PRACTICI INTERNAȚIONALE

EDUCATION SYSTEM IN ISRAEL: OPPORTUNITIES AND CHALLENGES

Orly NISSEL

Moldova State University

The Israeli educational system is comprised of Hebrew speakers and Arabic speakers. The system has had a major success after setting the targets for 2009 for improvement of achievements and it has been announced that its pupils have reached the top 10 worldwide in the subject of science in 2011. Israel, which has been reaching first places, started to gain distance from the top 10 in the last decade and even has deteriorated to the 25th place in the world out of 49. This positive turnover has taken place due to the change of attitude of the Minister of Education, Gideon Saar, who was elected to duty from 2009 to 2013. In his term, the study programs in science have been adjusted to international standards; hours, complements, budgets and many contents have been added. The study has been constantly accompanied by instructors – "teachers' teachers", going to training apprenticeships, formulating teaching sequences and Ministry examinations in which the knowledge and understanding of pupils have been examined throughout the year. Special kits have been designed which are called teaching-studying-evaluation kits, which delineate lesson sequences. At the end of the year, tests have been conducted all over the state in all age groups for examination of understanding and application. Studying has been focused and equal in both sectors.

Keywords: *international tests, TIMSS, Arabic speakers, Hebrew speakers, achievements, gap, success factors, gender.*

SISTEMUL EDUCAȚIONAL ÎN ISRAEL: OPORTUNITĂȚI ŞI PROVOCĂRI

Sistemul de educație israelian este format din vorbitori de limbă ebraică şi arabă. Acesta a atins succese majore după stabilirea obiectivelor pentru anul 2009 privind îmbunătățirea realizărilor; astfel, în 2011 elevii israelieni au fost incluşi în topul 10 la nivel mondial la subiectul ştiință. Israelul, care a ajuns pe primele locuri, a început să câştige în ultimul deceniu nivelul de top 10, deşi ocupa locul 25 în lume din cele 49. Această transformare pozitivă a avut loc ca urmare a schimbării de atitudine a Ministrului Educației, în frunte cu Gideon Saar, care a fost ales în funcție în 2009. În această perioadă, programele de studii în domeniul ştiințelor (orele şi numeroase conținuturi, inclusiv bugetele) au fost ajustate la standardele internaționale. Acest proces a fost însoțit în mod constant de către instructori – „profesori pentru profesori", care au realizat formarea de formatori. Ministerul, la rândul său, a elaborat teste de predare şi de evaluare a cunoştințelor elevilor pe tot parcursul anului. La sfârşit de an şcolar testele au fost aplicate în întreaga țară, în toate grupele de vârstă, în vederea evaluării cunoştințelor elevilor.

Cuvinte-cheie: *teste internaționale, TIMSS, vorbitori de limba arabă, vorbitori de limba ebraică, realizări, lacună, factori de succes, gender.*

Introduction

Since 2009, the state of Israel has been greatly investing in the improvement of teaching level of the subject of science. In December 11th, 2012, the Israeli educational system has rejoiced following the publication of the international TIMSS tests' results. This test is comprised of: earth sciences, life sciences, chemistry, physics, environmental studies and the resources and essence of science.

Despite the impressive results, there are still gaps between Jews and Arabs and between pupils from firm socio-economic background and weak one. Israel is a leading state in the level of gaps. Still, the improvement is significant and the pupils, teachers and the Minister of Education deserve a "well done"!

The main question in current study is – whether the new program from 2009 and the structural changes, would succeed in raising pupils' achievements in the subject of science in Israel, while reducing the gaps

between boys and girls. It should be mentioned that, after years of decline down the graphs in the grades of Israeli pupils in international tests, a success has been registered in the subject of science for 8th grade pupils, who have been ranked in the 13th place internationally (end 2012).

The new program and changes have caused the Israeli pupils to succeed in the TIMSS international tests in the subject of science that have taken place in 2011. The results have been published in Israel and concurrently worldwide. Minister of Education, Gideon Saar, held a press conference, in which he announced with great joy, the significant achievements of the pupils of the state of Israel in the subject of science; from 25th place out of 49 countries in 2007, to 13th place out of 42 countries in 2011. Hebrew speakers have reached 9th place in the world!

What are the TIMSS tests?

These tests take place every 4 years – 1999, 2003, 2007 and 2011. They examine the abilities of 8th grade pupils in science and math, around the world. The TIMSS examines the success of pupils according to the study program. The tests are designed on the basis of study programs while attempting to create a wide common denominator amongst the participating countries. In 2011, 240 thousand pupils from 42 countries have been tested. 151 schools have been randomly sampled. In Israel, 4,698 pupils have participated. In these tests the Israeli pupils have reached the highest achievement since Israel joined the international tests in the late90's in all subjects. "…The average of the achievements of Israel is significantly higher than the average of the participating countries.

Israeli pupils have made the largest leap amongst the group of countries with high achievements. A steep rise has been registered in the rate of high-achievement pupils. An improvement of dozens of points has taken place in the achievements of pupils as well as a dramatic improvement in comparative data. The improvement included all layers of the population and is mutual to the Jewish and the Arab sectors: Hebrew speakers – 530, Arabic speakers – 481, international average – 477" [5]. The TIMSS tests scale has been designed in 1995: 625 and above – excelling, 550 and above – high, 475 and above – mediocre, 400 and above – low, below 400 – below threshold (see Figure1, data from *National Authority for Measurement and Evaluation in Education, 2011*).

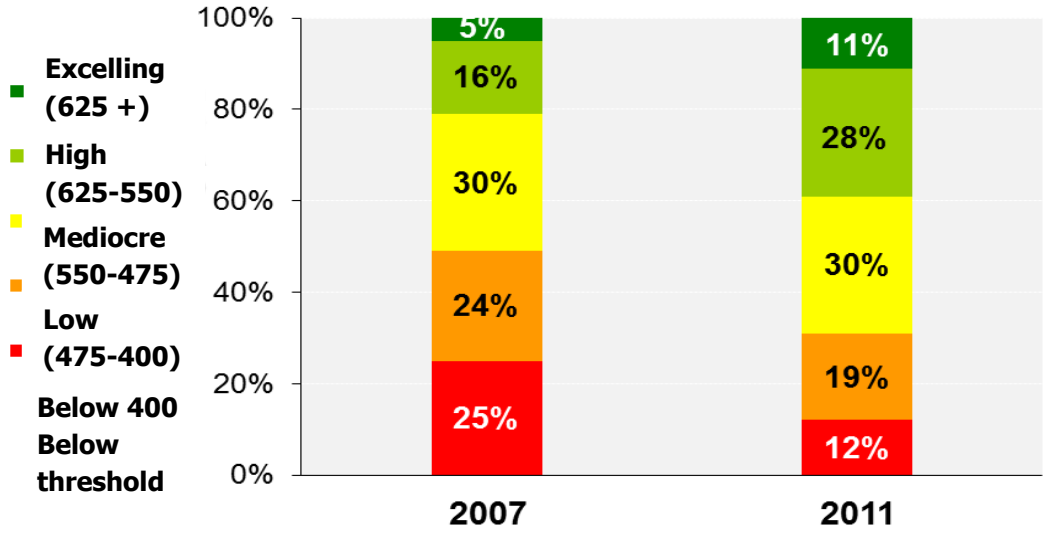


Figure 1. Rate of pupils in proficiency levels – 2007, 2011.

From these data it can be learned that between 2007 and 2011, the percentage of excelling pupils has significantly risen while the percentage of low and below threshold pupils have significantly dropped.

At the same time, it can be seen that between 2007 and 2011 the rate of excelling and high pupils has significantly risen amongst Hebrew speakers and Arabic speakers (see Figure 2, data from *National Authority for Measurement and Evaluation in Education, 2011*). The rate of pupils in lower categories has significantly dropped amongst Hebrew and Arabic speakers. The rate of Low and Mediocre pupils amongst

Hebrew speakers has decreased in favor of a rise in the level of proficiency of the High and Excelling (30%+15%). Amongst Arabic speakers, the level of Below-threshold has decreased in favor of a rise in the level of Mediocre. Amongst Low and Mediocre Hebrew and Arabic speakers, the rates are equal at 49%; however, the rate of proficiency of the High amongst Hebrew speakers has almost doubled while proficiency level amongst Arabic speakers has decreased by just 2% in favor of a rise of Excelling from 1% to 7%.

We can see that Hebrew speakers are leading in proficiency level as opposed to Arabic speakers. There are huge gaps in proficiency level between Hebrew speakers and Arabic speakers.

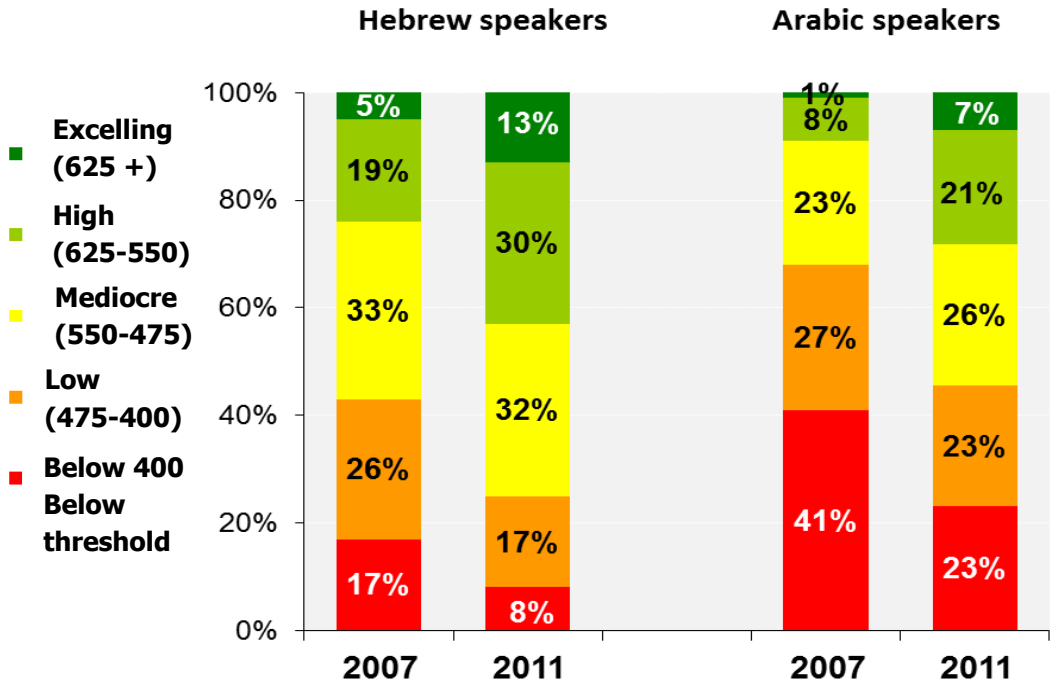


Figure 2. Rate of pupils in proficiency levels, by language sector – 2007, 2011.

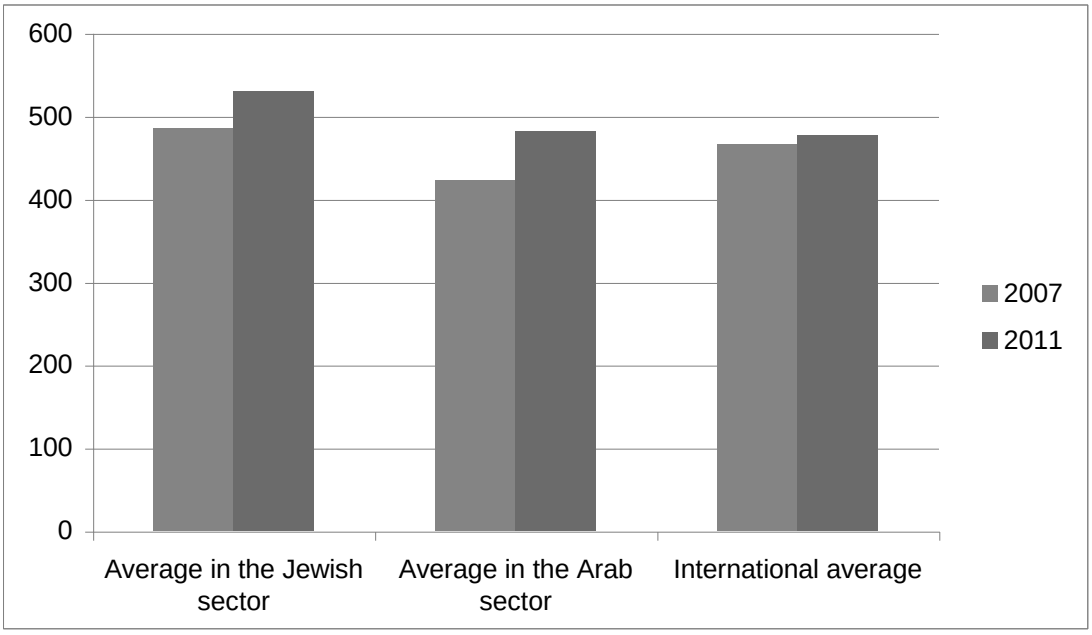


Figure 3. Achievements in science; a comparison of 2001 and 201: Jewish sector, Arabic sector and international average.

The achievements of Hebrew speaking Israeli pupils, who have reached the 9th place internationally, are seen in above table (see Figure 3, *Ynet, scale assemblage, Nissel, 2012*). The achievements of the Arab sector have surpassed the international average and reached 18th place worldwide. The gaps between sectors are still big, despite the big progress in achievements of Arabic speakers. As a result, Israel has reached the 13th place internationally (42nd and last place – Latvia) (see Figure 4, *Data from Kalkalist; data design, Nissel, 2012*).

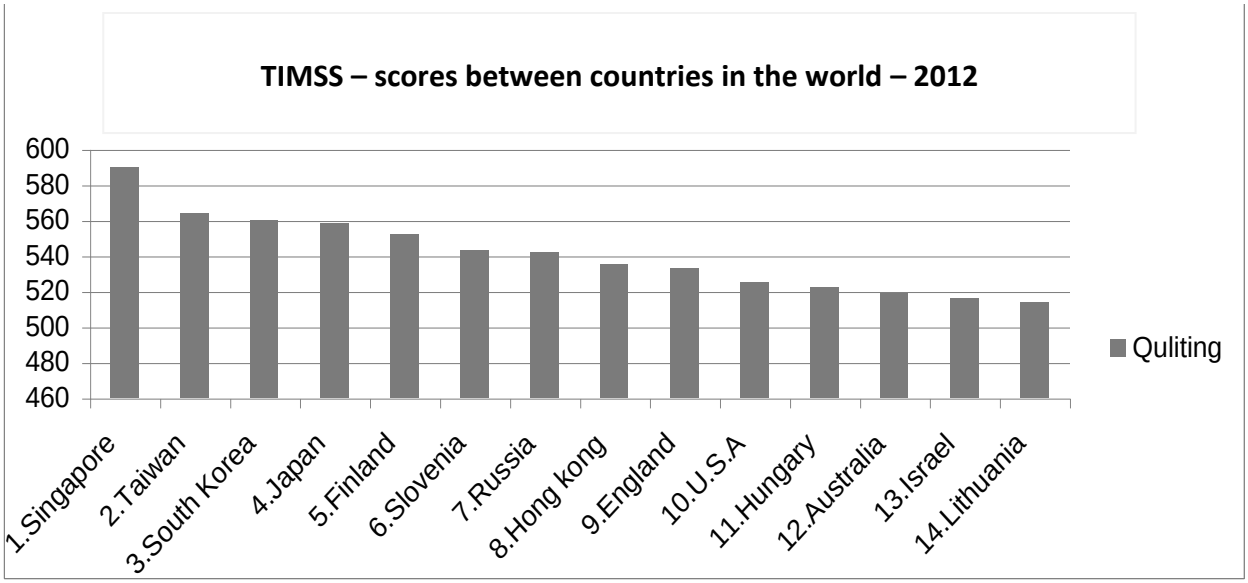


Figure 4. Comparison of TIMMS scores between countries in 2012.

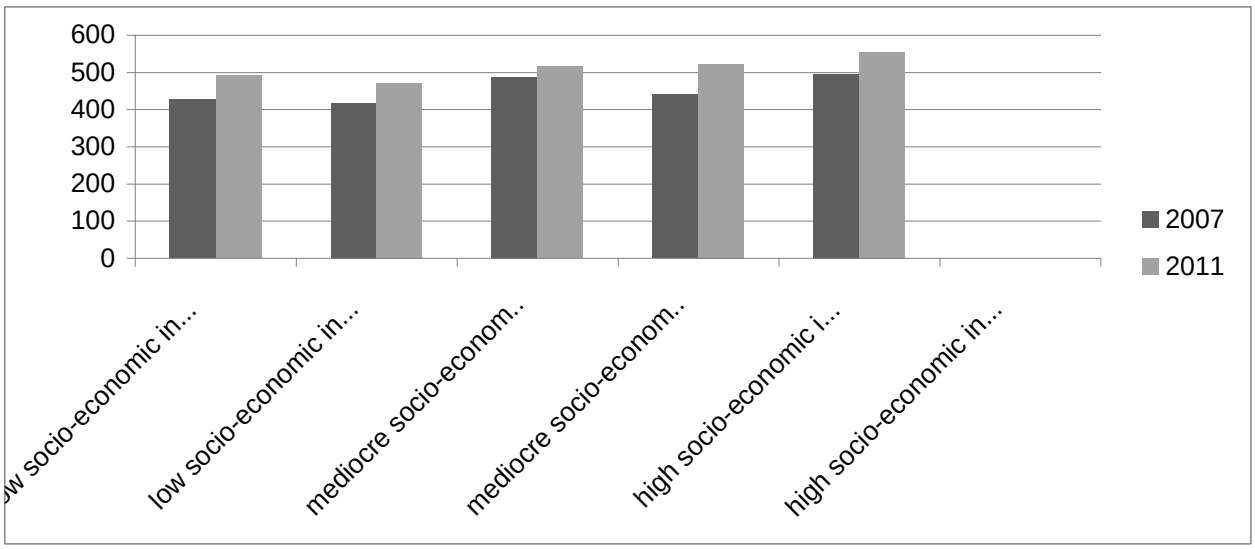


Figure 5. Comparison between TIMSS tests results by sectors and socio-economic status – 2007, 2011.

Despite the nice results, a rise of dozens of points and a score above the international average, there are still big gaps between Jewish and Arabic sectors. The gaps have not increased but they also have not been reduced. In the Arabic speaking sector, the high socio-economic graph does not appear at all. The gaps stem from cultural differences and the socio-economic condition (see Figure 5, *Nissel, 2012*). The positive change in grades in the Arabic speaking sector stems from change in the study program and studying according to the new program from 2009 and the addition of high budgets and hours.

Parallel to this, teachers undergo training apprenticeships and receive instruction just like in the Jewish sector. It is worth mentioning that Arabic speakers in the state of Israel have been prominent in high position

and scores in relation to all the Arab countries. Israel should proceed in improving the achievements and reducing the gaps between Arabic and Hebrew speakers in achievements and socio-economic condition. The state should invest in the field and purchase the required lab equipment. Should the gap be reduced, the international score of the state of Israel would advance to the top-ten [5].

Factors of success

1. Setting of measurable targets – from Jan. 4, 2009, the Minister of Education set forth the international tests as a target while stressing outputs. He has created an organizational culture based on measurable targets.
2. Huge investment – 15 hours have been allocated for each pupil for the studying of the subject of science as a core subject in Junior High school (7^{th}-9^{th} grades). In 10^{th} grade 3 hours have been added. In total, 18 weekly hours have been allocated per pupil in 4 years for the studying of the subject of science. Individual hours have been added as well. A teacher teaches up to 5 pupils (excelling or those with difficulties according to needs) and improving their skills. The individual hours attract an educational, study and disciplinary change, improve achievements and reinforce the reciprocal relationships between a teacher and a pupil [7].
3. A continuous study routine – a focused and consistent learning. The educational system operated without strikes as was in the past, strikes which have damaged the study sequence and affected results.
4. Change of the study program – adjusting the work plan for skills required in the international tests. In the past there have been subjects which have not been part of the study program and have not been studied in the school.
5. Much a hard work – the work of science teachers is hard and very complicated – meeting schedules and outputs. Obligates the school managements to accept an instructor – a leading teacher, and obligates all science teachers to undergo training apprenticeships. The system is monitored at all times.

Summary

Should be mentioned that the new study program, from 2009, has significantly improved the achievements of pupils in the state of Israel in the subject of science, in the Hebrew and Arabic speaking sectors! The unity in studying, contents and accompanying changes have brought about this significant change. Additional improvement is amongst the achievements of girls in relation to boys in the Jewish and Arab sectors.

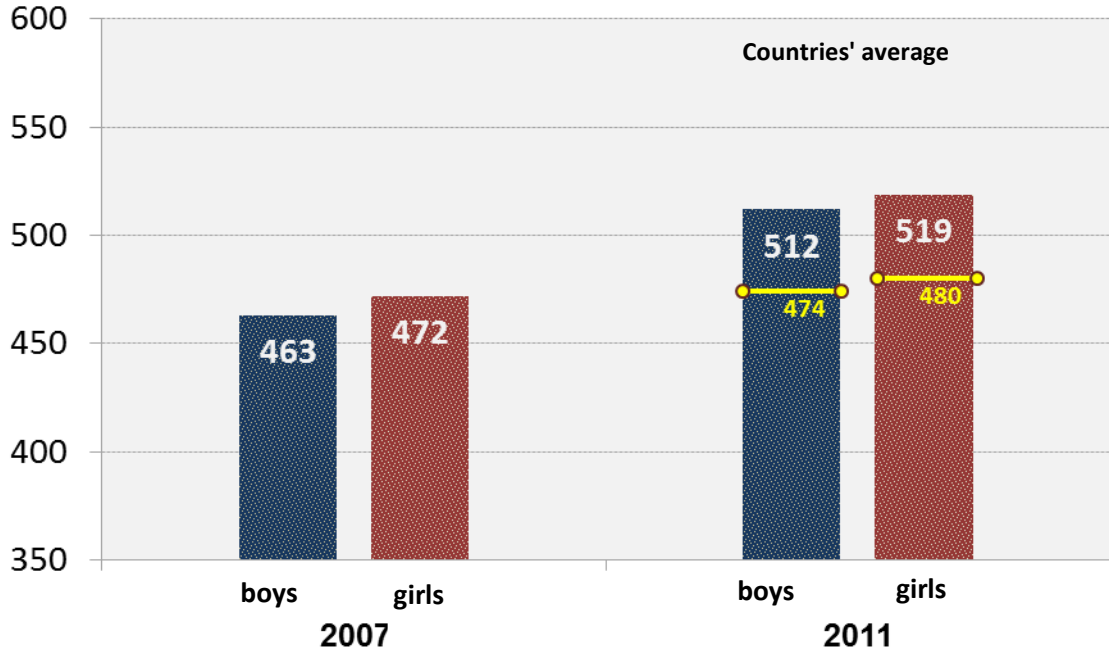


Figure 6. TIMSS results by gender – 2007, 2011.

We can see a gap in favor of girls and a rise of about 50 points in boys' and girls' achievements between 2007 and 2011 (see Figure 6).

From the graph 7 it can be learned that the achievements of boys and girls in the Jewish sector have risen, however the gaps are similar between 2007 and 2011. Amongst Arabic speakers, the achievements of girls are higher than those of boys, a gap which is slightly bigger in 2011 as compared to 2007 [1].

Success in tests stems from the hard work of teachers, teaching according to the requirements of the Ministry of Education, fulfilling schedules, the desire to be purpose-oriented and participation in training apprenticeships. The work of a science teacher is complicated. The teacher must teach and master in three subjects: biology, chemistry and physics. The teacher is under much stress and burden. The Ministry listens to the remarks of teachers on the grounds and learns from it.

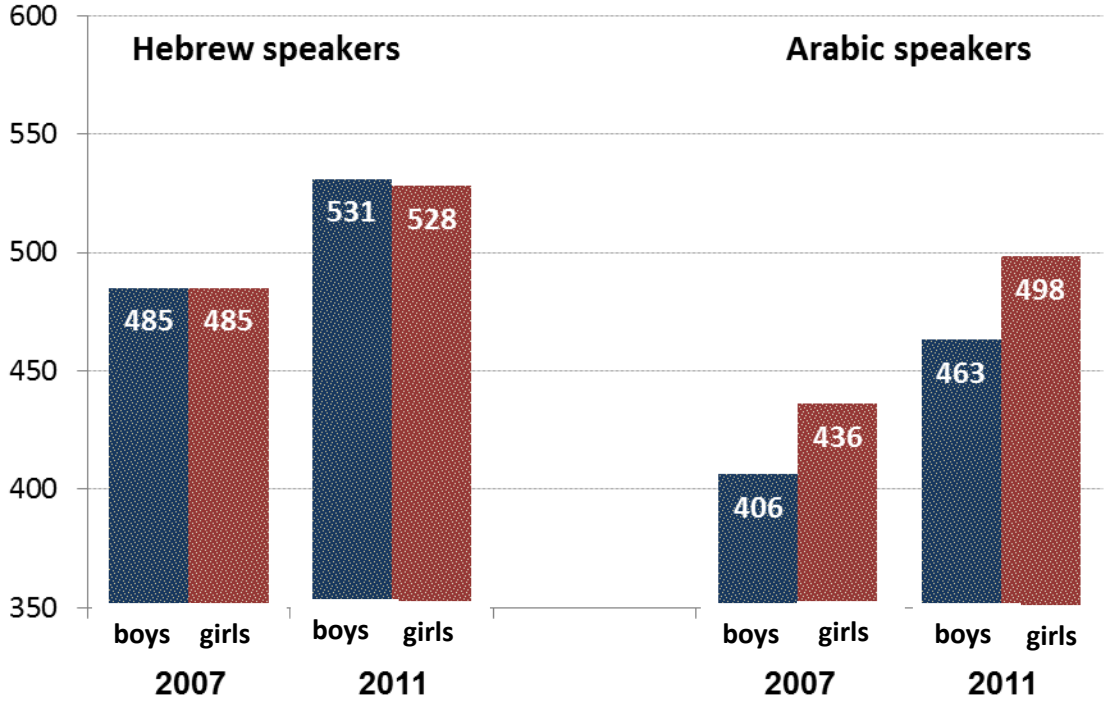


Figure 7. Achievements by sector, language and gender – 2007, 2011.

However, not all educational personnel in Israel are part of this. The former Minister of Education, Yuli Tamir [8], claims that an intensive preparatory work has been performed for the national and international tests. All countries in the world have a common denominator – achievement is above all. When preparing for tests, the results received effect a wrong reflection of the actual condition. International test are supposed to predict economic and social growth, but they have turned into a contest – which country better succeeds in them. To her opinion, pupils should be prepared for life, not for exams; in her term, she refused to prepare pupils for these tests [8]. Several principals from prestigious schools maintain that the international gradation obsession diverts the attention from subjects of no less importance; the system must satisfy the needs of education required by the Israeli pupils. Others claim that the Ministry has invested a fortune in this success which was in the place of other important study subjects in which pupils are not proficient, such as the History of Israeli People and Geography [2].

It is worth mentioning, that 90% of the pupils sampled, have participated in the tests [1]. However, 22.6% of the relevant age group of pupils of the religious orthodox sector have been excluded from the study and have not been tested, as they do not study the core subjects. This population comprises 40% of pupils in the state, who are funded by the state. The rate of participants from other countries in the TIMSS is about 95%. Not a single one of the many participating countries approaches such a high rate of non-tested population the likes of Israel. Therefore, some consider the celebration and the improvement of achievements as a sort of illusion [9].

In February 20, 2013, the High Court of Justice obligated the Ministry of Education to initiate sanctions against the orthodox population: if they do not formulate a program for international tests and Meizav tests within 100 days, they would not receive funding from the state budget [4].

As an instructor on the grounds, I can attest that the success stemmed from a consistent and systematic work. The instructor accompanies the schools 4 years in a row, is aware of any problem, question or request,

knows well the teams, strengths and weaknesses and promotes and helps the teams at all times. Everything is reported to the school principal and the Ministry of Education. The monitoring is personal and tight. The Ministry controls the activity in schools and tries to improve learning by assigning written assignments to pupils, tests for location of knowledge and practice by tests of the Ministry. The practice takes place throughout the year. The style of the questions and the character of the tests are constantly revealed for pupils' practice and familiarity. From 2009, the teachers study the program and the learning advances and improves. The results have been impressively realized in this test. The instructors contributed a lot to the change and the success and therefore they are called Change Leading Teachers ("Mamash", in Hebrew acronym).

Bibliography:

1. BELLER, M. Israli achievements in an international view, the TIMSS tests. In: *National Authority for Measurement and Evaluation in Education***.** 2012 http://cms.education.gov.il/educationcms/units/rama/mivchanimbenleumiyim/timss_pirls_2011.htm
2. COHEN, SHOSHI, MAFMAR, *TIMSS results analysis, science and technology*. Hanukah convention, Weitzman Institute. 2012
3. OFER RIMON, TIMSS scores, science and technology convention. Weitzman Institute. 2012
4. www.kikarhasabat.co.il
5. SAAR, G. Press conference, Minister of Education, Dec. 11, 2012.
6. Kalkalist, Ynet – concentration of the TIMSS tests results; graph design by Nissel, O., 2012.
7. Free lesson, the individual hour, 2012.
8. Y. Tamir, Maariv – Dec. 12, 1012.
9. Central Bureau of Statistics, 2012.

Prezentat la 03.06.2013