

The education system that's endangering Israel's future

The system's root problems and socioeconomic implications

by

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When half of Israel's children receive a Third World education, they'll only be able to maintain a Third World economy as adults. But a Third World economy won't be able to sustain a First World army – a necessary condition for the country's continued existence in the most violent region on the planet.

Sounds overly dramatic? After all, this is the Start-up Nation with some of the world's best universities and one of its most educated populations. Among prime working age adults (ages 35-54), the share of Israelis with an academic degree is the fourth highest in the world while the number of school years per person is the third highest.

During an era of shameless expressions such as “truth isn't truth,” “fake news,” and “alternative facts,” it would appear that we have entered a phase in which opinions replace facts and anything goes. In the 1930s (a particularly exceptional example), a lack of information helped enable the spread of misinformation. Today, we are inundated with information – so much data that most people are incapable of seeing the forest for the trees. This is particularly fertile ground for persuasive demagogues who make it even more difficult for the general public to distinguish between the wheat and the chaff. It's bad enough when this occurs in other lands. But for a people who get the opportunity for a home of their own just once every 2,000 years, there are very few degrees of freedom for us to err and not understand what we see in the mirror.

On the face of it, we appear to have recognized the principle that education is a necessary condition for a better life – and Israel has done what it does best: opened the throttle for a full-frontal assault on the target. The share of academic degree holders and the number of school years per person in Israel today is indeed very high in comparison with the rest of the world. But 70 years after attaining independence, with the gates of a new school year opening, the time has come to finally open up that black box more commonly referred to as Israel's education system and blast it with a major dose of sunshine. It's possible to be swept away by unique success stories that do not reflect the bigger picture – or it's possible to focus on the core problems and understand what kind of a country this system is leading us toward.

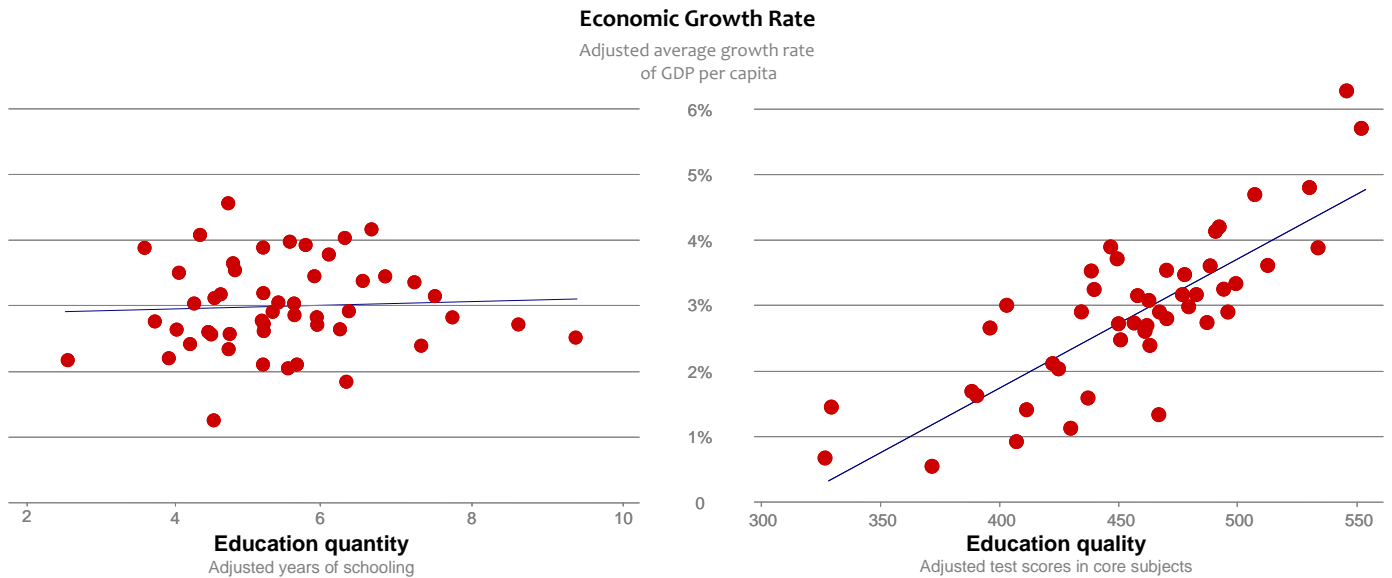
Lots of education, low labor productivity

A hint at the current state and the direction we're headed comes from the economic data. Although Israelis are more educated – on paper – than the populations of nearly all other Organization for Economic Cooperation and Development countries, the country's labor productivity (i.e. its GDP per hour worked, which in turn determines the ability to pay higher hourly wages) is beneath most OECD countries. As if this were not enough, Israel's labor productivity has been falling further and further behind the G7 average (the world's seven leading economies), with the gap between them and us more than tripling since the 1970s.

The seeming contradiction between Israel's high rates of education and low labor productivity can be reconciled by paraphrasing Abraham Lincoln: it's not the number of years of your education that count; it's the education in your years. The side-by-side comparison in

Figure 1

RELATIONSHIP BETWEEN ECONOMIC GROWTH AND EDUCATION QUANTITY/QUALITY
IN 50 COUNTRIES, 1960-2000



* Relationship between variables after controlling for the impact of other influencing variables.

Source: Eric Hanushek and Ludger Woessmann, (2015)

Figure 1 clearly highlights this, with the left panel displaying the relationship between the quantity of education and economic growth while the right panel shows the relationship between the quality of education and economic growth in 50 countries over 40 years. There exists a very weak positive relationship between the number of school years per person (i.e., education quantity) and economic growth rates. The strong positive relationship, as evident in the right panel, is with the quality of education – as measured by achievements in core subjects in the international exams.

While it's relatively easy to measure education quantity – number of school years, number of academic degrees, etc. – Israel has failed miserably in measuring and evaluating the quality of the education that it provides its children. For example, one generation after another of graduating high schoolers has had to take matriculation exams. But to this day, the education system has never bothered to calibrate the exams so that it, and we, might be able to know if the level of knowledge of the country's children – at least in core subjects – has risen or fallen over the decades. Not only is it impossible to compare qualitative changes in Israel over time, it is also impossible to conduct such comparisons during the same year across different towns and regions within the country because subjective local components are an integral part of the grades.

The only national level exam that is standardized over time in Israel is the Meitzav exam (which focuses core curriculum subjects at the primary and lower secondary school levels), and even its calibration only began in 2008, 60 years after the country was born. In general, achievement levels today are higher than they were a decade ago, a heartening fact in and of itself – until one sees the share of correct answers out of the total in the various core subjects.

Education system's resounding failure

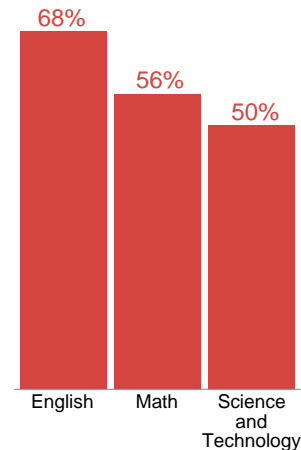
As shown in Figure 2, only 68% of the questions in English were answered correctly while the results in mathematics (56%) and science and technology (50%) constitute failing grades for the country as a whole. This is one of Israel's most resounding failures – and it doesn't even take into account the further negative impact on the national average that would have resulted had the Meitzav exams also tested the many ultra-Orthodox (or Haredi) pupils who do not study any English or science.

In the most recent international Program for International Student Assessment (PISA) exam, the average score in math, science and reading attained by Israeli children (once again, without most of the Haredi children, who would have lowered the national average even further) was below that of every single developed country in Western Europe, North America and East Asia. When they become adults, these same children from the various countries will need to compete with one another in the global marketplace.

The implications emanating from this picture are particularly ominous for Israel, which, like other small countries, needs to import and export extensively because of its inability to manufacture all of its needs. As though it were not enough that most of the Haredi children do not study the material and do not take the exams, the average achievement level of non-Haredi Jewish children falls below that of most developed countries.

The achievements of Arab Israelis in the PISA exam paint an even grimmer picture. Their average score in math, science and reading is not only below that of the entire developed world, it is also beneath that of many developing countries. In fact, the average achievement level of Arab Israelis is below the average levels in the majority of predominantly Muslim countries that participated in the PISA 2015 exam (Figure 3).

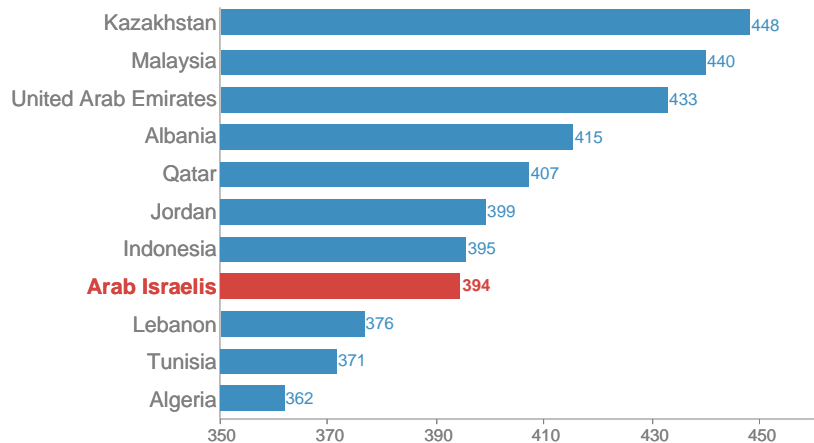
Figure 2
PERCENT CORRECT RESPONSES BY ISRAELI PUPILS*
MEITSAV 2016 EXAMS



* not including most Haredi pupils.

Source: Dan Ben-David, Shores Institution and Tel Aviv University (2017)

Figure 3
COMPARISON OF SCORES ATTAINED BY ARAB ISRAELIS
AND PREDOMINANTLY MUSLIM COUNTRIES
PISA 2015 EXAMS



* Average score in math, science and reading exams for Arab Israelis and for all predominantly Muslim countries participating in PISA 2015.

Source: Dan Ben-David, Shores Institution and Tel Aviv University (2017)

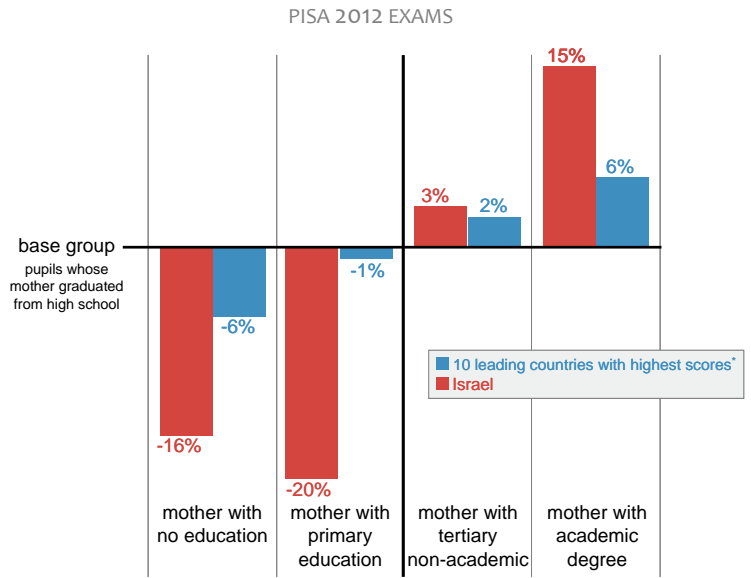
The primary determinant of children's achievements is the education level of their parents – and in particular, the mothers' education. This is true abroad, and it is true in Israel. In a Shores Institution policy research paper, Dr. Noam Gruber showed the existence of a strong relationship between maternal education and their children's scores.

As indicated in Figure 4, pupils in the ten top-scoring countries whose mother had no education scored 6% below pupils whose mother graduated from high school. On the other side of the spectrum, pupils from those same countries whose mothers had an academic degree attained scores that were 6% above the scores of pupils whose mothers only graduated from high school. In Israel, the link between maternal education and pupils' scores is several orders of magnitude higher – reflecting a major indictment of the Israeli education system's enormous failure in reducing the gaps that pupils come from home with. It is no coincidence that achievement gaps between Israeli children in the core subjects have been the highest in the developed world in every single exam that has been administered since the 1990s.

When roughly a quarter of primary school pupils study in the Arabic language schools, and another fifth in the Haredi schools, with many additional pupils studying in religious (non-Haredi) and secular schools situated in Israel's social and geographical peripheries, then even though not all of these groups receive a Third World level of education, it is possible to surmise that approximately one-half of Israel's children do indeed receive one – and they belong to the fastest growing segments of the population.

It is not a coincidence that Israel's labor productivity is so low, and is steadily falling further and further behind the G7 countries – not to mention the country's rates of poverty and inequality which are among the highest in the developed world. The outcomes of Israel's education system negatively affect us all as the country's economic engine is running on fewer and fewer cylinders and finding it increasingly difficult to pull the entire nation forward. We need these other cylinders to keep developing and growing as an economy, not to mention being able to fund the public costs needed for maintaining defense, education, health, welfare and other infrastructures.

Figure 4
ACHIEVEMENT GAPS BETWEEN PUPILS ON BASIS OF MATERNAL EDUCATION



* Ten leading countries: Canada, Estonia, Finland, Hong Kong, Japan, Korea, Netherlands, Singapore, Switzerland, Taiwan.

Source: Noam Gruber, Shores Institution (2017)

Taxing problem

Israel is more reliant on indirect taxes (such as VAT and sales taxes) than the majority of developed countries. Such taxes are considered regressive since their relative burden on income rises as incomes fall. Thus, as Israel will need to increase its tax income in the future, it will have to rely more heavily on direct taxation (primarily income tax). Already today, though, half of the country's population pays no income tax whatsoever since it does not even reach the lowest rung on the income tax ladder. Some 92% of Israel's entire income tax revenues come from just the top two income deciles (average annual gross income per earner in the ninth decile is about \$59,000), and this percentage has been steadily rising over the years (it was 83% in 2000).

If such large swaths of the population will continue to remain outside of the country's primary engine of economic growth, then the resultant price to be paid will not be restricted only to them. Increasing budgets will be needed to provide welfare assistance and services to these individuals, while at the same time continuing to maintain the country's remaining infrastructures. Future governments will have the authority to increase the tax burden to any heights they deem necessary, but they won't have the authority to mandate that all of the young shoulders needed to bear that rising burden must remain in Israel. Demography isn't just rates of fertility and mortality. It is also the share of educated and skilled individuals who decide to remain or to leave Israel – which brings us back to the opening sentences of this article.

Our future is in our hands. Not everything is dependent on education, but unless the education situation in Israel completely changes direction, all other issues will cease to be relevant. A comprehensive reform of the entire system is needed. We need to stop confusing between the marketing of wage bargaining agreements with the teachers' unions – as though they were education reforms – and actual reforms that need to focus on what children study; the way that teachers are chosen, taught and compensated; and the modes of operation, supervision, measurement and evaluation of the entire education system. It is possible that additional budgets may be needed to implement the reform. But simply throwing more money at the current system is as effective as throwing money into the sea.

Six days a week

Successful implementation of comprehensive education reform first mandates a recognition and understanding of the system's root problems. Crowded classrooms are a frequent complaint. Whether or not this is indeed the case, what is more relevant – at least in Israel's case – is why such congestion exists in the first place. While the number of pupils per class is relatively high in Israel, when compared to the OECD average (Figure 5), the number of pupils per full-time equivalent teacher in Israel is nearly identical to the OECD average, and is even slightly below the OECD in lower secondary education. In other words, there is no lack of teachers in Israel and there is no justification for the extraordinarily large number of pupils per class.

Lack of sufficient instruction time is also not the reason for the low quality of education in Israel. The number of school days in the country is considerably higher than in all other OECD countries (in fact, it's 10% greater than in the number two country, Japan). As if this were not enough, the education and finance ministries recently agreed to an additional expenditure of over \$100 million out of scarce budgetary resources in order to further reduce the

number of vacation days – in other words, to raise the number of school days even further.

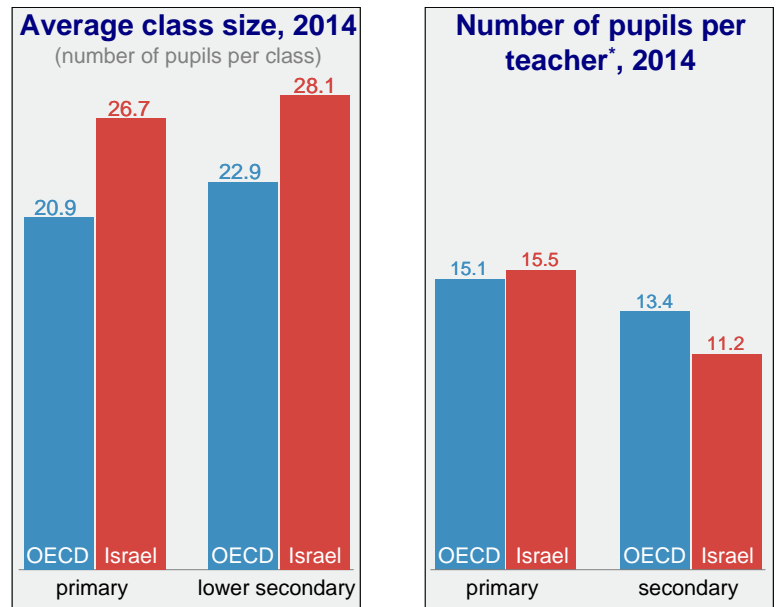
The underlying reason why Israeli children have more school-days than any other developed country is that Israel's children study six days a week. Not only are five days a week the norm in other countries, Israeli teachers only work just five days a week, as do most of the pupils' parents. It makes no sense that Israeli children are also not moved to five-day school weeks. As in the case of overcrowded classrooms, this is not a real problem but rather one of organizational behavior and the feckless approach that spending more money can substitute for root solutions.

Not only is the low level of Israeli education not due to a lack of school days, it is also not the result of too few instruction hours, as indicated in Figure 6. The average number of instruction hours devoted to reading, writing and literature in the OECD is 21% lower than in Israel, but the average achievement of these same countries in the reading exam was 3% higher than Israel's. In math and science, they study 28% and 29% (respectively) less and attain 4% and 6% (respectively) higher grades.

When the children of Israel receive so many instruction hours while their scores are so low, the primary source of the problem is what happens in class during those hours. There is no lack of possible explanations – from inadequate lesson plans through discipline problems and crowded classrooms to the qualitative levels of the teachers. It is also possible that there is an additional problem, one related to the way instruction hours are measured in Israel.

Do the country's pupils really receive so many instruction hours, or is this part of a setup used to increase salaries? After all, the education system determines teachers' pay according to the number of their instruction hours. Low salaries are often augmented by converting many activities that are completely unrelated to frontal class instruction into purported instruction hours. Thus, instead of directly

Figure 5



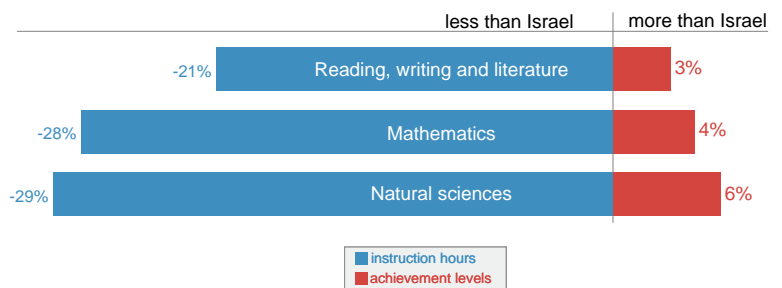
* according to full-time equivalents.

Source: Dan Ben-David, Shoresh Institution and Tel Aviv University (2017)

Figure 6

ACHIEVEMENTS VS INSTRUCTION HOURS*

OECD AVERAGE RELATIVE TO ISRAEL



* Cumulative number of compulsory instruction hours in primary and lower secondary schools. and average achievement levels in math, science and reading in PISA 2015.

Source: Dan Ben-David, Shoresh Institution and Tel Aviv University (2017)

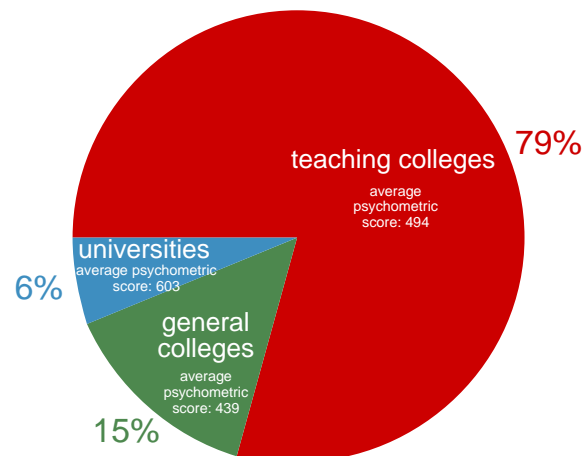
compensating teachers for their entire workload, all kinds of machinations are employed that show up as though actual teaching took place. The greater the extent of this problem, the larger the degree of distortion in Israel's education picture, since there is no way of knowing how many genuine hours of instruction are given to the children.

Education reform basics

And then there is the question of the teachers themselves, and their professional levels of competency. There is no doubt that many teachers are highly qualified and choose the profession out of a sense of mission and not because of a lack of professional options. But this is not the general defining characteristic of most teachers. The distribution pie of first year education students appears in Figure 7. In 2015, some 79 percent of students studied in teaching colleges with entrance requirements below those of nearly every academic department in every research university. Consequently, their average psychometric score (an exam that serves the same screening purpose as the American SAT) was 494, which was below 61% of all those who took the test. An additional 15% of the students studied in non-research general colleges, with an even lower average psychometric score of 439 – a score that was below 76% of all test takers. Just 6% of the first year education students studied in research universities. Their average psychometric grade (617) was higher than that of the two other, much larger groups, but it was nonetheless below the 617 average that all research university students attained. When most of Israel's teachers are below the general level of the universities, how can it be expected that they will be able to bring Israeli children to the level needed for acceptance and success at the universities?

The concept of education in Israel must change. The rush to attain academic degrees not worth the paper they are written on, and the large number of school years at the lowest levels in the developed world, are no substitutes for actual knowledge. Education reform needs to be real. The ministry in charge cannot both administer and supervise the education system while also holding responsibility for the measurement and evaluation of its outcomes. The role of the Education Ministry should be in setting the direction and defining objectives – including the determination of a higher quality common core curriculum for all pupils, including the Haredim – and supervising the results. The actual running of the schools, and the flexibility that needs to accompany this, should be transferred to the school principals who will be accountable for attaining the goals. Those who are unsuccessful in reaching the designated targets should be replaced.

Figure 7
DISTRIBUTION OF EDUCATION STUDENTS IN ISRAEL
BY TYPE OF INSTITUTION, FIRST YEAR UNDERGRADUATE STUDENTS, 2014-2015



Source: Dan Ben-David, Shores Institution and Tel Aviv University (2017)

The current method for educating teachers in Israel needs to be turned on its head. Instead of teaching them how to teach and providing bits of study in various disciplines along the way, future teachers should undergo the respective screening processes of acceptance to the various disciplines they are interested in majoring in as undergraduates. After completing their degrees, the graduates who will have become experts in their fields (at least at the BA/BS level) can choose if they even want to become teachers, or if they prefer to go in other directions. If the education system wants them to teach, it will have to compete with the other alternatives before them – in terms of wages and also in terms of work conditions. This means providing higher monthly salaries (after teaching certificates are attained in a considerably abbreviated process), while demanding longer work hours and shorter vacations, in a manner consistent with norms that are common in the sectors with which the education system is competing. As such, it will be possible to hire fewer teachers who will work more hours and more days, while being compensated at higher levels.

These are just some of the building blocks upon which a deep and comprehensive reform of the education system must be based. What needs to be done is known, and what will happen to the country if these steps are not taken is also known.

We are all on the same ship called Israel, and in front of us is an iceberg. It's possible to jump ship, or it's possible to come to our senses and begin changing direction toward a safe harbor. It is in our hands to preserve the sanctuary that protects us all – Arabs and Jews, Right and Left, religious and secular – from the alternatives surrounding Israel. This means that the greater good must begin trumping narrow sectoral interests. With elections just around the corner, we urgently need groundbreakers with the vision, courage and abilities to lead such a change.