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TEACHER QUALITY IN ISRAEL

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Teacher Quality in Israel

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Recommendations:

- Every Israeli student should be tested annually with a uniform national exam.
- Teacher training programs should be designed to improve student or teacher performance and should be given on the school premises. The Teacher Advancement Program (TAP) in the U.S. can serve as a model training program.
- Schools and their principals should have budgetary and administrative authority to implement teacher quality improvement programs.
- Schools and teachers that have students who achieve results above the national average in value-added terms, should receive increased benefits.

The Poor Results and State of Israeli Education

The fact that Israeli society is united on the importance of education is clear: every Israeli government makes education its second largest budget expense after security. Approximately NIS 26.6 billion were budgeted for government spending on education in 2006, or 9% of the general government budget. [1]

By consensus, the quality of education will determine in large measure the quality of Israel's future generations. Parents send their children to the state-owned and - managed educational system for a substantial portion of each day, and expect that their children will acquire the skills and knowledge to enable them to progress successfully through life. In purely economic terms, the educational system plays an important role in determining the skills of the future workforce, its breadth of knowledge and its acquired learning skills, and on a civic level, it helps determine whether Israeli citizens will have the knowledge and motivation to understand and participate in the democratic process.

In light of the importance of the educational system and the corresponding economic investments made, it is surprising to see how the Israeli system consistently fails to improve the relative knowledge and abilities of its students – a failure that has been uninterrupted for many years. It is ironic but perhaps purposive that in Israel there is (1) no true long-term monitoring of teacher effectiveness; (2) no measurement of the improvement or decline in student achievements over time; and (3) no relationship between a teacher's ability to teach and his or her wages or career advancement. Furthermore, the Israeli education system perpetuates, and some claim it even increases, educational gaps among different sectors of the population, and as a result, future economic and social gaps as well. [2] International data, and the relatively little data that has been gathered by Israel, demonstrate the low performance level of the education system, and results that constantly fall behind most other developed countries. [3]

The performance of the Israeli education system is even more surprising in light of the fact that Israel spends more on education in terms of per capita GDP, on the average, than other OECD countries. Analysis of the data shows that educational economic resources are

misallocated; a large part of the national spending on education comes from parents, and in fact in Israel the investment in primary and pre-primary education is below average. The problem with the Israeli education system is not necessarily a lack of resources, but rather the inefficient use of the resources invested and a lack of focus on what is truly decisive for students' future achievements.

Of all matters related to the quality of education in Israeli schools, the least emphasized over the years has been the quality of Israeli teachers. Much time and money has been spent on the number of students in classrooms and the curriculum. However, recent international research reveals that teacher quality has a greater effect on student achievement than any other school-based factor examined. Differences in teacher quality dramatically affects students' relative achievements; the most substantial impact is observed during elementary and pre-elementary years as a result of consecutive learning from high-quality teachers. The effects of good teachers are not only substantial, they are residual - learning under a low-quality teacher will make it difficult for a student to improve later, even if he studies later under a high-quality teacher. [4]

It is instructive to summarize recent research on this subject, present an overview of the current teaching force and student achievement in Israel and offer both short- and long-term recommendations on how to affect positively teacher quality in Israel.

Our major findings are:

- **Israeli students' scores are among the lowest in international testing**: Israel ranks 31st out of 41 countries in the PISA 2002 exams in math, and 33rd in science. [5]
- Israeli students' achievements have fallen over time, **from first place in the 1965 exams to the current 31st and 33rd.** [6]
- Israel's educational system preserves the educational gaps between strong and weak students and between weak and average students, while producing only half the percentage of excelling student as OEDC countries. [7]
- The effect of teacher quality on student achievement is substantial, especially for weaker students. [8] This may be one explanation for the persistence of certain social and economic gaps between the stronger and weaker segments of Israel's population.
- Indicators of teacher quality draw a gloomy picture when examined in Israel: most students in the Teacher Training Colleges would not be accepted, based on their test results so far, to most of the departments of regular universities. The average psychometric score of a student in a Teacher Training College is 520 – i.e., the lowest 15% of students tested.[9]
- Further, even within Teacher Training Colleges, the training courses for elementary and pre-elementary careers (when teacher quality has the most influence on future student achievement) attract the lowest-scoring students. [10]
- The Ministry of Education does not track effectively the professional disciplinary level of teachers or their teaching abilities after graduation from Teacher Training Colleges. One may well assume that teachers with a less than satisfactory level of disciplinary knowledge and/or a low level of teaching ability are being employed by the educational system.
- The Ministry of Education has deliberately avoided establishing a system able to

> measure student achievement over time, and the preparation of such exams has been left to the teachers at each individual school. Since no student is tested twice while he is in the system, it is impossible to measure the difference in a particular student's level as he progresses between classes. [11]

Each of these findings alone should be enough to shock policy makers in Israel. The quality of teachers is not measured, and, as data collection is designed, cannot be monitored. Teachers' effects on students are measured, if at all, internally within each school; it is therefore impossible to compare the quality of teachers in one school with another. Students in Teacher Training Colleges have had, for years, the lowest entrance exam scores in the academic system. Moreover, a shortage of teachers has resulted in Teacher Training Colleges lowering entry standards even more, as demonstrated by the elimination of the required psychometric examination (again, when the exam was required, students entering Teacher Training Colleges scored lowest of students applying to all other academic institutions).

Teachers in Israel receive a relatively low wage compared to other professions, and relative to teachers in other places in the world. [12] Career advancement is based on tenure and is not designed to give incentives for better teaching or for improving student achievement. This litany of failures regarding the quality of the teaching force in Israel has created a system that relies on a staff that is, on the average, below appropriate quality and that lacks the tools to improve.

When taken together, (1) data regarding the quality of the teaching force in Israel and (2) research demonstrating the importance of teacher quality for student achievement make very clear one of the major reasons for the poor performance of the Israeli educational system in recent years.

The Importance of Performance Measurement: The U.S. Experience

The way to measure teacher quality is by measuring improvement in student' achievements. Measuring the differences in student achievement in all classes in every school in the country, when students naturally change teachers annually, would make it possible to asses how a single teacher affects his students and whether he or she has taught them well. The assumption behind this method of measurement is that when graduating from one class to the next, the most significant change is the identity of the teacher - and the change over time, on average, it is the dominant factor in student achievement.

The entire state of Tennessee has administered a uniform achievement test every year since the early 1990s, producing a database that has been used for much research. This system was established as part of a state reform aimed at improving the education system in Tennessee. Policy makers in Tennessee reached the conclusion that it would be impossible to implement comprehensive educational reform without measuring outputs that allow for accountability in, and transparency of, the system's performance. [13]

Studies done on this vast database (containing over 3 million unit observations) has pinpointed cases in which performance deviates from the national average, and looked for variables that correlate with these deviations. The conclusion reached is that teacher quality is the element with the most critical effect on student achievements.

Teachers were divided into five groups according to their ability to improve student achievements over time. Teachers producing the greatest improvement in student achievement were classified in the top group, and those with the lowest improvement (or highest negative effect) were classed in the lowest group. The results and conclusions should shed some light on the problems of the Israeli education system:

- The effects of teacher quality can be separated from variables such as race, origin, socioeconomic status and parental influences.
- The quality of the teacher had the greatest effect in mathematical subjects.
- The residual effect of a teacher can be seen for four years after the student has left that teacher.
- When a student has an ineffective teacher, or a series of ineffective teachers, there is little evidence of compensation when he moves to an effective teacher in later years.
- Very effective teachers tend to be effective with all students. Very ineffective teachers tend to be ineffective with all students.
- The effects of high-quality teaching led to average income differences of 34% at the age of 40, according to one Michigan study (the Perry Preschool study cited below).
- Students who were schooled for four years by low-quality teachers had only a 15% chance of passing 8th grade exams. Students of high-quality teachers had a 60% chance of passing these same tests. [14]

The High/Scope Perry Preschool study was begun in 1962 in the Ypsilanti, Michigan, school district. [15] This experimental study was designed to test the long-term effects of high-quality early teaching, and to help children of low income families with a high risk of school failure avoid such result and its related problems. The study focused on a sample of 123 low-income African-American children who were assessed to be at high risk of school failure; 58 of them were randomly assigned to a program group that received a high-quality preschool program (ages 3 and 4), and the rest to a different group that received no preschool program.

Data was gathered annually on both groups from ages 3 through 11 and, again, periodically until today (the last data was gathered when they were 40 years old). The data revealed wide differences in education, income, involvement in crime and quality of living: The group attending the preschool program showed a 44% higher level of school graduation, with better results in language and intelligence tests through the age of 7, and in other tests through graduation (at the age of 19). An interesting finding is that the parents of the preschooler sample group had a better attitude towards their child's schooling. Thus, early intervention in the educational system, with high-quality and involved teachers, affected other school variables over time. In economic terms, the sample group showed a higher median annual income at ages 27 and 40, and a higher rate of employment than the control group (23% and 22% respectfully). Other significant findings show that the reliance of the sample group on welfare services is lower, their general health is better and there are fewer cases of drug abuse. Also, the sample group was substantially less involved in criminal activity.

Perry Preschool and other studies show that early intervention with an emphasis on high-quality teachers can have a crucial effect on a child's development. **The effects are so dramatic that for every dollar invested in the program, the return mounted to 13 dollars**.[16]

Recommendations

We see that investing in improving teacher quality produces thirteen-fold returns on the amount of the original investment. The Israeli teaching force desperately needs improvement and investments in this effort will be repaid many times over in overall economy, not to mention in the lives of Israeli schoolchildren. The first step must be to increase the accountability of the educational system by creating a basis for comparing teacher performance. It is illogical for schools to test themselves in a closed autonomous system, with few objective benchmarks for measuring improvement. This system prevents students and parents, as well as the teachers themselves, from knowing the real status of a student's education until the student takes the national Bagrut exam when he graduates high school.

It will be possible to begin improving the quality of Israel's teaching force only after a database that annually measures the achievements of students by means of uniform national tests is established (as is the case for the U.S.)

Teaching is a demanding job with low wages, and for the most part, teachers in Israeli schools teach out of a sense of dedication and commitment. The immediate obstacle to improving teacher quality in Israel is that the teachers in the system do not have the means to improve, and have no incentives other than their personal commitment.

Outside of Israel, various programs give teachers the tools to improve and offer a financial motivation to do so.[17] No such program can succeed without first increasing the independence of schools and tying wages to performance, rather than to standards unrelated to the students. (Teachers should be consulted and agree on such changes and improvements.)

The quality of Israeli teachers and the quality of their performance are severe problems with immense long-term repercussions for the future of the country. Without drastic steps to improve teacher quality in Israel, social gaps can be expected to continue expanding, and the quality of the future workforce can be expected to continue to decline as well. Not only are the average achievements of Israeli students dropping, but the percentage of excellent students is shrinking. Thus, externalities excluded, the very existence of viable, long-term stable growth is at risk. As a country that is reliant on its human capital, Israel should make its educational system an example for the world. This can be done only by making the system more flexible, by measuring performance, by empowering schools and principals, and by having system accountability. The place to begin immediately is the implementation of an ongoing, objective assessment of **every student** at every stage of the educational system.

[1] http://www.mof.gov.il/budget2006/mainpagin.htm (1 June 2006). [Hebrew]

[2] Tamar Kenenth-Cohen, Yoav Cohen and Carmel Oren, Comparative Achievements in the Jewish and Arab Sectors at Different Stages of the Educational System: Findings (Jerusalem: National Institute for Testing and Evaluation, March 2005); Chaim Adler and Nahum Blass "Inequality in Israeli Education," The Herbert M. Singer Annual Report Series: Israel's Social Services 2003, ed. Yaakov Kop (Jerusalem: Taub Center for Social Policy Studies in Israel, 2003), pp. 289-314, http://www.taubcenter.org.il/pages/publications_full_heb.html (29 March 2006). [Hebrew]

[3] The National Task Force for the Advancement of Education in Israel, *National Plan for Education* (Jerusalem: Ministry of Education, 2004), part 2, addenda. [Hebrew]

[4] June C. Rivers and William S. Sanders, "Teacher Quality and Equity in Educational Opportunity: Findings and Policy Implications," in *Teacher Quality,* ed. Lance T. Izumi and Williamson M.

Evers, (California: Stanford University Hoover Institute, 2002), pp. 16-18; William L. Sanders and Sandra P. Horn, "Research Findings from the Tennessee Value-Added Assessment System (TVAAS) Database: Implication for Educational Evaluation and Research," *Journal of Personnel Evaluation in Education* 12:3 (Boston: Kluwer Academic Publishers, 1998), p. 247.

5 The National Task Force for the Advancement of Education in Israel, *National Plan*, pp. 46-55.

6 Ibid.

7 Nahum Blass, "Inequalities in Educational Achievements from and International Perspective, or Why are the Last Always Last?" (Draft article), sent to the author April 2006. [Hebrew]

8 William Sanders and June C. Rivers, "Cumulative and Residual Effects of Teachers on Future Student Academic Achievement," *Research Progress Report* (Knoxville: University of Tennessee Value-Added Research and Assessment Center, 1996), found in Sanders and Horn, "Research Findings."

9 http://www.cbs.gov.il/publications/education/makav/knisa_oraa/mavo_knisa.pdf (14 June 2006), p. 11; Hana Ayalon and Avraham Yogev, *A Window of Opportunity to the Academic Dream* (Tel Aviv: School of Education and Faculties of Anthropology and Sociology, 2001), p. 42. [Hebrew]

10 Drora Kfir and N. Fejgin, "Characteristics of Those Studying for Education," *Dapim* 19 (1994). [Hebrew].

11 The tests are administered such that no student will be tested twice while he is in the educational system. Ministry of Education, http://cms.education.gov.il/EducationCMS/Units/Haaracha/Meitzav/ (28 March 2006).

12 http://www1.cbs.gov.il/shnaton56/st12_40.pdf (14 June 2006) ; Ruth Klinov, "Budgetary Aspects of the Dovrat Report," *Toward an Educational Revolution?* Dan Inbar, ed. (Jerusalem: Van Leer Institute, 2006), p. 75. [Hebrew]

13 Sanders and Horn, "Research Findings," p. 247.

14 Rivers and Sanders, "Teacher Quality."

15 Lawrence J. Schweinhart, "The High/Scope Perry Preschool Study Through Age 40," The High/Scope Educational Research Foundation, http://www.highscope.org/Research/PerryProject/perrymain.htm (5 April 2006).

16 Ibid., p. 4, calculating an average annual inflation rate of 3%.

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