

Israel's Education System in Recent Years: An Overview

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 Internet edition

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Nachum Blass and Yossi Shavit*

This introductory chapter discusses recent developments in the Israeli education system. In the *Explanatory Notes to the Budget*, the last two Ministers of Education, Shai Piron and Naftali Bennett, emphasized the same objectives. The goals they identified and emphasized were: (1) reduce gaps in budget allocations between different socioeconomic strata and population sectors; (2) reduce the average number of pupils per class; (3) increase the percentage of pupils studying high-level mathematics (five units); (4) increase the number of pupils in technical-vocational education and their share out of all pupils in secondary education.

The first part of this chapter will present important background data on the education system, to be followed by an assessment of the success of the Ministry in achieving the objectives it has set for itself. The background data are drawn from official Ministry of Education website and other publications: budget books, the *Mabat Rahav* (literally, *A Broad Perspective*) and Budgetary Transparency website, the National Authority for Measurement and Evaluation in Education (RAMA), the Central Bureau of Statistics (CBS, in particular, the *Statistical Abstract of Israel*), and the OECD's annual *Education at a Glance*. Before proceeding to our analysis of the Ministry's success in achieving its objectives, we will look briefly at two background issues: the changing composition of Israel's pupil population, and the country's changing per pupil education budget.

1. Background

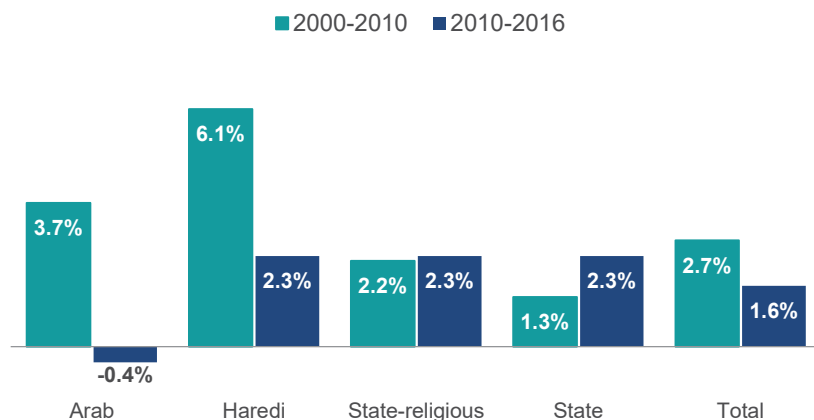
The changing demographic structure of Israel's education system has been discussed in a number of Taub Center publications, beginning in 2009 (Horev and Kop, 2009) and on a nearly annual basis since then. The "Four Tribes" speech delivered by President of Israel Reuven Rivlin in 2015 at the Herzliya Conference elevated the issue to public prominence.

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For many years it was commonly assumed, both by the general public and by those studying Israeli education system demography that, due to large fertility rate differences between the country's population sectors, the Arab Israeli and Haredi (ultra-Orthodox) pupil populations were growing at a faster rate than those of the state and state-religious education systems (Hlehel, 2014). Between 1960 and 2000, the combined Haredi and Arab Israeli share of the education system rose from 15 percent to almost 50 percent (ibid). However, the data in Figure 1 suggest a possible change in that trend. The figure shows the average annual rates of change in the number of first graders by sector and education stream, for two time periods: 2000 to 2010 and 2010 to 2016. Growth rates followed the familiar pattern during the first period, but the situation changed during the second period: growth in the number of Arab Israeli first graders ceased and even became negative, while in the Haredi sector, growth declined, and is now no greater than that of the other Jewish population groups.

Figure 1. Average annual rate of change in the number of first-grade pupils

By sector and supervisory authority



Source: Nachum Blass and Yossi Shavit, Taub Center

Data: Ministry of Education, *Transparency in Education: Budget*

A second important development is economic. From 2000 to 2016, the Ministry of Education budget increased by 86 percent in real terms. The number of teaching personnel employed in the schools grew by 55 percent, the number of classes by 34 percent, while the number of pupils in the schools increased by only 30 percent (Table 1).

Table 1. Education system basic data

	2000	2016	Increase 2000 to 2016
Approved budget in real prices, NIS billion	21	39	86%
Teaching manpower, thousands	104	161	55%
Number of classes	3,543	4,733	34%
Number of pupils, thousands	1,305	1,694	30%

Source: Nachum Blass and Yossi Shavit, Taub Center | Data: Ministry of Education; CBS

The main budget additions to the education system between 2000 and 2016 resulted from several developments. The most important of these were: the *Ofek Hadash* (“New Horizon”) and *Oz LeTmura* (“Courage to Change”) labor agreements; the decision to fully implement the Compulsory Education Law for ages 3-4; the creation of afternoon frameworks for ages 3-8; the assignment of a second teacher’s aide to preschools for ages 3-4 with classes of more than 30 children; the addition of instructional hours for grades 1-3; and, a reduction in the number of pupils per class (Blass, 2016a). The increase in real budget terms can be seen in the increase in the per-child instruction hours, smaller class sizes, and higher teacher wages. Israel is one of the only OECD countries where real per pupil budget growth is higher than average. Despite this, the share of national education spending in Israel’s GDP has not changed substantially (Central Bureau of Statistics, 2017), and the size of the real per pupil budget is still significantly lower than the OECD average.

2. Policy assessment

The following section is an assessment of the degree to which the Ministry of Education has succeeded in realizing the four goals it set for itself.

Reduce gaps in education budgeting between different socioeconomic strata and population sectors

The main Ministry program directly intended to reduce the gaps is the differential budgeting program announced by Minister Piron in November 2014, just days before his ministerial term ended. The plan’s advantages and disadvantages were explored at length in the chapter on inequality in the education system in the *State of the Nation Report 2015* (Blass, 2015), and in a

blog post published on the Taub Center website (Blass, 2016b). Now, three years after the program was announced, an assessment of its implementation results can be undertaken.¹

In terms of budget size, the program is very far from having achieved its original objective of increasing the budget allocated for affirmative action by a billion shekels (150,000 weekly hours).² Between 2013/14 and 2015/16 school years, NIS 878 million were added to the total budget (teacher wages and other expenditure components) for official primary education, of which only NIS 215 million (24 percent) were added for pupils in the two lowest Nurture Index quintiles;³ the total addition for middle schools was NIS 600 million, of which NIS 172 million were for the two lowest socioeconomic quintiles (29 percent).⁴ As Table 2 shows, changes that have occurred since 2014 have mainly benefited pupils in schools of higher socioeconomic status quintiles, rather than those in schools that serve disadvantaged populations, at least in primary and middle school. In high schools, the per quintile budget increases have been very similar across all five levels of socioeconomic status at all educational levels.

Since the program refers to instructional hours, the change spurred by the announcement of a differential per pupil standard can also be assessed in terms of the change in weekly hours per pupil compared with 2014, the year the program was announced.⁵

1 The assessment covers only two years, since the most recent data available are for 2016.

2 See Ministry of Education press release, November 26, 2014.

3 School socioeconomic quintiles are defined in accordance with the Nurture Index, in which schools are divided into five groups based on the socioeconomic composition of their pupil populations. A ranking of 1 is the lowest socioeconomic quintile and 5 is the highest.

4 The calculation is based on the Ministry of Education's Budgetary Transparency website, and refers to per pupil primary school budgeting in official educational institutions.

5 The Ministry of Education defines a weekly hour as the annual cost of one teaching hour.

Table 2. Changes in per quintile budget in official primary and middle schools and all high schools
By school Nurture Index quintiles

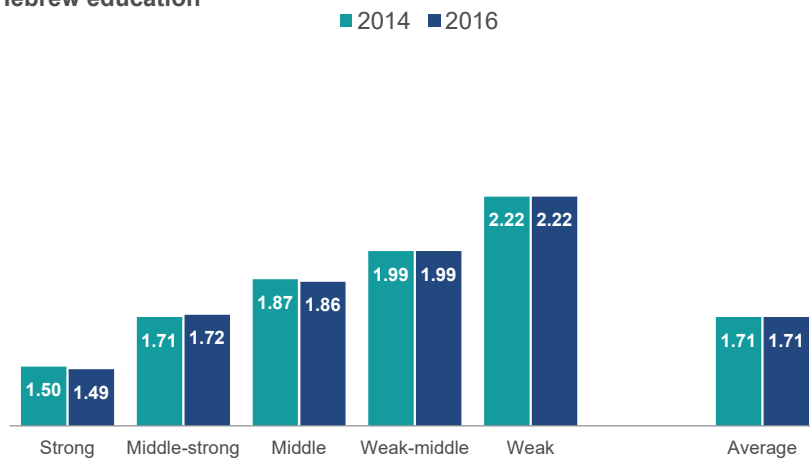
	School Nurture Index quintile					Average
	Strong	Middle-strong	Middle	Weak-middle	Weak	
Primary						
2012-2014	1.14%	1.17%	1.12%	1.08%	1.08%	1.12%
2014-2016	1.11%	1.13%	1.10%	1.05%	1.05%	1.09%
Middle school						
2012-2014	1.09%	1.12%	1.05%	1.16%	1.14%	1.11%
2014-2016	1.21%	1.09%	1.16%	1.01%	1.16%	1.12%
High school						
2012-2014	1.22%	1.12%	1.22%	0.98%	1.11%	1.13%
2014-2016	1.18%	1.16%	1.18%	1.16%	1.19%	1.18%

Source: Nachum Blass, Taub Center | Data: Ministry of Education, *Transparency in Education: Budget*

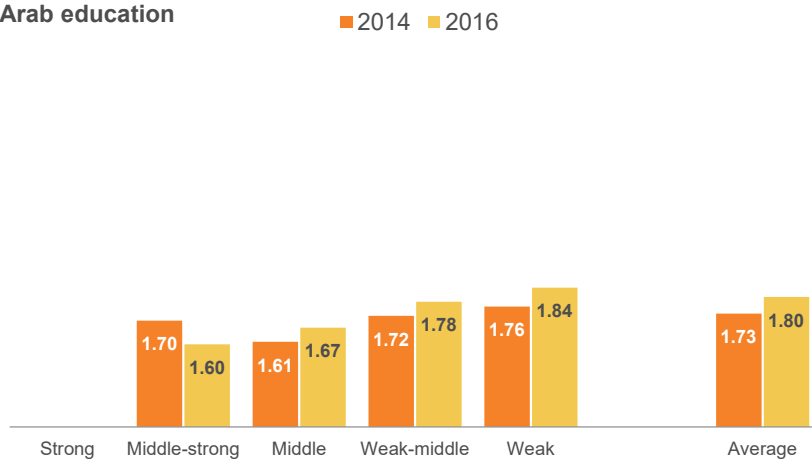
Figures 2 and 3 provide the number of weekly hours per pupil in primary and middle schools in the official educational streams, by Nurture Index quintiles. In Hebrew primary education, the change is minor. Schools that benefited from the change were those in the weakest quintile, where the average per pupil budget rose by just 2 percent. In Arab Israeli education, schools in the three lowest quintiles saw an average increase of 3-5 percent in the allocation of per pupil hours, while in the fourth quintile, to which very few Arab Israeli schools belong, there was a slight decrease. However, the number of hours per pupil in Arab Israeli education in all quintiles is still much lower than the number of hours per pupil in the Jewish sector. For middle schools, the increase in hours per pupil was small, but more pronounced in Arab than in Hebrew education. Nevertheless, the gap between the sectors in each quintile remained substantial, especially in the two lowest quintiles where most Arab Israeli schools are concentrated.

Figure 2. Per pupil weekly hours in primary school
By sector and school Nurture Index quintile

Hebrew education



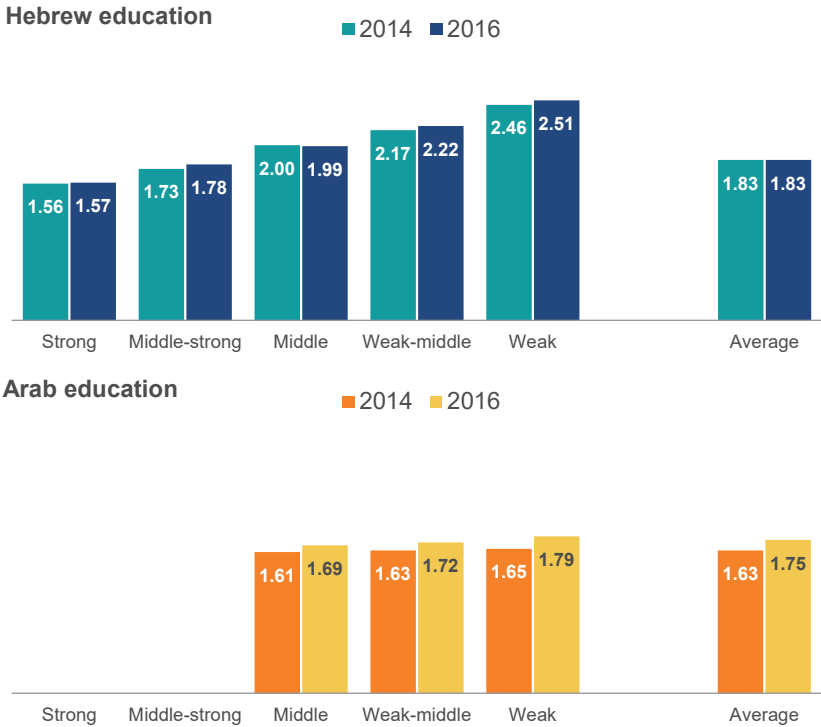
Arab education



Source: Nachum Blass and Yossi Shavit, Taub Center
Data: Ministry of Education, *Transparency in Education: Budget*

Figure 3. Per pupil weekly hours in middle school

By sector and school Nurture Index quintile



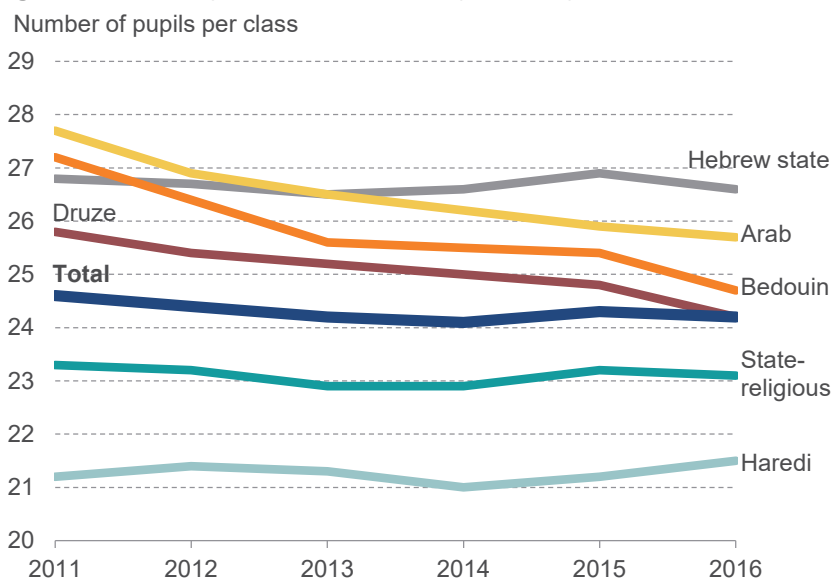
Source: Nachum Blass and Yossi Shavit, Taub Center
 Data: Ministry of Education, *Transparency in Education: Budget*

Reduce the number of pupils per class

Class size has been on the educational agenda for several years, and Taub Center researchers have devoted considerable attention to the issue (Blass, 2008; Feniger and Shavit, 2011; Shafir, Blank and Shavit, 2016). The *Explanatory Notes to the Ministry of Education 2017-2018 Budget* states that, in the 2013/14 school year, the maximum number of pupils per class was being reduced from 40 to 32, with consideration given to the school's Nurture Index. In reality, Minister Bennett decided that, along with the general class size reduction measure, a maximum of 34 pupils would also be instituted for first grade classes, with other grade-levels added annually. This decision is problematic for two reasons. First, it establishes the class size maximum at 34 pupils rather than 32 as the government had previously decided. Second, it applies to all schools, regardless of their Nurture Index.

A look at Israeli primary schools by sector and stream clearly indicates that, although class sizes declined, if only slightly, between 2011 and 2013, there was a modest increase in class size between 2013 and 2016 in the Hebrew sector, and a slowdown in the rate of reduction in the Arab system during the same period. In other words, during the years that preceded the present decision about reducing class sizes, the average number of pupils per class declined more rapidly than after the decision was made (Figure 4).

Figure 4. Class size in primary schools
Regular education, by sector and supervisory authority



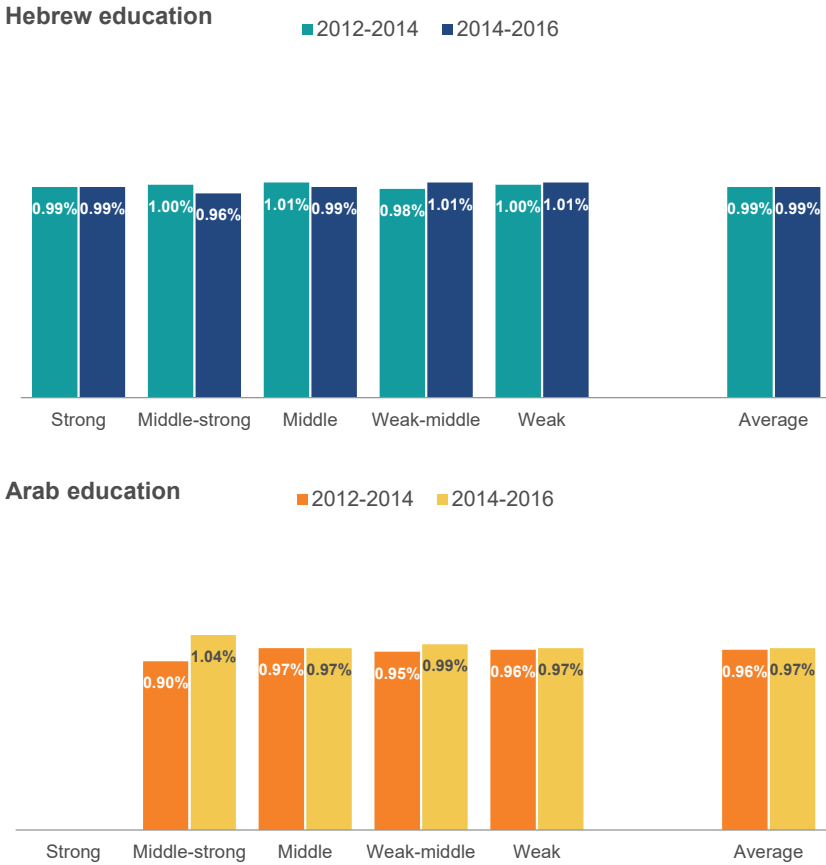
Source: Nachum Blass and Yossi Shavit, Taub Center | Data: Ministry of Education, *A Broad Perspective*

When assessing the decision's impact on disparities in learning conditions between pupils in schools serving affluent populations and those in schools serving disadvantaged populations, we find that schools serving affluent populations actually benefited more (Figures 5 and 6). In the Hebrew sector, the schools serving the weakest populations saw almost no benefit from the decision to reduce the number of pupils per class (the change was less than 1 percent, as the classes were smaller to begin with). Regarding Arab education, primary schools serving the weakest populations benefited more than did better-off schools, but not to a substantial degree. At the middle school level, the situation worsened for Hebrew schools serving weaker populations, and

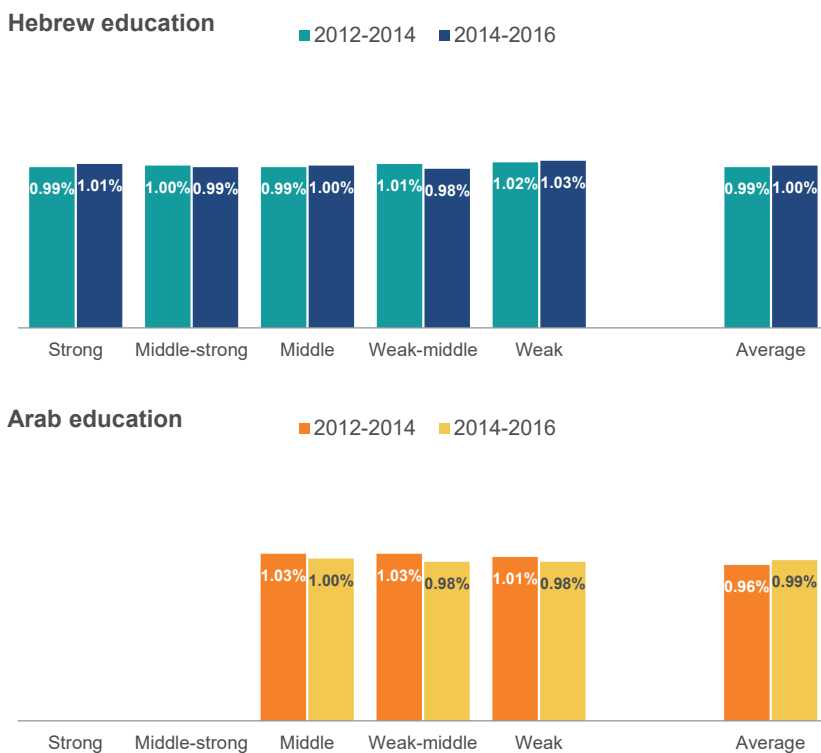
improved slightly or remained the same in other schools. In Arab system middle schools, the situation improved only slightly. Ultimately, therefore, the rhetoric of “reducing class size” paints a picture of improvement that is infinitely more impressive than the actual state of affairs. What is more, the gains have not necessarily benefited Israel’s weakest populations.

Figure 5. Percent of reduction in class size in official primary schools

By sector and school Nurture Index quintiles



Source: Nachum Blass and Yossi Shavit, Taub Center
 Data: Ministry of Education, *Transparency in Education: Budget*

Figure 6. Percent of reduction in class size in middle schools

Source: Nachum Blass and Yossi Shavit, Taub Center | Data: Ministry of Education, *Transparency in Education: Budget*

Increase the share of pupils studying math at higher levels (five units)

Increasing the share of those qualifying for a bagrut certificate with five unit-level math is one of the most important goals set by the former and current education ministers, Shai Piron and Naftali Bennett.⁶ Minister Bennett, who has particularly emphasized this objective, feels that the decline in the share of those pursuing five units of math between 2005 and 2014 endangers Israel's economic future, and believes that restoring the numbers to their past level,

⁶ The Israeli bagrut exam and certificate is a matriculation exam which is considered similar to exams in France and may be compared to the NY State Regents Examination. A bagrut certificate is awarded to pupils who pass the subject-matter examinations in each exam. The bagrut certificate should not be confused with a high school diploma which signifies the completion of 12 years of study.

or improving them, is crucial for the country's continued economic growth and global leadership in technology. Accordingly, he undertook several far-reaching measures. Math instruction hours and math teacher jobs were added, and the university bonus for pupils with five units of math was raised to 30 points. Moreover, in order to overcome the reluctance of many pupils to studying higher-level math, a "safety net" was created to ensure that those who take five units of math and do not pass the test will be considered as having passed the four-unit exam and be awarded an additional 20 points.

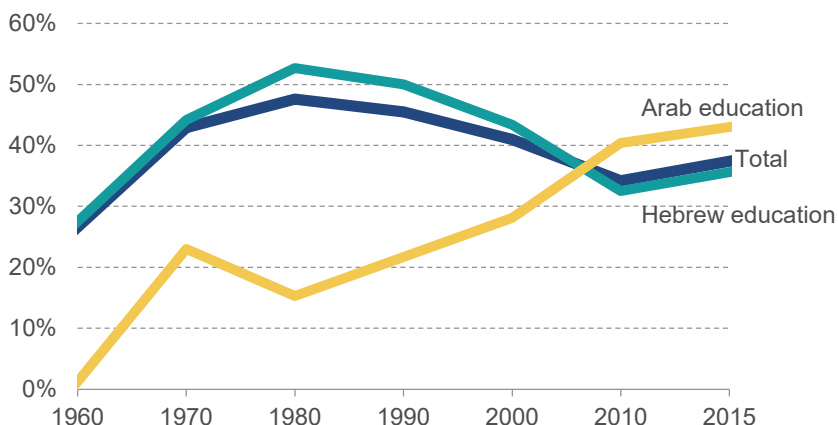
The 2016 bagrut exam results indicate that these measures achieved the hoped-for outcome. Between 2014 and 2016, the share of pupils eligible for bagrut with five units of math rose from 9.5 percent to 11.4 percent of all bagrut exam takers. The increase looks like a major achievement — but it may be due, in part, to changes in the demographic composition of Israel's twelfth grade population. Between 2005 and 2014, there was a slight decline in the number of pupils in state and state-religious education — the pool from which most of those who take the five unit math bagrut exam are drawn. At the same time, the number of pupils in the Haredi and Bedouin sectors, which produce few bagrut-eligible pupils taking five units of math, grew by 7,500. Between 2014 and 2015, however, the number of pupils in the state and state-religious schools changed significantly: the number of twelfth graders in state Jewish education increased by 3,500, and in state-religious education by 1,400.⁷

Increase the percentage of pupils in technical-vocational education

In addition to the effort to increase the share of those taking math at the five-unit level, both Education Ministers set themselves the goal of increasing the share of pupils in technical-vocational education, adopting the slogan, "Returning technical education to its former glory." As Figure 7 shows, technical-vocational education developed differently in the Hebrew and Arab education systems. In the Hebrew sector, its share in secondary education peaked during the 1990s, when it accounted for 50 percent of upper secondary pupils; by 2010, it had declined to 32 percent. In the Arab education system, by contrast, technical-vocational education grew from 21 percent in the 1990s to 40 percent in 2010. Since 2010, thanks to a serious effort by the Ministry of Education, the share has risen to 35 percent in the Jewish sector and to 43 percent in the Arab Israeli sector, for a total of 37.4 percent of pupils in 2016. This seems to indicate a new direction in technical-vocational education which has transformed from a downturn to an upswing.

⁷ Unfortunately, no data (on the share of those eligible in each educational stream) are available that would make it possible to standardize the rate of change in the number of those taking the five-unit math bagrut exams for these kinds of demographic changes.

Figure 7. Share of pupils in technical-vocational education out of all upper secondary pupils



Source: Nachum Blass and Yossi Shavit, Taub Center | Data: CBS

Does this changing trend indicate that the Ministry of Education has achieved its declared goals of adapting the education system's structure to the needs of the economy, and giving pupils who are not eligible for a bagrut certificate the means to participate in the economic and social spheres? This remains an open question.

What makes it hard to answer this question is the structure of Israeli technical-vocational education. In 2011/12, technical-vocational education consisted of several different tracks: the engineering track (35 percent of all pupils in technical-vocational education), which is actually intended for academically strong pupils; the technical track (45 percent), intended for “regular pupils” who take the bagrut exams and generally perform well on them; and the vocational track (20 percent) — the true equivalent of what was etched in the Israeli collective memory as “vocational education” (see Blank, Shavit and Yaish, 2015). There are also a few industrial schools under Ministry of Economy supervision that serve the weakest populations, attended by 13,500 pupils — less than 4 percent of the total post-primary pupil population. A later study (Krill, Moshe-Jantzis and Shavit, 2017) found similar results.

Thus, a comprehensive look at technical-vocational education that fails to distinguish between its component tracks misses the mark, and is of little relevance educationally, socially, or even economically. In order to answer the question asked above, it will be necessary to wait for future studies, ones that will assess the degree to which graduates of technical-vocational education in the 2010s have made their way socially and economically.

Summary

The overview presented in this chapter indicates that the education budget in general, and the per pupil budget in particular, have grown substantially in recent years. Has this growth been channeled effectively toward achieving the objectives of the Ministry of Education? That is, has the Ministry managed to reduce budgetary gaps between different population groups, lower the number of pupils per class, increase the share of pupils studying higher-level math, and increase the share of technical-vocational education?

The question cannot be answered unequivocally. We can point to a certain degree of progress for each of the goals. Per pupil expenditure has increased for all socioeconomic quintiles, but more so in the higher socioeconomic quintiles. The greatest reduction in the number of pupils per class occurred in Arab education although the classes in this sector were very large at the start of the period. With regard to increasing the number of pupils studying high-level math, Ministry of Education reports suggest a rise in the number of pupils taking five units of math, but some of this may be explained by an increase in the number of pupils in the state and state-religious education streams. Finally, although the share of technical-vocational education has risen slightly, it should be noted that most of the increase took place in the engineering track, whose pupils have high educational achievements and come from stronger socioeconomic backgrounds.

The main challenge continues to be that of achieving a more equitable distribution of education system resources between different population groups and socioeconomic strata. From this perspective, the changes that have occurred are insufficient, and a great deal of work remains to be done.

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