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The Black Hole Called Education

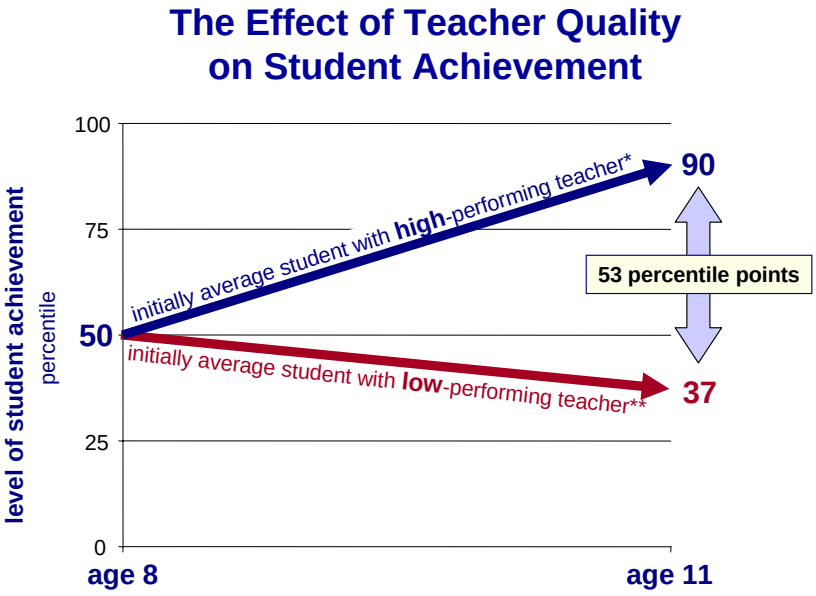
by

Dan Ben-David

Along the winding Tennessee river and in the Appalachian mountains is one of the poorest areas in America. Tennessee is the state that Elvis called home. It is also the place that inaugurated in the 1930s one of the largest socio-economic experiments of the time – the creation of large dams for creating electricity and, in particular, jobs – as part of the new president's New Deal.

More than half a century later, another experiment was conducted in Tennessee, considerably smaller than the dam project, but with the potential to shed light far beyond Appalachia. Two researchers from the University of Tennessee, William Sanders and June Rivers, examined the relationship between teacher quality and student achievement. In a seminal study encompassing all of the children in Tennessee between third and fifth grades during the years 1990-1996, they reported findings that render the Israeli version of the term "education reform" – which is so popular today among cabinet ministers and top government officials – devoid of all meaning.

As can be seen in the figure, Sanders and Rivers found that quality differences between teachers led to the creation of a huge gap in achievements between students. Average 8 year-olds fortunate enough to receive teachers in the top quintile of the profession gravitated upwards over the next few years, placing them in the 90th percentile of their age group by the time they were 11. Similarly average 8 year-old students with teachers in the bottom quintile descended to the 37th percentile by age 11 – a lifetime of a difference between the two groups of students that were once the same.



* among the top 20% of teachers
** among the bottom 20% of teachers

Sources: Sanders and Rivers, (1996 and 2002), McKinsey (2007).

But in a country where delusional reform substitutes for the real thing, why let such facts come in the way of throwing money – lots and lots of money – on partial solutions. Instead of enacting policies that will directly increase the quality of teachers, negotiations between the government and striking teachers focused primarily on just one aspect related to quality: salaries. Teachers' wages here are indeed low. Even after accounting for differences in living standards, they are 40-50% below the OECD average.

An improvement in wages and a change in teachers' working conditions is crucial. However, this does not constitute reform in a country with roughly two dozen teaching colleges

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– all publicly funded and all with admissions requirements below those in nearly every academic department in each of the country's universities and general colleges.

Though public resources in Israel are as scarce as natural resources, this little detail does not inhibit the government from spending huge amounts to train a large number of people who lack the individual abilities that would have enabled them to gain admission to a university – but are saddled with the responsibility for preparing children to meet those exact same requirements.

A true reform must begin with an immediate closure of all the teaching colleges, except for a handful that may be good enough to be upgraded to general colleges. An individual wanting to become a teacher in Israel should have to be admitted to regular academic studies in universities or in general colleges, receive a BA or BSc – at least – in his/her field of specialization, and then complete a teacher training program. Such preparation will ensure a higher minimum level than today, and it will force the country to pay competitive wages in order to convince people with alternatives to choose the teaching profession.

The State of Israel's Education

The recent deluge of results from several achievement tests underscores the abysmal level of education provided the children of Israel. The direction is downward, and has been so for decades. In the standardized Meitsav exams published a few weeks ago, Israel's fifth-graders garnered a national average grade of 79 in Hebrew, 69 in science and 57 in math.

The army's reading comprehension test administered to native-born Israeli conscripts corroborates the decline. In the mid-eighties, 60% of conscripts passed level 9, the level considered adequate by the military. Despite a hefty 28% increase in public spending on education per pupil between 1990 and 1997, the share of draftees passing level 9 in 1997 fell to 40%. By 2002, only 32% of the native-born conscripts were considered to be at an adequate reading level – half the share of just one and a half decades earlier.

Average level of achievement
24 OECD countries and Russia versus Israel*

Percent difference between each country and Israel
Israel = base

		Israel in first place	Israel in last place	Israel in last place	Israel in last place
		IEA 1963-64 math (13 year-olds)	TIMSS '95,'99 math, science (8th grade)	PISA 2002 math, science, reading (15 year-olds)	PISA 2006 math, science, reading (15 year-olds)
1	Australia	-41%	15%	20%	17%
2	Austria		17%	17%	13%
3	Belgium	-6%	12%	15%	15%
4	Canada		14%	21%	19%
5	Czech Rep.		18%	14%	13%
6	Denmark		5%	13%	13%
7	Finland	-18%	13%	23%	24%
8	France	-35%	11%	15%	11%
9	Germany	-21%	11%	11%	13%
10	Great Britain	-29%	10%	20%	13%
11	Greece		5%	5%	4%
12	Hungary		16%	11%	11%
13	Iceland		5%	15%	11%
14	Ireland		14%	17%	14%
15	Italy		4%	8%	5%
16	Japan	-0.3%	23%	24%	16%
17	Korea		24%	23%	22%
18	New Zealand		9%	21%	18%
19	Norway		10%	14%	9%
20	Portugal		0%	5%	6%
21	Russia		14%	6%	5%
22	Spain		7%	11%	7%
23	Sweden	-53%	13%	17%	13%
24	Switzerland		14%	15%	15%
25	United States	-45%	10%	13%	8%

* not including ultra-orthodox Jews in Israel

Source: Dan Ben-David, Tel-Aviv University.

At about the same time that the internal Meitsav outcomes came out, the PIRLS international reading comprehension tests for 2006 were published. Israeli 4th graders placed below all but one of the OECD countries (OECD is the organization of industrialized western countries).

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When the international scope is broadened to include math and science, the decline of teenage Israelis has been stark in comparison with 24 OECD countries and Russia for whom there exists expenditure data as well. As can be seen in the table, Israel's teenagers were ranked at the top of the developed world in the 1960s.

This is no longer the case, nor has it been the case for quite a while now. Since the 1990's American pupils have scored roughly 10% above Israeli pupils. Depending on the test, achievement levels of French and German children have been 11%-15% higher, British scores have been 10%-20% higher, and Australian scores have been 15%-20% higher. In fact, the children in every single one of the 24 OECD countries and Russia (as well as in many additional countries) have outperformed Israel's children.

Not only were achievement levels higher in each of the other 24 countries, education gaps within each of those countries were substantially lower than Israel's as well. In most countries, educational inequality was lower by a substantial double-digit percentage (see table). In the most recent PISA test, for 2006, published a few weeks ago, Israel achieved the dubious distinction of being the country with the most unequal education among every one of the 57 participating countries.

Educational inequality in each country

24 OECD countries and Russia versus Israel*

Percent difference between each country and Israel

Israel = base

		Israel in first place TIMSS '95,'99 math, science (8th grade)	Israel in first place PISA 2002 math, science, reading (15 year-olds)	Israel in first place PISA 2006 math, science, reading (15 year-olds)
1	Australia	-8%	-22%	-17%
2	Austria	-5%	-24%	-10%
3	Belgium	-18%	-11%	-7%
4	Canada	-18%	-26%	-18%
5	Czech Rep.	-15%	-22%	-7%
6	Denmark	-14%	-21%	-21%
7	Finland	-29%	-30%	-27%
8	France	-24%	-22%	-11%
9	Germany	-5%	-13%	-8%
10	Great Britain	-7%	-19%	-12%
11	Greece	-14%	-17%	-15%
12	Hungary	-12%	-19%	-19%
13	Iceland	-23%	-27%	-17%
14	Ireland	-6%	-26%	-21%
15	Italy	-13%	-26%	-11%
16	Japan	-13%	-28%	-13%
17	Korea	-9%	-36%	-20%
18	New Zealand	-7%	-16%	-10%
19	Norway	-15%	-20%	-13%
20	Portugal	-31%	-24%	-18%
21	Russia	-9%	-19%	-19%
22	Spain	-25%	-26%	-21%
23	Sweden	-13%	-24%	-17%
24	Switzerland	-11%	-17%	-14%
25	United States	-5%	-17%	-13%

* not including ultra-orthodox Jews in Israel

Source: Dan Ben-David, Tel-Aviv University.

It is important to emphasize that the Israelis tested did not include ultra-orthodox pupils, so the actual national level is even lower than that shown here, while actual educational disparity within the country is higher. Israel's education system has failed completely in comparison with each of the 24 countries.

The Black Hole

The education system is a black hole that swallows more than the children of Israel's future. It also swallows enormous budgets. The government as a whole, and the Ministries of Education and Finance in particular, have not learned anything from our own experience in the nineties. Israel's education budget ballooned relative to other developed countries while test scores continued their unabated fall. Nothing was learned from the experience of other countries as well.

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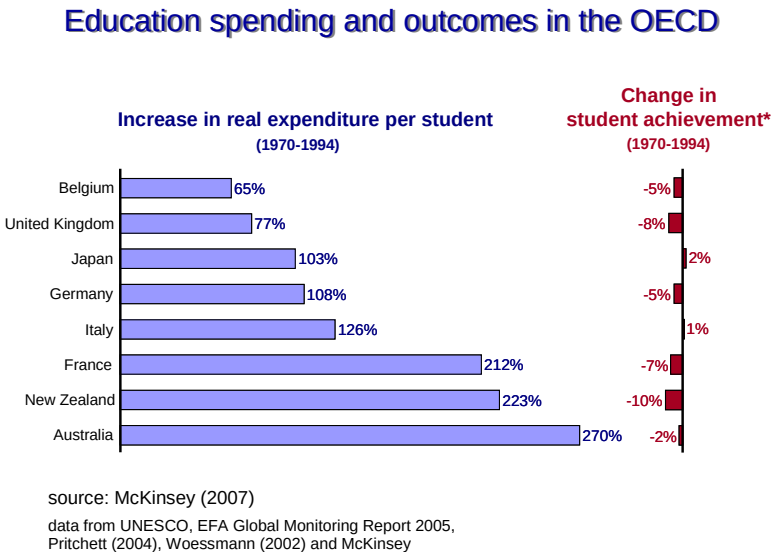
When Israel is compared with these same countries in terms of expenditure per pupil – after correcting for differences in living standards across countries, as was done for teachers' salaries above – it turns out that the problem in Israel is not a lack of money spent on education but a lack of sense regarding how that money is being spent. Israel spent more than two-thirds of the OECD countries in 2004 (the most recent year for which there is comparable expenditure information). On average, Israel spent 4% more per pupil than these 24 countries while providing a substantially worse education than each on of them. In short, while sufficient funds are important, they guarantee nothing when propelled into a dysfunctional system.

There are countries that spend a lot and achieve little and there are countries that spend little but are nonetheless able to attain a considerable amount. During two and a half decades, from 1970 to 1994, Belgium increased its expenditure per pupil by 65% (see diagram). During this period, there was no comparable improvement in student achievements. As a matter of fact, there was no improvement at all. Instead of rising, Belgium's scores fell by 5%. England increased expenditures per pupil by 77% while its achievement levels fell by 8%. Japan and Germany doubled their expenditures per student, France tripled its expenditures, and Australia nearly quadrupled its expenditures, but student achievements exhibited negligible change at best, and actual drops at worst



source: McKinsey (2007)

data from UNESCO, EFA Global Monitoring Report 2005, Pritchett (2004), Woessmann (2002) and McKinsey

Real Reform

Airy-fairy conventional wisdom so popular in the public debate is not a substitute for facts-based appraisal and policy formulation. The former yields delusional reform and superficial solutions while the latter requires an unbiased examination of the true underlying reasons for what has gone so catastrophically wrong in Israel's education system. Also required: a courageous leadership willing to face the facts and face the electorate.

Among the necessary first steps in any real reform is the creation of a culture of complete transparency with regard to all expenditures, achievements and administration. No thorough understanding of the facts can be forthcoming while an intentionally thick – and politically expedient – veil continues to obscure the functioning of the education system.

For example, a debate rages today about returning instruction hours to a system that is already funding more instruction hours at the ages of 7 to 14 than 22 of 26 OECD countries. The reason that Israeli schools are unable to provide sufficient instruction time, despite this, is due to myriad alternative avenues that exist for redirecting funds specifically designated for teaching hours.

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When the number of pupils per teacher in Israel exactly equals the OECD average, it is annoying – to say the least – that classes in the national education system (as opposed to the ultra-orthodox system, for example) are 50% larger than those in the OECD. Transparency can reveal the extent of discrimination and misappropriation. But leadership is essential for eradicating these problematic habits and establishing identical standards in each of the educational systems in every part of the country.

While a real reform would increase the education budget during the transition period, it would lead to improvements that would allow future budgets to align with western standards. A real reform must be based on three key ingredients: (1) the quality of teachers, (2) the quality of curriculums, and (3) the quality of management and organization at all levels. An improvement in just one ingredient without the other two will lead to a large waste in resources.

Talented teachers who are carefully chosen and properly compensated must be able to work with substantially upgraded curriculums that are much more focused on core subjects (reading, writing, arithmetic, science, English, and so on). Even then, this is not enough. The education system must make the connection between personal accountability and personal authority and it needs to utilize positive and negative incentives, as needed, to get people engaged in educating to give it their best. Unfortunately, a real reform of this type is not on the radars of anyone currently involved in education policy or strike negotiations in this country.

The dams built along the Tennessee river are still standing strong. Too bad the same can't be said for the education system built by Israel's founders two decades later.

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