up to 14	15-19	20-24	25-29	30-34	35+
Total population	100.0	0.9	2.2	16.7	29.3	32.4	18.5
Uppermost decile	100.0	0.5	1.3	13.1	27.7	35.7	21.7
3 highest deciles	100.0	0.6	1.4	8.6	27.8	39.9	21.7
3 lowest deciles	100.0	2.0	4.4	26.0	30.4	24.7	12.5
Lowest decile	100.0	1.9	5.8	29.1	30.0	23.1	10.2

To set a process of reducing class size in motion, attention must be paid to several additional basic indicators of the Israeli system that affect the organization of the system and the costs involved:

1. The average number of full-time teaching positions per class is 1.9 in the Jewish sector: 1.6 at the primary level and 2.4 at the post-primary level. In the Arab sector, the figures are 1.4 and 2.3, respectively.
2. The average annual cost of a teaching position is around NIS 100,000.
3. The extent of a teacher's position ranges, on average, from two-thirds to three-fourths of full-time.
4. A classroom costs NIS 500,000 to build (1998 prices).
 5. It costs about NIS 250,000 to train a student in a teachers' college (assuming that only half the students who complete the program go into teaching).

For the primary education system at large, we calculated the number of classes that would be needed under various alternatives of reduced maximum class size. The following table shows the number of additional classes that would be needed to reduce congestion by 1-5 pupils per class:

Table 11. Extra Classes Needed for Primary Education (Grades 1-6), under Various Assumptions of Maximum Class Size

	Maximum class size				
	39	38	37	36	35
Total	326	612	941	1,280	1,700
1 st grade	40	94	150	210	293
2 nd grade	54	110	164	221	293
3 rd grade	40	87	134	189	256
4 th grade	45	96	159	218	291
5 th grade	60	92	141	193	274
6 th grade	48	95	156	213	293

To reduce class size throughout the system to a maximum of thirty-five pupils per class in grades 1–6, over a period of, say, five years, 1,700 additional classes would be needed under the foregoing assumptions. This means 2,700 extra full-time teachers' positions, i.e., 4,100 teachers or 450 full-time positions per year.

Thus, the cost of the annual added increment in teachers' positions is NIS 45 million per year. Several other costs should be added to this figure: 10 percent for administration and inspection; additional expense for various auxiliary services; and the cost, nonrecurrent and spread over five years, of building the classrooms. In this case, the total annual cost would be NIS 220 million (NIS 50 million for extra teachers, inspection, and other services; and NIS 170 million for construction).

It is also possible, on the basis of the studies and pilot projects mentioned above, to begin reducing class size at the lower grades only (1-3, for instance) and to focus, among these classes, on schools in the three most disadvantaged deciles. In this case, no more than 179 additional classes would be needed, or 337 if the change is applied to all classes in grades 1-6. The resulting budget expenditure would decrease commensurably and would come to 10-20 percent of the figure cited above.

Table 12. Extra Classes Needed for Primary Education (Grades 1-6), Focusing on Disadvantaged Schools Only

	Maximum class size				
	39	38	37	36	35
Total	129	170	223	276	337
1 st grade	39	38	37	36	61
2 nd grade	12	23	33	46	62
3 rd grade	11	22	37	49	56
4 th grade	7	17	25	42	53
5 th grade	12	16	30	36	49
6 th grade	9	16	24	31	56

Two additional socio-educational issues are associated with the implementation of programs to reduce class size—a shortage of teachers and the expected effect of the change on educational disparities. A comprehensive reduction in class size, as stated, would eventually result in greater demand for teachers. Thus, the pace of training and recruiting new teachers would have to be adjusted to the pace of reducing class size. If these processes are not kept in alignment, the education system may be forced to compromise on the quality of the teachers that it hires. If the policy is applied only in schools that serve pupils from weak socioeconomic groups, fewer additional teachers will be needed and teachers will receive an incentive to work in these schools. Importantly, the schools at issue are not only in peripheral areas but also in disadvantaged neighborhoods in Israel's large and medium-sized cities.

Table 13 shows the distribution of classes by size and socioeconomic level.

- a. The proportion of classes with fourteen pupils or fewer is much higher in the State-Religious system than in the State and Arab systems.
- b. The proportion of classes with 15-19 pupils is higher in the State-Religious system than in the State and the Arab system in advantaged schools only.
- c. The proportion of classes with 20-24 pupils is substantially higher in the State-Religious system than in the State and Arab systems, in both advantaged and disadvantaged schools.
- d. The proportion of large and very large classes (more than thirty pupils) is similar in the State and Arab systems in advantaged schools but higher in disadvantaged Arab schools. The proportion of large and very large classes is much smaller in the religious sector than in the other two systems.

Table 13. Distribution of Classes by Size, Subsystem, and Disadvantage-Index Deciles (Percent)

Disadvantage index decile and school system	Class size						
	Total	Up to 14	15-19	20-24	25-29	30-34	35+
Deciles 8–10*							
State	100.0	0.2	0.8	9.0	30.6	37.7	21.7
State-Religious	100.0	5.7	7.3	20.0	28.1	26.3	12.5
Arab	100.0	0.1	0.3	7.4	26.2	41.8	24.1
Deciles 1-3*							
State	100.0	0.7	2.8	26.0	36.1	23.5	11.0
State-Religious	100.0	5.1	0.3	38.0	32.6	17.0	7.0
Arab	100.0	0.6	1.7	11.6	28.0	33.0	25.1

* Deciles 8-10 include advantaged schools; deciles 1-3 are comprised of those with socioeconomically weak student populations.

Summing up, any policy to reduce class size should be applied cautiously and incrementally. The CSPA education team made the same recommendation in its action plan for education. (See the second part of this book.) Two criteria of importance in choosing the order of the reduction of class size also deserve reemphasis: 1) **prioritizing the schools by their socioeconomic characteristics**, and 2) **giving the highest priority to the early grades.**

3. School Size

a. Educational and Organizational Implications

The question of school size is not only an economic and organizational issue but also, and primarily, an educational one. The issue of school size has remained on the educational agenda for decades and is associated with almost all of the most important issues in the education system. In the 1950s and 1960s, the leading trend of thought posited that a small school cannot meet basic educational needs. Today, many believe that small schools actually have advantages over large schools.

It is worth stating that educational research has not shown a causal relationship between school size and pupils' scholastic achievements at the primary level. Where such a relationship was found, it was usually affected by various socioeconomic variables. One of the main variables that illustrates the advantages of a small school is the social involvement of pupils, as reflected in their motivation to participate, and their actual participation, in various activities – even though the menu of activities may be larger and more diverse in large schools. The differences in favor of large schools stand out particularly in educational programs that are not directly related to studies, such as programs against substance abuse. Another important variable that corresponds to school size is the proportion of time that teachers devote to teaching (as against, say, administrative duties). It is found that teachers in small schools, where classes are also usually smaller, spend a larger proportion of their time teaching.

The issue also ties into one of the main processes in the history of education in Israel: the transition to junior-high schools, in which a majority of pupils in the relevant age groups are enrolled today. Furthermore, it corresponds to additional fields, such as the tendency to track pupils by levels in certain subjects within large schools, as against the need in small schools to cope in integrative ways with different problems and different levels of pupils.

The issue of school size is often intertwined with the additional issue, itself important, of very small schools and mini-schools, most of which are located in distant agricultural areas, or, alternatively, with the issue of the very large size of some high schools in major cities. Thus, the discussion of the size issue should address the full range of school sizes.

It is noteworthy that, notwithstanding the importance of the topic, very few studies dealing with Israel have been performed, and most of them concern themselves with post-primary education. To learn from the global educational discourse, one must be cautious in drawing policy conclusions because of the vast differences between the organization of Israel's school system and that in other countries.

It is conventional in Israel to have two or three classes per grade at the primary level and four to six in junior high. Relative to these accepted sizes, schools with one class or four classes in each primary grade, and three classes or seven to eight classes per grade in junior high, still belong to categories that are not extreme. (See Table 14.) Few schools deviate from these sizes; the norm is usually to merge very small schools with nearby schools or to split very large ones. In 1999, some 80 percent of primary schools and two-thirds of junior-high schools fell within the conventional size range.

Table 14. Schools, Categorized by Size, Pupil Population, and Number of Classes

Size category	Pupil population	Number of classes
Very small	0-99	Up to one class per grade, with classes that are "undersized" ⁴
Small	100-199	One full class in each grade
Medium	200-399	1-2 full classes in each grade
Large	400-699	2-3 full classes in each grade
Very large	+700	Three or more full classes in each grade

⁴ An "undersized" class is one with fewer than twenty pupils.

Several factors affect the size of schools. Some of them lend themselves to change in the immediate or medium range; others are unchangeable or changeable in the long term only. Some of them are educational; others are organizational, economic, and political; and still others are geographical and demographic. Several of the most important factors deserve attention:

1. The educational-organizational structure of the education system – horizontal distribution into a larger number of schools, based on classification by age, would reduce the average school size. This refers to a process of transition to separate structures for the early grades, for example, or to the changeover to junior-high.
2. The socio-cultural structure of the education system – allowing ideological and social population groups to establish separate school systems lowers the average school size. It is worth mentioning that, in Israel, the state recognizes the right of certain social, religious, and national sectors to maintain schools that educate in view of their values and traditions, even if this results in especially small schools.
3. Demographic and geographic structure – the higher the overall population density and the larger the proportion of school-age groups in the population at large, the larger the schools will be.
4. Transport infrastructure and accessibility of schools. In some situations, the cost of transport may exceed any economic saving that one may achieve by doing away with small schools and makes the educational advantages attributed to the large school too expensive. Each country has different educational and social standards concerning desired and permissible situations (under the law) in respect to the proximity of schools; these standards are sometimes based on tradition and arbitrary decisions.
5. As for population groups with special needs – those served by various kinds of special education – there are different approaches to the desired size of the setting, and decisions in this matter also affect school size. Here, too, small schools

and small classes in such schools have advantages, but large schools have an edge in their ability to provide educational counseling, psychologists, truant officers, etc., who may belong to the school faculty.

b. Trends in School Size⁵

The most conspicuous development in school size, at least since the 1960s, is a pair of parallel long-term trends: rising average pupil populations in each type of school, at all levels and in all sectors, on the one hand, and a declining proportion of very small and very large schools, on the other hand.

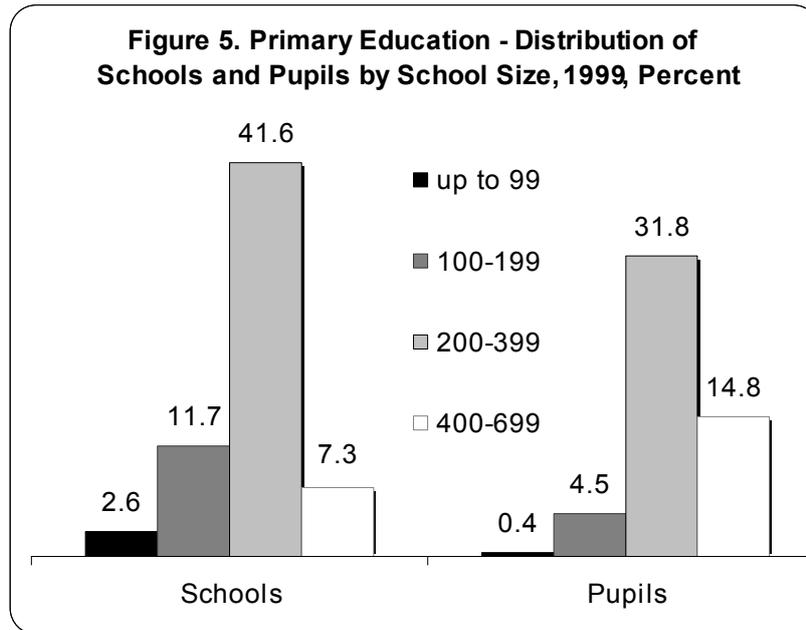
Table 15. Average School Size, by Enrollment and Sectors

	Jewish sector			Arab sector		
	Primary	Junior-high	Senior-high	Primary	Junior-high	Senior-high
1980	327	293	301	421	344	289
1985	362	376	342	423	390	438
1990	384	397	381	447	419	
1994	405	412	405	449	415	437

The foregoing table on average school size since 1980 contains several conspicuous findings. First, the average size of schools at all levels of education, in both sectors, has been rising over the years. Second, the average school size is rising more quickly in the Jewish sector than in the Arab sector. Third, the average size of junior-high and senior-high schools closely approximates the average size of primary schools. The last-mentioned finding is startling, of course, since junior – and

⁵ The data used in the discussion of the school-size issue, especially in sections b, c, and d, are based on several surveys of education and welfare services by the Central Bureau of Statistics. (See bibliography.)

senior-high schools are three-year institutions and primary schools offer six grades.



The data on average size do not show the whole picture. To complete the depiction, one must consider the distribution of schools and their pupil populations by various categories of school size.

Primary Education

The share of very small and very large schools at the primary level decreased from nearly 30 percent of primary schools in 1982 to less than 10 percent in 1999. (See Table 16.) Some 30 percent of pupils attended such schools in 1982; 15 percent did so in 1999. Among them, the share of pupils in very large schools (those with enrollments in excess of 700) declined with

Table 16. Primary Education, Pupils and Schools by School Size: 1982, 1989, 1999

School size	Schools	% of all schools	Pupils	% of all pupils
1982				
Total	1,268	100.0	449,119	100.0
Up to 99	259	20.4	14,900	3.3
100-199	227	17.8	33,851	7.6
200-399	307	24.3	91,820	20.4
400-750	335	28.1	190,620	42.3
750+	120	9.4	117,928	26.2
1989				
Total	1,144	100.0	434,754	100.0
Up to 99	306	26.7	35,314	8.1
100-199	348	30.4	104,088	23.9
200-399	426	37.2	234,780	54.0
400-750	64	5.6	60,572	13.9
750+				
1999				
Total	1,516	100.0	603,635	100.0
Up to 99	40	2.6	2,603	0.4
100-199	177	11.7	26,961	4.5
200-399	631	41.6	192,202	31.8
400-750	558	36.8	292,251	48.4
750+	110	7.3	89,618	14.8

* The sources use different criteria for sorting by size in the various years.

particular vigor – from 26.5 percent in 1982 to 15 percent in 1999.⁶

In 1999, schools belonging to the two categories in the 200–700 range accounted for a conspicuous majority of the primary education system: 80 percent of schools and 80 percent of enrollment. Notably, in 1982 only 50 percent of schools and 60 percent of pupils belonged to this group.

The share of very small and very large schools at the primary level has decreased perceptibly. These findings may indicate that the Ministry of Education has succeeded in its policy of having schools attain conventional sizes that are appropriate for educational activity. Although this policy has caused the average class size to increase over the years, the share of pupils who attended very small and very large classes has fallen steeply.

These general findings camouflage vast differences between sectors and school systems. Generally speaking, the proportion of large primary schools is much greater in the Arab sector than in the Jewish sector. Consequently, the proportion of pupils who attended large schools in the Arab sector is much greater than in the Jewish sector. Thus, 32 percent of Arab pupils at the primary level, as against 9 percent in the Jewish sector, attend schools that have enrollments of more than 700.

Within the Jewish sector, the share of large schools is much greater in the State system than in the State-Religious system, and the proportion of pupils who attended large schools is also greater in the State system. The main reason is that the State-Religious system caters to a population that is usually a minority in each neighborhood and locality. Another reason may be the tendency to maintain separate schools for boys and girls. The proportion of very large schools in the State-Religious system is negligible –1.6 percent – and these schools are attended by fewer than 5 percent of pupils in this system, in contrast to 9 percent of pupils in the State primary system. The difference

⁶ Importantly, the reportage on schools by size has changed: the “very large” category declined from 750 in previous years to 700 in 1999.

stands out even more in the tally of small schools (up to 199 pupils); 34 percent of State-Religious schools belonged to this category as against only 9 percent in the State system. These size disparities among primary schools are even more conspicuous when one recalls that the State-Religious system has moved more slowly in applying the changeover to junior-high schools; therefore, the number of eight-year schools is greater in the State-Religious system than in the State system.

Table 17. Large and Small Primary Schools, by Sector and School System, 1999 (Percent)

	Large schools (700+ enrolled)		Small schools (up to 199 enrolled)	
	Share of schools	Share of pupils	Share of schools	Share of pupils
Arab	19.0	32.2	6.4	1.7
Jewish	3.8	8.8	16.7	6.2
State	4.8	9.1	8.8	3.1
State-Religious	1.6	4.6	34.1	15.9

A slightly different perspective, but with a similar result, is obtained when primary schools are observed in terms of number of classes per school. Table 18 shows the small proportion of very small and very large schools at the primary level.

Table 18. Primary Schools, by Number of Classes, 1999

Number of classes	Number of schools	% of all schools
Total	1,510	100
Up to 6	154	10
7-12	660	44
13-18	512	34
19-24	163	11
25+	21	1

Despite the natural and justified tendency to assume, in view of the Ministry of Education regulations concerning budgeting of “undersized” classes,⁷ that small schools are at a disadvantage vis-à-vis medium and large schools in terms of hours per class and per pupil, it is not so. Table 19 shows that small schools (in this context, measured in number of classes) do not suffer at all in per-class allocations of hours on account of their size. Although they receive slightly fewer hours in the basic standard allotment, the total per-class allocation is much greater in these schools than in large schools. This may have to do with the correspondence between school size and socio-economic level. In any case, the result is clear, leaving room to wonder about these schools' fate in the transition to the per-pupil allocation standard if the standard does not include structural adjustments for socio-economic background.

Table 19. Primary Schools: Average Class Size, Allotment of Hours, and Average Hours Per Class and Per Pupil, by Number of Classes in School

Classes in School (selected sizes)	Avg. class size	Basic allotment per pupil ⁸	Basic allotment per class	Avg. hours per pupil	Avg. hours per class
5-7	24	1.37	33.5	2.3	55.2
12	28	1.27	36.3	1.8	51.8
18	32	1.11	35.6	1.4	46.0

⁷ An “undersized” class, one with fewer than twenty pupils, is supposed to receive half of the basic standard allotment, but, as the data show, there are enough compensation mechanisms – especially in the Jewish sector – to assure continued regular educational activity even in small schools.

⁸ The term “basic standard allotment” refers to the allocation of hours per class in the primary system. This allocation is equal for all classes (although there are small differences by grade of class). Schools in locations along the Confrontation Line and/or in national priority areas receive a slightly larger allotment.

The Junior-High Level

At the junior-high level, the picture in the Jewish and the Arab sectors is reversed: the proportion of large schools is higher in the Jewish sector. This reflects, in the main, the high proportion of large junior high schools in the State Jewish system. Another possible reason is the later entry of the Arab sector in the education reform. If this is so, junior-high schools in this sector may grow rapidly in the next few years. Within the Jewish sector, the size disparities between the State and the State-Religious systems are even more noticeable at the junior-high level than at the primary level. Thirty-five percent of junior-high pupils in the State system attend large schools; only 5 percent in the State-Religious system do so. Additionally, only 3 percent of junior-high pupils in the State system attend small schools (up to 199 enrolled), the share of which in the system all told is about 11 percent. In the State-Religious system, in contrast, 60 percent of junior-high schools belong to this category and are attended by 28 percent of pupils in this system.

Table 20. Very Large and Small Junior-High Schools, by Sector and School System, 1999 (Percent)

	Large schools (700+ enrolled)		Small schools (up to 199 enrolled)	
	Share of schools	Share of pupils	Share of schools	Share of pupils
Arab	7.4	13.1	4.3	1.4
Jewish	13.9	29.5	23.5	7.7
State	20.0	35.0	10.9	3.0
State-Religious	1.5	5.3	59.6	28.1

Table 21. Post-Primary Schools and Pupils, by School Size, 1996

	Total		Jewish		Arab	
	Absolute	%	Absolute	%	Absolute	%
Schools						
Total	585	100	494	100	91	100
Up to 199	161	27	150	30	11	12
200-399	166	28	131	26	35	38
400-599	94	26	75	15	19	21
600-799	69	12	51	10	18	20
800+	95	16	87	18	8	9
Pupils (thousands)						
Total	263	100	222	100	41	100
Up to 199	20	8	19	8	2	4
200-399	46	17	36	16	10	25
400-599	46	17	36	16	9	23
600-799	48	18	36	16	12	29
800+	104	39	96	43	8	19

The Post-Primary Level

Turning to the post-primary level (senior-high divisions in six-year schools and grades 9-12 in four-year schools), we find that most schools (56 percent) are small, with enrollments of up to 400. However, a majority of pupils (58 percent) attend schools with enrollments in excess of 600. Another reason for the proliferation of small schools in the Jewish sector is that the education system recognizes the special status of two sectors: the religious and the kibbutzim. Very large schools exist because the need to link the location of schools with the pupils' places of residence has been broken, and because it is vastly difficult, in social and educational terms, to split up prestigious post-primary schools.

By sectors, the Jewish sector is more prone to extremes than the Arab sector. Thirty percent of Jewish schools have fewer than 199 pupils; only 12 percent of Arab schools belong to this category. In contrast, 18 percent of Jewish schools have 800 or more pupils enrolled, as against only 9 percent in the Arab sector. As for the distribution of pupils in schools, 8 percent of pupils in the Jewish sector as against only 4 percent of pupils in the Arab sector attended small schools (up to 199 pupils). In contrast, 43 percent of Jewish pupils attended schools that had enrollments of 800 or more, as against less than half that share – 19 percent-in the Arab sector.