### The Connection between Economy and Education (Ravit Amar)

Everyone knows about the sad situation of the education system. Far-fetched ideas for reforms are heard frequently. The system is being rehabilitated\_constantly. The main question is: what is the nature of these reforms? What is their goal? What are the ideological roots of these reforms? Who do they serve?

Within two decades the social-economic regime has completely changed in Israel. The social-democratic state that wasn't without fault made way to the extreme neoliberal regime which places the market economy in the center of economic performance and renounces the state's responsibility to supply vital services to the population: education, health, culture and other infrastructures. It is about farreaching, ideological and structural changes supported by global processes. These changes were accompanied with a large increase of inequity of division of incomes, in an unprecedented expansion of poverty rates among workers, the exhaustion of middle class, the deterioration of working conditions in the markets and the deprivation of many of the social rights that were in the past a public domain. The ongoing budget cuts in resources destined for education, high education, health and welfare is mainly ideological. In an accelerated process of privatization transferring the nation's assets into the hands of a small group therefore a big centralization has formed in the hand of so few people. Since the following discussion wishes to focus on these developments on education and on the society in Israel, this background will suffice. Yet. It is important to add the following remarks:

1. The extreme neo-liberal thinking that has taken over the public discourse in an ongoing process of harsh convincing done by political parties, unilateral

communication sponsored by the big capital and the intensification of the connection between capital and rule. The voice of those who think otherwise is almost not heard.

2. The question is how is it possible to explain the fact that the weak population damaged by this radical policy keeps supporting its executers, was being discussed in many books and hundreds of articles. This is not the place to discuss this. Yet, it is important to emphasize that the processes done in recent years are not understandable to the public. They are dim and their intention is hidden from view. The old public hasn't quite absorbed yet the crash of the welfare state and refuses to believe that the current regime is not interested in providing public services. A wide immigrant population which thinks that there is no connection between Stalinist Communism and rampant Capitalism, does not ease the development of political consciousness. Other sectors are not connected to this for other reasons. We will mention the Kibbutz Movement which gave up with almost no battle on its political-social leadership. These factors and many others enable this way or other the change of values in the Israeli society.

### **Education as Semi-Public Product**

In the following we will discuss the influence of structural, budgetary and ethical changes of the education system and the future ramifications of the education policy and the destruction of higher education on the future of the Israeli state. There is question about the education system in Israel being at the bottom in terms of the human capital it produces. Larger classrooms, discipline problems, a big rate of kids

from poor backgrounds who don't get appropriate growing conditions and find it difficult to function at school. Many teacher with poor cultural infrastructure, a result of many years of neglect, inadequate training, low wages and low prestige. The students complain about boredom, violence and lack of systemic teaching. Culture, values, intellectual thinking- all these are mum's the word-unmentionable. Truth be told, the education state reflects the face of society of immigrants which is materialistic, crumbling, and poor in culture and values where inequity is the highest in the western world where million children and a third of the employees are poor. Not everything is a result of cutbacks, and not everything is a question of budget. A rampant market economy, renouncing responsibility of the population's fate and breaking social solidarity accelerate the deterioration of the educational system, but there are other factors as well. Everyone is aware of the gloomy situation of the educational system. Ideas of far reaching reforms are heard constantly. Attempts to recover the system are being done all the time. The main question is: what is the nature of these reforms? What is their goal? What are their ideological roots? Who do they serve? The subject is complicated and similar to other domains like health and high education the real goals are hidden from view. Few notice them and sometimes see them after the damage was done. The destruction of research universities, brain drain which will lead to the destruction of the scientific infrastructure of Israel. This is one important example. The central claim presented here: the political system in Israel especially the Ministry of Finance uses the low point the education system is in to instil structural changes which are essentially ideological, neo-liberal. The point is to privatize as many functions in the system as possible, to instil administrativeeconomic considerations as a substitute to humanistic education, to hurt the teachers' occupational status, to change values mainly to train people who will not challenge

the existing social order and will basically be "the cannon fodder of globalization". Reforms as these and other have already been tried in other places and the results are known. To emphasize, it is about a conspicuous change of values that serves the strong groups in the Israeli society whereas society is crumbling down they are not interested in funding the poor people's health and education. The economic theory distinguishes between two kinds of public products: pure public product and semipublic product. A pure public product is something that cannot be divided (national security, parks or street lights) that cannot be prevented from people to use (side walk, traffic light) and mainly if the government does not provide it, the markets will. The battle in air-pollution, guarding the quality of water and the beaches, public parks etc. a semi-public product is a product that if the government does not provide it, the markets will provide it, however in a different format. If the government weakens or reduces the public health system, the market will offer private health services for those who can afford it. Those who cannot afford it, will receive minimal health services of poor quality. If the government keeps hurting the public education system and enables the development of a private education system for those who can afford it, most of the children will receive a poor quality education with all future ramification of future growth and future quality of life (Zusman, 2009).

## **Investment in Education in the Global World**

Investing in human capital is one of the central factors in encouraging economic growth and improvement of quality of life and standard of living. Israel lacks natural resources and its welfare and future lean on its human capital. In the meantime, everyone takes pleasure from the quality of the Israeli and ignore the poor quality of the education system, from brain drain and the decrease in the quality of the graduates from high education institutes. However, it is all in the short term. Israel is still

reaping the fruit of investment in education, research and development of the army and universities, in the past before a decision to hurt those systems has been made. The damages done due to this policy in the recent year to universities, will lead to gradual loss of the relative advantage Israel has in science and technology. When the damages are verified it will be very hard to fix them, not even by bonuses to scientists who left the country. Since investment in human capital is the key to all plausible solutions, it is imperative to strengthen the connection between the global processes and the adoption of new educational reforms which change the education and serve the business sector that wishes to infiltrate a territory that was locked so far; the heath and education sector. That is to say, it is important to understand that educational reforms that grow in other places in the world, have ideological roots, but they tend to offer a completely different set of values than it used in the past. Whatever happens and not only in education is not different than those developments. It is about two contrary approaches: those who think that a logical solution is a massive, public investment in human capital in scales never seen in Israel before: a massive support in research universities, acceptance of scientists who wish to return from abroad and research budgets for universities and security system. Smaller classrooms, highly qualified teachers who will feel it is worth their while. Developing cultural infrastructure. All this in order to create so qualitative manpower that will enable to preserve Israel's relative advantage for more decades and will enable to establish a western society that will be plausible while expanding jobs. This idea, one way or other, appears in the European public discourse every time they debate the question what will happen to occupation in the western world when all the jobs flow to the east? But here, who will dare suggest that the state will try to preserve the relative advantage in science and technology, will rehabilitate the universities of research in

order to prevent brain drain, to integrate young children from wider layers of the population during an essential upgrade in the education quality? This goes against the hegemonic point of view of the economists:" how will we fund this?" they will ask. It is possible for example to reduce taxes and VAT, but who will agree to it? But the offer side of economy is celebrating its victory. And who will dare protest. Those who reduced their marginal tax will hurry and upgrade their cellphones and increase the corporation's profits. No one is aware of the fact that with this money health, education and be provided and secure the future. Even when we do understand it, the pressure to reduce the public investment in education and welfare is major. On the other hand, in trying to attract investments into the sector, whatever there is is the human capital, earning less than a parallel human capital. How will this controversy be settled? By importing professionals from India for example?

### Globalization and educational reforms

The knowledge that the decrease in education endangers the future of Israel is shared by many. The argument is about the solutions and ways to improve the quality of education of wide groups in the population. In the meantime we are swamped with suggestions for reforms involving the crème de la crème from the business sector who think that it is possible to turn the school into a well-managed business firm and therefore to achieve a better high quality education. It is important to understand that these offers do not operate in a void. They are motivated by economic interests of the business sector and are an inseparable part of global processes serving mainly those who enjoy those processes, meaning, those who benefit from the globalization. Moreover, the suggestions for a reform in the educational system and high education

reflect a significant change of values regarding the essence of education, especially the heavy pressure the business sector puts on governments to take over sectors that haven't been "conquered" by them: education and health. In the background there is the will to train people to fit the global labor market and will not undermine the current order. In other words, the changes in global economy influence the targets, the quality and the structure of educational organizations. New values receive recognition when in fact it is all about instilling business values into the educational system in order to make profits. The values of the humanistic education system clear their place to a different set of values: emphasis on technical qualifications, avoiding development of critical thinking, research and analysis that might challenge the new values. Standard thinking and closed tests. Behind all this stands a teacher who most of the time deals with violence and reporting to his superiors. A teacher who must always test his students and not teach them. The teacher needs to cover technical material but not impart culture values. To be afraid of being fired and not deal with something which isn't technical. On the other hand, the students are bored and waste their childhood in cultural desolation, in disinterest and in a human emotional vacuum. All this happens when the faults of the public system intensify due to budget cutback and create a feeling that it is natural to expose the system to the market forces. What are those values who come to replace the humanistic education? Why do they receive a sweeping support? The main reason is that the real goals are not clear and things do not look appropriate. In order to grasp the essence of the changes we should ponder the cultural ramifications. To demonstrate we can talk about the following principles:

The responsibility of the individual

Parents' choice; efficiency

### Accountability

### Quality control

#### The student as a consumer

The communal model to most of the reforms around the world, focuses on turning education into a product, by increasing tests, by standardizing tests and developing standards. Meaning, focusing on qualifications relevant to the labor market immediately and less on creativity and culture skills. The main characteristics of this approach are: an ongoing cutback of the public sector budget, including education and health; decentralization of authorities and budget; privatization and out-sourcing starting with supply of services and end with developing curriculums, closing "inefficient" programs directed straight to the needs of the business market and sector; the expansion of the use of tool for e-learning. Creating "prepared packages" of courses by companies for profits, which see the education as "negotiable" product.

Empowering the principal. This process is the beginning of privatization of education by an ongoing choking of the public education system, claiming it must become more efficient. The ongoing cutback of budgets destined for those purposes emphasizes the difficulty to deal with strong economic interests wishing to qualify a suitable manpower for the global labor market. Decentralization and privatization in education led to the result of poor peripheral communities are not able to run a local policy, to get good teachers and to pay good salaries. Thus, if governments keep cutting back in education, significant parts of the population will not acquire human capital enabling to integrate in the global markets. In Israel, this process will lead to the decline of the advanced industries, to brain drain, to a decline in the capability of competition in the market, to the decrease in salary and renouncement of traditions and local-historical

culture values, to breaking of solidarity and to social crumbling. The government's wish to renounce the responsibility for the education causes big parts of the population to move downward and join the poor. Children from these families don't stand a chance to acquire human capital. On the other hand, the groups that can move themselves easily or have the right skills for the global world, enhance their status and disconnect themselves from the other groups. Whoever thinks otherwise than those who worship the corporate market economy emphasizes the children's needs out of humanistic point of view. What do children need? Intellectual wealth, systematic thinking, a combination of academic excellence, with relevance to their lives;

Critical thinking

Hope, the possibility for change

Government budgeting

Reducing the size of the classroom

New resources especially financial and intellectual in order to change the neglect pattern of many years. An appropriate salary for teachers, a free time for reading, teacher professional training and planning; renovation of investments in buildings, equipment for labs and libraries; culture studies: art, music and dance and more of the above are a part of the argument about the future of the public education system, about health, environment, welfare and mostly the argument about which society will exist in the corporate Israel, a country which scares away the best of her sons, which is cruel to its citizens, renounces its responsibility to them, exploits its workers and denies rights from the poor and the old. Another important question is what the chance is that the injured population will commit a political change. But this is a question for historians.

### The Education System as A Social-Economic Lever

Gloomy economic data regarding the high rates of poverty and inequity plus low work productivity in the Israeli sector raise the question about the function of the educational system in Israel. In this economic surrounding a strong and effective education system is needed, one that will impart high quality education to its students an education that will enable them to fit in the labor market and make an economic contribution to the Israeli sector. The grades of the international tests of Israeli students indicate that the education system is far from being where it needs to be. And similar to the economic data, they show a big rate of weak students and big gaps between the students. Research evidence show a close relation between the quality of education and sectorial economic data, something that sharpens the concern to the future of the Israeli sector. In view of the fact that Israel has a small labor market which doesn't enjoy many nature resources, the importance of human capital rises, one that needs to be one of the leaders of economic growth.

### **Research Question**

Therefore the need for a research that will shed some light on the question how the education system can contribute to improve the human capital in the Israeli sector and therefore make an improvement in the economic rates in the sector. The issues consisting the subject are different and varied: what should the education system impart to its students? What is needed for that? What is the importance of the teaching force on the matter? Where do the big opportunities lie? And more. Good answers will put Israel in a good place as a leading system which sets example to a system

which knows how to get out of crises and to learn from them. Such a system will be a powerful lever to a strong society with strong economy.

In this project we will try to suggest new directions for possible answers to the big questions troubling the education system both in terms of the wanted policy and in terms of the rest of the wanted research to keep expanding knowledge and expertise on the relevant subjects to the human capital in the Israeli sector. Due to complexity and the need to look at it from a different angle, wider and including educational, economical and administrative aspects a few interesting finding have risen. In terms of skills, abilities and knowledge seven topics important in particular have risen: independent abilities of learning and problem solving, a wide knowledge of many disciplines, controlling the English language, comparative and critical thinking, the ability to express oneself in writing, mathematical knowledge, civilian and ethical awareness. Also, according to the experts interviewed here there are a lot of deficiencies in the expression abilities of graduates of the education system, unsatisfactory control of the English language, a poor general knowledge and an artificial knowledge of disciplines. Lack of perseverance, lack of initiative, and the will to work hard. The quality of the teaching staff is a major factor in this equation. All of the above mentioned need to be strengthened. Also the ability to persevere needs to be strengthened. These things need to be strengthened in two ways: both in the level of studies and the level of teaching methods. It requires efforts in research and development, but due to the need of the Israeli sector it is a necessary and lucrative investment.

The policy of research and innovation in light of the fact that education is characterized by many questions and few answers, almost in any educational aspect, indeed the research and innovation policy is essential to the education system aspiring to be a leading system. This kind of policy will enable to test new ideas and new curriculums which will be a platform for experiments and will gather all information. Therefore it will be possible to accumulate all the knowledge that will turn the education system into a leading system one of a kind in the world. This project deals with the question how an education system can enhance and improve the human capital in the sector and turn it into the leading system in the world. Because of the magnitude of the issue it was decided to perform a primal research- a research that will include collection of opinions and ideas of a variety of experts and integrating the essential points. 40 of the experts come from the area of economy and management, education, human resources, manpower, science, technology and innovation, sociology and psychology, political science, public policy and more. Most of them hold senior positions in the public sector and the business market or even high researchers in high education institutes. Some of them are experts in human resources and manpower from the industry and the army and some of them are experts in a certain area due to their ongoing work. The combination of knowledge and insight presents a wider and more interesting picture about the things that need to be done in the education system to make it the most progressed in the world and its graduate the most productive manpower who will enjoy the fruit of their labor and so the Israeli sector. The project deal with several topics: first, it tries to focus the discussion on the question of skills and abilities required from the graduates of the Israeli education system. The project also deals with ways to achieve the latter: the teaching force needed for that, especially ways to recruit a high quality manpower that will lead to development and progress of the human capital of students in the system. Finally, the project deals with the macro issues of the system- an issue that with the right treatment will lead to a significant quantum leap in the education system and its

capability to foster and promote the quality of human capital in the education system. Presenting the system as one which is supposed to serve the Israeli sector it may imply that its central goal is to train workers. In fact, thus project does focus on the contribution of the education system to the economy, more than its valuable and social contribution to building a strong and valued society in Israel. Although, we it into a tool for producing workers or to a training system pure disapprove turning and simple. Although the way we look at it in a wider economic angle it isn't enough to underestimate the other goals of the education system. The answers and Ideas we received from the experts interviewed for this project related to "classic" educational matters as well such as the importance of the teachers, the quality of teaching and the necessity to focus on each and every student in the education system both on the micro level in which every student will enjoy a teacher who will take care of his development personally, and on the macro level in which the investment will be in the low social-economic students and to enable their development, a thing that will contribute to the sector's growth a great deal. One of the conclusions we reached during the project is that there is an overlap between the sector's needs and the values of education. The central problem relates to the implementation of the conclusions and not their definitions.

### The quality of the learners in the school

Looking at the grades of Israeli students in international tests compared to other states can shed light and support the claim about having a low starting point of the quality of learners getting higher education and therefore the failure in the elementary and junior high education system. The education system in Israel has been taking part in recent

years in international tests on behalf of the OECD and the IEA (International Estimation Association). These tests examine literacy- the ability of reading comprehension, math and science. The most comprehensive test is The PISA test (Program for International Student Assessment) being done by the OECD in a periodicity of one to three years. The purpose of the test is to check to what extent are 15- year-old students ready to the adult life, and to what extent they have thinking tools and skills which enable them to cope well and efficiently with their surroundings. The test examines level of literacy in three areas- reading, math, and science. The results of the PISA tests conducted in Israel in 2009-(are about to be published in 2013) do not show excess excellence. Israel was rated in the 36<sup>th</sup> place in reading and 41<sup>st</sup> both in math and science. All this out of the 64 states that took part (see chart 1) in the three areas Israel is clearly under the average of the OECD. Disturbing is the state of the Arabic speakers in the Israeli education system, a subject we will discuss in the future. The problem of these results is even more prominent due to the findings that show that the rate of honors students is significantly lower than the average of the OECD. The average grade of the highest level (the top 5%) is also lower that the parallel level in the OECD. It should be noted that the results are relatively consistent throughout the three PISA tests Israel took part in in the years 2002, 2006, and 2009. It is tempting to say that the results do not reflect the value of the human capital of the students' population and that the connection between them and economic data is rather weak. Tempting but wrong. Professor Erik Henshiuk, and education economist from Stanford University showed in a series of researches with different researchers that there are close relations between the international tests and economic growth. Henshiuk and Washman (2010) discovered a clear correlation between the states' achievements in the areas of math, science and reading and the

differences in growth rates in those countries. In the state of the nation report of Taube Center, a calculation has been done by the statistical model the two built. This showed that an improvement of 50 points (half a standard deviation) in these areas in the 80<sup>th</sup>, would have risen the GDP per person is 41\$ billion a year compared to the state of Israel in 2010 (Taube Center, 2010). This approach of examining the connection between international tests and economic products was firstly presented in Henushik and Kiomko's article in 2000. The two researchers found that the grade results predict economic growth better than school years variant that was considered the most important variant. The two, in fact, distinguished between the quantity of education and the quality of education and found that this distinction yields higher correlations than education for economic growth. And yet, although there is a statistic connection between the variants, it is not enough to necessarily conclude causality and the direction of the connection, because if quality affects education it could be the other way around: countries which enjoy high GDP per capita, can impart a better education to their students. Also, there may not be a direct connection between the variants and one variant may affect both (for example: a culture of work and productivity encourages learning and economic product). But, Henuishik and Washman (2012) tried to demonstrate with econometric means, that there is causal connection between the two: that the level of education expressed in international grades affects its growth rates. The two examined 64 states for the duration of 40 years and found that the connection between the grades in the international tests and growth has been economically stable over time and samplings of different states. Also, the two showed that the grades in the international tests predict the growth results of the country in the long run which raises the probability for causality. In addition to the finding that financial investment in education doesn't increase the results of the international tests (Hanushek, 2002). Another interesting finding of theirs is about salaries of the migrants in the USA. No connection was found between 51 salaries of migrants and the average grades of the international tests of the country they came from. But, for the migrants who were educated in their country of origin (260,000 migrants), it was found that for each standard deviation higher in the average grade of their country of origin, their salary increased by 16%. This datum is similar to the one published by Hanushek and Washman in 2009. According to it, each rise of a standard deviation in the average of the grades in international tests, yielded returns of 19% a salary per worker in the USA. These findings emphasize the importance of quality in education and the returns of it both for the individual and the state. The international tests and especially the PISA, are a certain reflection, general and not accurate of the state of the human capital in the school and a certain measure of the cognitive abilities of the students in this state. In light of the gloomy economic data presented here and the weakness of the education system in Israel reflected in the grades and in light of the findings indicating a close connection between the education system and economic growth, a need occurs to refer to the education system in the strategic- economic aspect and to examine how it can improve the human capital in an optimal way. It is about an economic and educational purpose as one that will contribute to the sector and the citizens of the country; creating a leading education system that will contribute to the skills and abilities of its children, will create a value for each individual, will enable a social mobility to populations suffering from economic hardship and will decrease inequity in society. Independence-self-study, problem solving "a can do attitude" and initiative (this is one of the common abilities employers and principals noted in the beginning as an important ability for a worker in an organization). Many employers noted that this ability is more important than any

disciplinary knowledge, any college degree and previous experience. The ability includes three central components: the first is the ability to learn and know a new knowledge domain without proper guidance. The ability of the worker to learn new things such as regulation or a new technology (in a constantly changing and renewing world this is a critical knowledge). No wonder that a number of employers said that they were looking for workers who "know how to learn". The second component, based on the first component is problem solving. This is the ability to handle new situations, mostly complex ones requiring an unusual and unknown dealing needing some kind of learning in order to handle it successfully. The ability to handle these situations successfully is valuable to the employer and the organization. The third component is the ability to initiate and create things beyond the basic demands of the job. This ability requires systemic understanding and the will to create added value to the organization/department/ team. A worker who creates value rising above the required value is a precious asset to the organization and the sector. Knowledge of other domains of interest with emphasis on world knowledge and transnational topics - many employers stated they wanted employees who" know the world", who understand the system they work in, who have a lot of interests and their understanding. Knowledge of world phenomena both current and historical. In a global and reticulated world, where connections between countries, organizations and people become tight, in their eyes there is importance for workers who understand the wide context they work in. wide horizons may assist in understanding complex situations and finally will lead to better decision making.

# Discussion about the importance of manpower in teaching

The quality of the teacher is probably the central factor in creating a quality education. This argument is not supported solely among professionals and the public, but also strengthened by diverse research. The Mackenzie Report from Barber & Mourshed (which investigated 25 education systems in the world indicated 3 factors most influencing the education system: attracting the right people, developing them and making them efficient teachers and assuring a high level of teaching for all students). In the Taube Report for the years 2011-2012 a review was conducted concluding the importance of the teachers' role in the students' achievements. Analyzing the researches checking the teachers' influence of students' achievements showed that the teaching force influence the students' achievements more than other systemic characteristics (for an extensive review of the research findings see Paz and Salant, 2012). The best example for it can be found in Henshuk's research (2011), which examine the economic value of improving the teaching force. This review shows that improving the teaching force is the most effective way substantially compared to other variants in order to improve students' achievements. In the calculation he conducted Henshuk found that if the USA will lead its students to the level of the students in Finland in the international tests, by improving the teaching force, it will be worth the growth of 100\$ trillion in America's annual output. Henshuk's article is a revolutionary one, because it sees the teacher as a producer of a great economic value, and sees the investment in the teacher as pure financial investment returned in the form of state product. Chart 6 Summarizes Henshuk's and Co's findings about manpower in teaching, a lecture he gave in September 2011in Taube Center in Jerusalem. In view of the many challenges facing the education system and demand no less than excellent teachers, after all how can one expect the education system to create independent students with wide general knowledge, critical thinking and high articulation if their teachers are not as such? And although the findings show the importance of the teachers' role it seems that measures haven't been taken yet to ensure that every student will get to meet quality teachers who will accompany them throughout their years in the education system. A significant number of people who were interviewed for this project referred to the importance of the teacher's role and the importance of doing everything possible to attract a high quality people to man these positions. In this part of the project I will bring variety of ideas that came up in the interviews and talks conducted to form this project. Their main goal is to improve the quality of teaching by attracting excelling people to this domain and strengthening the position of the teacher, both as a social tool and as a tool which will attract populations that will increase the human capital significantly. In the interviews a few relevant issues came up regarding the topic of fostering the human capital and improving the existent. Some of them are failures and opportunities at the same time, if taken care of properly. In this part we chose to focus on two opportunities we find have the greatest potential for developing the human capital in the Israeli economy: investing in weak students with emphasis on weak populations with low resources and investment in preschool education. These are the domains the research hold a high hope on improving the domain. Yet, the main condition to succeed in the investment, as pointed in the research, is quality teaching force whose work will enable the promotion of every relevant program regarding the matter. In this chapter we will refer to three more ideas that came up in the interviews which welcome steps of strategic policy: alternative success rates for schools, creating a quality system for manpower management, and finally, conceptual change and a move of the education system based on research and innovation. Here are the findings: investment and intensive work with low social-economic populations. This is one of the opportunities to indicate improvement in human capital. Localities with a great number of low social-economic status citizens, who suffer from low investment and resources for education are with the greatest potential for a yield for the investment. This conclusion derives from the simple fact that the rise of education products in this localities meaning: basic skills of writing, reading, reading comprehension and math can cause a significant improvement in the human capital and therefore enabling an entrance to the labor market, coming out from the cycle of poverty, reduction of government support and in certain cases prevention from entering to the world of crime. Another opportunity for improving the human capital in the system lies in investment and development of preschool education. In the research field there is almost no argument about them being the most critical education stages, therefore their financial feasibility. In the research examining the yield of investment in education it was found that investment in preschool and elementary school yields a greater profit than investment in high school education.

### **Summary**

From the findings brought in this document- the gloomy financial data of the Israeli economy, the disappointing results of the international tests and evidence of the possible connection between the two, the demands the Israeli economy places before the education system in the form of skills and capabilities of its graduates and the lacks and defects existing nowadays in the system, an urgent need rises to take action. The Israeli education system needs to aspire to be leading world class, to shape a strong society and strong economy based on quality human capital. Therefore, it is time to act recruit and preserve the best people for a career in the education system: a more efficient resource division, investment in the right places, an ongoing learning in the study domain, effective teaching methods and policy measures. Below is a list of

the central recommendation of the work: independent capabilities of learning and problem solving, a wide knowledge of many interests, mastering the English language, comparative and critical thinking, and articulation- verbal and in writing, mathematical and science knowledge, and developing ethical and civil awareness. Also, the project findings reveal that the graduates leave sometimes to the higher education system and the labor market with no capability of perseverance and a will to work and study hard. Therefore, these capabilities need to be strengthen as well. These skills and capabilities need to be developed both in the curriculum level and the teaching methods level right for it. This step requires extensive research and development, but in view of the Israeli economy's needs, it is a necessary and lucrative investment.

#### Recommendation-

## **The Teaching Force**

Recruiting and preserving excellent teachers is a must that cannot be overrated. A great deal of resources must be invested to ensure the quality of teaching in the education system. The project recommends to do it in several ways: a strict filtering and selection of candidates by raising the bar of acceptance, establishing a qualitative selection system, promoting and developing of programs for honors student teachers' training, strengthening the teacher's status and creating a better image of the teaching profession, by allowing independence to teachers and principals and by turning the teaching profession into a clinical one and improving the work environment and allowing the opportunity of significant professional development in the job. Investment in potential population of high yielding on the investment. A correct and professional investment in specific population with potential of returning the

investment- those are the low social-economic status populations and the children's population of the ages 3-6. This may contribute to a substantial leap in the human capital aspect. Thus, it is important to found a professional group with knowledge in economy and education. This group will examine the most feasible investments financially, socially and educationally, they will suggest the optimal ways for investment and will accompany its performance (The Ministry of Education 2012).

### **Research Policy and Innovation**

In light of the fact the education system is characterized with many questions and almost no questions in almost every educational aspect, therefore, the research and innovation policy is essential to the education system which aspires to be a leading system. This policy will enable examining new ideas and new curriculums. It will become a platform for experiments and will bind all the gathered information. This way, in a few years a significant knowledge will be gathered and will turn the educational system into a one of a kind leading system in the world. We believe that the recommendations we described in this project are an appropriate infrastructure for a change and action. Even if we can disagree with some of them, we cannot exaggerate the urgency of the need to deepen and make changes in the educational system. Beyond all the recommendations, that of course we can and cannot accept, an immediate and deep need for the strengthening and economically empowering the Israeli society is called for.

# **Bibliography**

Almog, A, & Almog T, 2013. "About graduates and lies". Hed Hachinuch, chapter 7 4: 60-63.

Bergman, A and, Marom, A. 2005. The contribution of the human capital to growth and productivity in the business sector in Israel, 1970-1999. The bank of Israel.

The committee report of economic-social change. 2011.

Dan Arieli in the foreign affairs committee of the Knesset http://www.youtube.com/watch?v=Cml0LzxOcs4 2012. Viewed on August 1st, 2013.

Horowitz, A. 2010. Doctors don't earn more than teacher but are more successful.

It is time to make teaching a clinical professionhttp://www.themarker.com/career/1.561663. Viewed on July  $1^{st}$ , 2013.

Horowitz, A. Oh, how beautiful- the education system of Ontario http://ehurvitz.wordpress.com/2013/04/20. Viewed on July 1<sup>st</sup>, 2013.

The Central Bauru of Statistics. 2012. Statistic yearbook for Israel.

The National Insurance Institute. 2012. Poverty rates and social gaps.

The Council for Higher Education. The higher education system in Israel: a collection of data from the third higher education convention.

The inter-ministerial team. 2012. The lack of skilled manpower in high technology, recommendations of the inter-ministerial team.

Zussman, N and Friedman, A. 2009. The quality of the labor force in Israel. The bank of Israel.

Yashiv, A and Kasir, N. 2013. The labor market of the Arabs in Israel: review of characteristics and alternatives of policy.

The state Comptroller. 2013. Annual report for the year 2012.

The Henrietta Sauld Institute. 2012. Teaching physics in Israel- an update form the years: 2001, 2010, and 2012.

Taube Center. 2012. State of the country report: society, economy and policy.

The Ministry of Education. General compulsory subjects- math nationwide a comparison between the years 2008-2010. http://cms.education.gov.il/NR/rdonlyres/D9320C72-2204-4A64-8BE7-

09D88C1C743B/139359/Page100.pdf.

The Ministry of Education. 2010. Primary findings from the PISA research. 2009.

The Ministry of Education. The program for assimilation the skills of the 21<sup>st</sup> century- in colleges.

The Ministry of Education. Primary findings from Tims research 2009.

The education system as a social-economic lever- steps for fostering the human capital in the Israeli economy

Paz, D and Salant, A. 2012. Teacher excellence: definitions, rates, aspects and programs in Israel and in the world. Mofet Institute.

Aaronson, D. and Sullivan D. 2001. "Growth in worker quality". Economic Perspectives-Federal Reserve Bank of

Chicago 25(4): 53-74.

Barber, M. and Mourshed M. 2007. How the World's Best-performing Schools Systems Come Out on Top:

McKinsey & Company.

Becker, G. S. 1964. Human Capital. New York: Columbia University Press.

Belfield, C. R. 2006. "Does it pay to invest in preschool for all? Analyzing returnon-investment in three

states". New Brunswick, NJ: National Institute for Early Education Research.

Accessed November 29: 2007.

Bell, V., Burriel, P. et al. 2005. A Quality-Adjusted Labor Input Series for the United Kingdom (1975-2002).

Bellanca, J. A. and Brandt R. S. 2010. 21st century skills: Rethinking how students learn, Solution Tree Press.

Cunha, F. and Heckman J. J. 2010. Investing in our young people, National Bureau of Economic Research.

Hanushek, E. A. 2002. "Publicly provided education". Handbook of public economics 4: 2045-2141.

Hanushek, E. A. 2011. Socioeconomic Impact of Education (Taub Center Conference). http://hanushek.stanford.

edu/opinions/eric-hanushek-impact-educational-quality-taub-center-conference accessed: 1.8, 2013

Hanushek, E. A. 2011. "The economic value of higher teacher quality" . Economics of Education Review 30(3):

466-479.

Hanushek, E. A. Jamison, D. T. et al. 2008. "Education and Economic Growth: It's not Just Going to School but

Learning That Matters". Education Next 8(2): 62-70.

Hanushek, E. A. and Kimko D. D. 2000. "Schooling, labor-force quality, and the growth of nations". American

economic review: 1184-1208.

Hanushek, E. A. and Woessmann, L. 2010. Education and Economic Growth.

International Encyclopedia of

Education. in: P. Peterson, E. Baker and B. McGaw. Oxford, Elsevier. 2: 245-252.

Hanushek, E. A. and Woessmann. L. 2012. "Do better schools lead to more growth? Cognitive skills,

economic outcomes, and causation". Journal of Economic Growth 17(4): 267-321.

Hanushek, E. A. and Zhang, L. 2009. "Quality-consistent estimates of international schooling and skill

gradients". Journal of Human Capital 3(2): 107-143.

Heckman, J. J. 2000. "Policies to foster human capital". Research in economics 54(1): 3-56.

Heckman, J. J. 2008. "Schools, skills, and synapses". Economic inquiry 46(3): 289-324.

Heckman, J. J. and Masterov D. V. 2007. "The productivity argument for investing in young

Economic Perspectives and Policy 29(3): 446-493/.