

Literature review of ‘Trends in investing resources¹ in education by socio-economic standing: Public investment (local and national government), third-sector investment and household investment’

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¹ Our discussion focuses only on “physical-budgetary” resources. It is very important to emphasize that there are other non-monetary resources – perhaps no less important – that are not included in this review. I am referring, for example, to the socio-economic component of the classroom, the “cultural capital” in the pupils’ homes, the society’s attitude toward issues of inequality, and so on.

Introduction

Despite the centrality of the problem of inequality and disparities in the education system, the subject of allocation of resources (monetary and others) in the education system by socio-economic standing has generally received little attention from the research establishment in Israel. The international community of researchers has also conducted relatively few empirical studies on the distribution of resources among population groups that differ in their socio-economic characteristics.² This fact is quite surprising in light of the enormous resources invested in education, and the number of researchers who study the connection between various resources and their educational results.³ This review of the literature aims to present the reader with a short summary of up-to-date knowledge on the subject, based on the international research, and to outline the findings of studies conducted in Israel on the distribution of resources among groups of pupils from different socio-economic backgrounds – as primarily measured by the deprivation index, but sometimes also by sector and type of supervision exercised by the Ministry of Education.

The review addresses the following resources:

- A. **Budget** – with a focus on the teaching budget, which is the predominant component in education spending
- B. **Personnel** – allocation of teachers; in particular, whether the quality of teachers differs according to the school's population of pupils
- C. **Class size**
- D. **Infrastructure**

The discussion in each of these areas focuses on the gaps in resource allocation among schools and pupils in a number of different cross-sections:

- A. By stage of education (pre-elementary, elementary, jr. high school, secondary school)
- B. By source of funding (national government, local government, household, NGOs and others)
- C. By socio-economic status (deprivation index), while separately addressing – only where appropriate – sector (Jews or Arabs) and type of supervision (state, state-religious or ultra-Orthodox)

² The most prominent and well-known Israeli researchers in this field include: Ruth Klinov, Victor Lavy, Iris Ben-David Hadar, Adrian Ziderman, Nili Mark, Hanna Bar-Yishai, Momi Dahan, Noam Zussman, Avi Ben-Bassat and Moshe Justman, though this is the primary field of inquiry for only some of them.

³ There may be a gap between what the researchers and educators believe in regard to the importance of the social gaps and what the public thinks. Surveys conducted by the Taub Center indicate that the public generally attributes secondary importance to the issue of social gaps. (Nahshon and Blass 2009, 2010).

The heart of the review is a description of the research findings and existing statistical and administrative data that directly pertains to the gaps in resources available to groups of pupils from different socio-economic backgrounds.⁴

General description of the work method

The cross-checking of stages of education (6), sources of funding (4), and areas of allocation (4) – not to speak of the distinctions between sectors and types of supervision – creates a system of “cells.” The amount of research-based information on our topic of study in each “cell” ranges from relatively substantial information to a complete lack of information. In the framework of this review, which is limited in scope, we can only address some of the “cells,” choosing them according to two main considerations: 1) the existence of research or other information we discovered; 2) the importance of the cell (quantitatively, qualitatively, socially or otherwise).⁵ Of course, some of the studies appear in more than one “cell” because they deal with a number of topics. In addition to studies and reviews published by researchers and in scientific journals, we use other sources, including:

- A. Publications by the Central Bureau of Statistics (the annual Statistical Abstract and specific publications on topics pertaining to those included in the review)
- B. Publications by the Ministry of Education, including directives from the director-general, and websites such as *Bamabat Rachav* [In Broad Perspective], *Shkifut Takzivit* [Budgetary Transparency] and other sites operated by the ministry’s Economics and Budgeting Administration.
- C. Publications by the Knesset’s Information and Research Center.
- D. Data from international databases such as EAG, TIMSS, PISA, etc.

Seeking to be as relevant as possible to the current state of the Israel education system, the review focuses on articles and studies published since 2005 (with the exception of central studies in the field that merit our attention). The review is also based on Internet searches use the following keywords (in Hebrew and in English): budget, budget methods, deprivation index, class size, teacher quality, socio-economic background data, construction,

⁴ Elsewhere in the framework of the current project, the impact of the various reforms instituted in the Israeli education system will be described (implementation of the Shoshani Report, instituting the funding method recommended by chief scientist S. Strauss, the recent working conditions agreements with the teachers` unions -*Ofek Hadash*, *Oz Letmura*- , the trends in technological education, etc.), as well as their impact on the allocation of resources among the different population groups.

⁵ Of course, “importance” here is the importance attributed to the “cell” by the author of the review. Each reader may agree or disagree with the author’s approach.

resource allocation, inequality, social gap, sector, type of supervision.⁶ The rest of the review is divided into four parts.

Part A – Introduction and general background

Part B – Funding education systems and the development of funding and affirmative action policies in Israel

Part C – Distribution of resources among different population groups

Part D – Summary and recommendations

Part A: General background

Definitions

Every discussion of inequality in the education system should distinguish between inequality in allocation and inequality in results, and should answer the question – inequality between whom? The subject of our current review is inequality in allocation; consequently, we will not discuss the definition of inequality in outcomes. We will only say that inequality in outcomes exists when the average achievements and standard deviation of achievements (without defining which achievements) are not equal among the various population groups (see Adler, Blass 1997, 2009). A distinction should be made between two types of inequality in allocation: 1) formal inequality, which exists when the share of resources one population group receives from the general pie is not commensurate with its percentage of the general population; and 2) real inequality, which exists when the share of resources one population group receives is not sufficient for achieving equality in results – in other words, when the “marginal output” of the last shekel is different in the different groups (ibid. 2009).

After defining our objectives in the discussion on inequality in allocation, the question arises: inequality between whom? In the world at large, it is customary to compare rich and poor, periphery and center, long-time residents and immigrants, boys and girls, pupils without special needs (if such pupils exist) and pupils with special needs, and so on.

In Israel too, it is customary to conduct similar comparisons, such as rich versus poor, Jews versus Arabs, religious versus secular, residents of wealthy communities versus residents of development towns, and so on. Here, we focus primarily on the pupil’s socio-economic

⁶ For the purpose of preparing the review, I asked all of the Israeli researchers in this field to send me their work that has focused on resource allocation among pupils and schools from different socio-economic backgrounds. I was pleased to receive responses from most of the researchers, but unfortunately the “yield” of relevant work – that is, studies that explicitly address the disparities in allocation among the different population groups (rather than the connection between resources and achievements) – was meager.

background (parent's education, parent's income, number of children in the family, geographic location, etc.), data that was included (in part or in whole) in the past and is included today, in one way or another, in what is called "the deprivation index" in the educational jargon in Israel. We also address – in places where there is special importance – two additional key aspects: the national aspect (that is, the distinction between Jews and non-Jews), and the ideological religious aspect (that is, the distinction between non-religious state education and state-religious/ultra-Orthodox education – or "type of supervision" in the accepted educational jargon in Israel). In this study, we do not address the distinction by gender, special needs, or type of community, as long as they do not reflect socio-economic distinctions.

Historical background

One could say that the discussion of inequality and disparities in educational systems in the world has only recently taken center stage. To a great extent, this began in the second half of the previous century and the primary catalyst was World War II and the developments that came in its wake. The mobilization of all residents of the countries that fought Nazism, and the rhetoric of democracy and equality those countries employed, including an attack against the ideology of race, were directed inward after the war and created fertile ground for the battle against segregation and inequality in the education systems in Europe and the United States, while also influencing countries in other parts of the world. In Israel – where the demographic map changed entirely after the War of Independence and the massive immigration in the late 1940s and in the 1950s from all corners of the world – this was expressed primarily in greater awareness of the disparities between new immigrants and veteran residents, Mizrahim and Ashkenazim (the former immigrants from Asia and Africa the later from Europe and America), and Jews and Arabs.⁷

Educational research kept pace with the social developments and a huge amount of research has accumulated since the 1950s that addresses a broad range of topics pertaining to social and learning gaps. The researchers who have studied issues of inequality between different population groups have focused primarily on documenting, describing and proving the connection between different socio-economic variables and educational/learning achievements (for example, Coleman 1966; Jencks 1972; Pettigrew 1967 and others) and the connection between parents' education and pupils' achievements). Researchers have devoted

⁷ For a comprehensive review of the development of the "fostering" policy in Israel, see the article by Avi Levy, director of the Ministry of Education's Education and Welfare Services Division: "Fostering Pupils from Weak Populations," in *Jubilee of the Education System in Israel*, ed. E. Peled (1999). Ministry of Education, Culture and Sport. Published by the Ministry of Defense, pp. 109-134.

slightly less attention to studying the connections between different types of resources and educational/learning achievements (for example, the connection between the amount of monetary investment and pupils' achievements – a topic that later received more attention: Hanushek 2003; Agasisti et al. 2014; Loeb et al. 2007 and others). Even less attention, and at a later stage, has been focused on studying the scope and level of inequality in allocation among different socio-economic groups (Carter et al. 2013, Duncan et al. 2011).

As a direct result of this work over many years, and of the educational information accrued, there is no serious educational researcher today who doubts that socio-economic background greatly affects the learning and educational achievements of children. The debate among researchers is only about the size of the impact of the pupil's personal and social background relative to various characteristics of schools and the education system, and the extent to which the education system can contend with and overcome the difficulties and advantages of the pupils' socio-economic background and the social reality in which they are immersed. (See, for example, Hanushek 2003, as opposed to Carter et al. 2013).

Summary of the up-to-date scientific information pertaining to the variables examined

In this section, we summarize, at the level of bullet points, the accepted knowledge and describe the overall reality in the developed countries that serve as a source of reference for us, as expressed in various studies. These studies provide a general background for continuing the discussion on the allocation of resources among the different population groups in Israel.

The budget

The budget is the most direct, immediate and overt resource in the education system allocated to schools. When we discuss the budget as a whole, we are referring to all funding that can be allotted to schools without a designated purpose.⁸ It seems that the accumulated educational knowledge, and research findings on the impact of investment in education in general and investment in affirmative action in particular on educational results, enables us to state the following with considerable confidence:

- A. Since there is usually a strong correlation between the pupils' background and their learning and educational achievements, differential resource allocation – which takes into consideration the fact that pupils from a weak socio-economic background experience more difficulty in attaining learning and educational achievements than pupils from a strong

⁸ When we speak about a designated budget, we are referring to a sum of money allocated for a specific purpose, such as class size, hours of instruction, teacher training, buildings and equipment, and so on.

socio-economic background – is an essential condition, though not a sufficient one, for narrowing learning and educational gaps.

- B. The definition of pupils from a weak socio-economic background, as well as the methods of identifying these pupils, varies from one country to another. Sometimes the definition is ethnic, sometimes it is demographic, and sometimes it refers to new immigrants versus long-time residents, and sometimes to lifestyle (nomads, boat dwellers, gypsies). The methods of identifying these pupils are usually based on the parents' education and income, but sometimes they refer to geographic regions or socio-economic characteristics of residential areas.
- C. The differential allocation of monetary resources can be implemented – and is implemented in practice – in different ways. This is sometimes done through a differential budget per pupil, sometimes through an extra budget for schools in distressed areas, and sometimes by funding special programs of study. Various funding methods are combined in many cases.
- D. In most developed countries (see Blass 2008), and Israel is no exception in this regard, there are various affirmative action programs. Nonetheless, the cumulative resources that are ultimately available to pupils from the wealthier echelons from all sources – national and local government, parents and other entities – are general larger, and much larger, than those available to pupils from the poorer echelons, and the various affirmative action programs are unable to erase the gaps in resources between the different populations, let alone erase the gaps in educational and learning output.⁹
- E. The primary “physical” expression of resource allocation in education is the work hours of teachers (TWH).¹⁰ This is also reflected in the accepted terminology in Israel¹¹ for the purpose of funding the education system: “ (TWH).” The research literature devotes considerable attention to the question of the connection between the number of hours of instruction provided to the pupils and their learning and educational achievements. This dilemma is expressed in the demands that frequently arise in various places to extend the school day, the school week and the school year, on the one hand, and the demand to allocate more work hours for assisting struggling pupils and, in particular, pupils from weak socio-economic backgrounds, on the other hand.

⁹ Various studies conducted in the U.S. indicate that in order to raise pupils from a weak socio-economic background to the level of achievement required of all pupils, there is a need to provide them with budgetary affirmative action of at least 50% (PWC 2002, cited in Klinov 2010, Blass 2008).

¹⁰ We do not say hours of instruction, because the teachers' work includes many components beyond direct teaching. Later on we shall use the term Teaching weekly working hours (TWH)". TWH is a budgetary term that denotes the price of "one yearly working hour of a teacher". It does not relate necessarily to the number of hours that the students receive in the classroom or the number of lessons that the teacher teaches.

¹¹ Other countries use the term job or portions of a job.

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- F. A certain number of hours of instruction and learning is essential. Learning cannot take place without professional classroom instruction. Therefore, it is very important to know the number of work hours the education system invests and the distribution of these hours according to the objectives they serve (hours of classroom instruction, hours of individual instruction, hours serving in additional roles, and other hours).
 - G. The hours of instruction are particularly important and fruitful when the number of hours allocated to the classroom is low, and the importance diminishes as the number of hours allocated to the classroom increases.¹²
 - H. The direct and individual hours of instruction are especially important for weak populations. Consequently, there is great importance in examining the principles and method of allocating hours of instruction among the different population groups.
 - I. The impact of adding hours of instruction largely depends on the methods of instruction used and the teachers' abilities. Thus, it is often noted that "more of the same" is an inefficient and wasteful policy. There is insufficient knowledge in many cases; and when there is knowledge, it is not implemented in an efficient way in order to get the most from the resources invested in affirmative action.

Quality of teachers

There is a consensus in the professional literature that teachers constitute the most important **school** resource and have the strongest impact on learning and educational achievements. (See, for example, the well-known McKinsey report: McKinsey 2007). This explains the centrality of the question of teacher quality in all discussions about the education system in general and about learning and educational achievements in particular. The question of how teachers are "allocated" between schools serving pupils from weak socio-economic backgrounds and schools serving pupils from strong socio-economic backgrounds is of paramount importance in any discussion about learning and educational gaps. The topic can be broken down into three main categories:

- A. The actual reality of the presence of teachers in the schools – that is, do schools that serve weak populations suffer more from a shortage of teachers? The answer is apparently "yes" (OECD 2013).
- B. Turnover of teachers - do schools that serve weak populations experience a higher turnover of teachers? The answer here is also apparently "yes" – because of the tendency of teachers to prefer teaching in schools that serve stronger populations of pupils.

¹² This expresses the principle of diminishing marginal utility, a concept familiar to us from the field of economics.

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- C. Quality of the teachers – are the teachers who are teaching pupils from weak socio-economic backgrounds teachers of "lower quality"? Since we lack sufficient criteria for assessing the quality of teachers, the answer to this question focuses on the teachers' seniority and education as variables that are supposed to express "quality." Here too, based on these variables, we find that in most countries, pupils from wealthier backgrounds are taught by teachers of higher "quality." There are different reasons for this. On the one hand, wealthier education systems (especially places where private education has a large role, or in places where the local government provides a high level of funding) can pay teachers more. On the other hand, the tendency of teachers to request a transfer from schools serving weak populations of pupils to schools serving strong populations, as noted above, drains the population of outstanding teachers in the weak areas. Thus, while many developed countries allocate more "work hours" to populations of pupils from weak socio-economic backgrounds, this preferential policy is ultimately contradicted due to the facts cited above. **Nonetheless, there are indications that in Israel the characteristics of teachers working with weak populations are not substantially different than those of teachers who work with strong populations (Blass et al. 2008).**

Class size

Another variable that is often discussed in the context of learning achievements is average class size. The opinions on the impact of this variable are very divided (see Angrist & Lavy 1999; Bohrnstedt et al. 1999; Boneronning 2003; Buckingham 2003; Hattie 2009). Class size has serious fiscal and educational implications. The fiscal implications stem from the need to increase the number of buildings and teachers (the two largest and most expensive components in education spending), and the educational importance stems from the concern that reducing the number of pupils in classrooms, which requires hiring many more teachers, might entail a decline in the quality of teachers.

The lack of consensus among researchers regarding the net impact of reducing the class size, derives from a fundamental methodological difficulty in studying the issue. Too often the composition of the classrooms is not random. In many cases, the pupils who are weak from a learning perspective – and who are very often also pupils from weak socio-economic backgrounds – are assigned to small classes. This engenders an ostensibly "anomalous" situation in which there is a direct correlation between class size and learning achievements – that is, the larger the class, the higher the achievement. Nonetheless, there are also a number of widely accepted findings on class size, based primarily on several key studies

conducted in the United States – most prominently in Tennessee, Wisconsin and California.

¹³The two main conclusions are:

- A. Class size has an impact on learning and educational achievements, particularly in the younger grades, and this impact is ongoing.
- B. The impact is especially strong vis-à-vis pupils from a weak socio-economic background.

Buildings and facilities

If there is a subject on which nearly all researchers agree, it is the fact that buildings, facilities and equipment have only a minor impact on learning and educational achievements. Still, we cannot ignore the fact that in many countries the physical facilities available to wealthier pupils are superior to those available to pupils from a weak socio-economic background. This is saliently expressed in the PISA 2012 data, where a much higher percentage of principals of schools serving weak populations report that the physical conditions (facilities, equipment, etc.) available to them detract from their ability to provide a good education for their pupils, in comparison to principals of schools serving more privileged populations (OECD 2013).¹⁴

Part B – Funding education systems and the development of budgeting and affirmative action policies in Israel

General

The Ministry of Education is the most significant entity in transferring resources to the education system and in setting the policy for resource allocation. The ministry currently (after implementation of the law of free and obligatory education for children ages 3-4) provides more than 90% of the resources in education from pre-kindergarten through jr. high school¹⁵ and apparently over 80% of the resources in secondary education.¹⁶ The fact that

¹³ In the first two states, this involved controlled experiments. The California study examined the impact of a decision mandating fewer pupils per classroom in the early grades, throughout the education system in California. It is important to emphasize that the relevance of these studies to the reality in Israel is very limited because the class size in these studies is only about half of the class size in Israel. In the STARR study, class size is reduced from 20-25 to 15-20, while the average class size in Israel is more than 28, with an upper limit of 40. All of the efforts to convince the Ministry of Education to conduct a controlled study of the question of class size in Israel have failed so far.

¹⁴ This connection is less clear in Israel today because much of the new construction is located in the ultra-Orthodox and Arab sectors due to the need to narrow social gaps that developed in this area over many years.

¹⁵ This estimate also takes into account the Ministry of Education's funding of local government outlays (for example, for janitors and secretaries, truant officers, psychologists, and so on).

the share of the local government and the parents is not particularly large does not make these sources less important; such “marginal” spending can actually provide a critical boost and imbue a special spirit. Consequently, this spending component can have a significant impact on the sense of inequality, even if the real effect is smaller. In very general and rough terms, we can describe the reality in the allocation of the various budgets among the different parts of the population in Israel as follows:

- A. The Ministry of Education maintains a policy of affirmative action primarily in elementary education and in the jr. high school. In kindergarten and in high schools, the affirmative action is negligible. Affirmative action in kindergarten is expressed in lowering the minimum class size for funding purposes (33 children per class in wealthy locales and 31 children in less affluent areas). In high schools, this is expressed in funding smaller classes (*Mabar* and *Etgar*).¹⁷ We can describe the overall impact of the government budgeting policy as reducing the inequality in allocation to a certain extent, but certainly not in a way that can reduce the inequality in output.
- B. The level of expenditure by local governments on education in general and on affirmative action in particular is not equal; it varies in accordance with the local government’s budgetary strength and the ideological inclinations of the local leadership. As a rule, the allocations of the localities are differential and express a policy of affirmative action within their jurisdictions. Strong local authorities (and Tel Aviv in particular) allocate substantial resources for education, while weak local governments (primarily Arab localities) allocate negligible sums. We can summarize the influence of local authorities on resource allocation as an influence that increases inequality to a small extent, despite their policies of affirmative action (Blass, Zussman and Tzur – pending publication)¹⁸. Nonetheless, even if the end result is not dramatic overall, in specific cases we can see very wide disparities in the investment per pupil in weak and strong local authorities.
- C. Everything stated in regard to local governments applies even more strongly to household expenditure. Here too, the parents’ share of the expenses is relatively negligible (see Blass,

¹⁶ The Central Bureau of Statistics (CBS) reports that the national and local governments cover only about two thirds of the outlays for secondary education, but the CBS includes adult education courses and other types of spending that are not connected to secondary school education. Confirmation of this assessment can be found in Table B3.1 in the EAG 2014 publication, which notes that household spending on elementary, secondary and non-academic high school education accounts for about 4% of education spending, with other private entities adding about 6.5% for a total of 10.5%. This compares to the OECD average of 8.6%.

In principle, this is aimed at weak pupils from weak socio-economic backgrounds. In practice, this is for weak pupils, without any real distinction by socio-economic background.

Zussman and Tzur 2010), the overall impact is regressive due to the fact that wealthy parents can invest more in their children than parents of limited means.¹⁹

- D. Investment by the various NGOs is also relatively unsubstantial (Blass, Zussman and Tzur 2010), and its impact usually mitigates the inequality because most of the NGOs devote a large part of their budgets to strengthening education among the weaker populations.

The extent of the education budget's influence and its ability to widen or narrow the learning and educational gaps linked to socio-economic background are determined by three main components:

The size of the budget

There are often complaints in the general public that the Ministry of Education's budget has been frequently cut in recent years. But the opposite is true. Between the years 2000 to 2014, the Ministry of Education's real budget grew in terms of money per pupil by more than 20%.²⁰ The education budget's share of the total government budget has also increased significantly, from about 8.75% of the total budget in 2003 to about 10.75% in 2014. This is ostensibly a "small" increase of only 2%, but it actually expresses a broad and deep change in the government's attitude to the field of education. On the other hand perhaps this would be seen in a slightly different light if we note that **national** expenditure on education as a percentage of GDP has remained almost unchanged during that period. Another question we can ask is whether the spending per pupil in terms of percentage of GDP per capita during the period under review increased or decreased. It turns out that in general the answer is that spending per pupil remained more or less at the same level (between 15% and 16%).

Share of the budget allocated to affirmative action

Some people examine the Ministry of Education's allocations for affirmative action by looking at the hours of instruction allotted per pupil or per class according to deprivation index criteria. While hours of instruction are easy to track, they are not an accurate measure of affirmative action because they are only part of the resources the Ministry of Education allocates to pupils and to classes. In the past, an attempt was made to track levels of affirmative action by examining the budgets for operating Ministry of Education programs that could be defined in one way or another as aimed, in part or entirely, at improving the

¹⁹ The parents' share is much more significant in early childhood (ages 0-2) and in supporting their children's post-secondary and higher education, and of course in spending on informal education.

²⁰ Nonetheless, there were several years during this period – primarily at the beginning of the period – when the budget, including the funding per pupil, decreased, but only marginally (up to 2%).

achievements of pupils from weak socio-economic backgrounds.²¹ In the framework of that study, all of the programs that could somehow be connected to affirmative action – **and which were not defined as “TWH” in the “deprivation basket” or in other “baskets”**²² – were divided into three categories. Programs operated by the Education and Welfare Services Division, programs exclusively and directly intended for affirmative action but operated by other entities, and programs designated for general populations but primarily serving pupils from weak socio-economic echelons. This division into the different groups involved a number of difficulties, some substantive and some technical. The substantive difficulties stemmed primarily from the need to decide whether a particular budgetary item expresses a program of one type or another; the technical difficulties derived from changes in definitions over the years and from a lack of budgetary transparency. For the purpose of this work, the calculation was updated to 2013.

As a rule, we can say the following:

- A. Since 1989, the budgetary scope of programs operated by the Education and Welfare Services Division declined significantly from about 1.5% to less than 1%.
- B. Between 2% and 3% of programs operated by other units were clearly defined as intended to promote weak populations (for example, scholarships for pupils from weak populations, and teacher-soldiers generally assigned to schools that serve weak populations).
- C. Programs defined as general, but mainly serving weak populations (for example, *Mabar* and *Etgar* classes in secondary education) accounted for 8-9% of the budget until 2012. Here we should note that until 2012, the Ministry of Education’s tuition subsidy for compulsory pre-kindergarten was included as part of the affirmative action budgets because it was primary designed to assist poor parents.²³ Today, this cannot be considered affirmative action because it applies to all children.

In summary, we can say that the education system creates preferences in resource allocation aimed at promoting the learning of pupils from weak social strata, but the scope of the affirmative action falls far short of meeting the needs. Moreover, this trend has existed for

²¹ This has been studied since 1989. (See Taub Center for Social Policy Studies in Israel 2003; Adler and Blass 2009).

²² Until the implementation of the Shimshoni Report, the deprivation basket and the national priority basket stood at over 100,000 TWH.

²³ We are talking here about hundreds of millions of shekels (about 800 million in 2012). The budget for this item increased in 2013 and in 2014 to over 2 billion shekels. In addition, throughout the years we have treated the transportation budget item as affirmative action because it is primarily intended for the periphery and for special needs pupils, both of which include a disproportionately high percentage of pupils from weak populations. If we also subtract this budget item from those defined as affirmative action, we see that the Ministry of Education **today allocates** only 8-9% of its budget for this purpose.

decades in the (Jewish) state and state-religious tracks, and only recently was expanded to include the Arab sector.

Funding methods in general and their development in Israel²⁴

One of the important topics in educational research on budget and resource allocation for educational institutions pertains to the various funding methods, the ways these methods are defined, and their educational and learning impact.²⁵ In general, we can divide funding methods by various criteria.

- A. The end unit of funding – the class and/or individual pupil
- B. The extent of the educational team’s freedom to choose how to use the budget – when the funding is transferred to the educational institution, it is either an “open” budget (that is, subject to the discretion of the school’s educational team) or a “designated” budget (that is, defined for particular activities, and the school’s staff cannot change this designation).
- C. How the budget is transferred – in money or in work units (TWH, teaching positions)

All of the funding methods use a formula (or several formulas), but the formulas differ in their level of complexity and detail. The level of variability primarily depends on the scope and number of factors the budgetary authority chooses to take into account, the variety of institutions, and the level of trust accorded to the school administrations. The factors that appear in nearly all funding formulas include: age group (secondary schools generally receive higher funding than elementary schools), distance from the center of the country (the periphery receives a larger budget), minimum class size for funding, number of pupils with special needs, and characteristics of the teaching staff.

Funding methods in Israel

Pre-elementary education – The method of funding in pre-elementary education has actually remained unchanged since the founding of the state, and is based on a calculation of costs per kindergarten class (teacher, teacher’s aide, and maintenance and operation costs). The calculation of cost per child is based on 33 children in a kindergarten class located in wealthier communities and 31 children per class in less wealthy communities. The state covers the costs of work (the teacher and most of teacher’s aide salary), while the local

²⁴ The principles of funding methods at the various age levels are published each year on the website of the Ministry of Education’s Economics and Budgeting Administration, and in directives from the ministry’s director-general in the event of significant changes.

²⁵ The leading researchers in this field are Ross and Levacic (Ross and Levacic 1999; Fazekas 2012). In Israel, Bar Yishai (Bar-Yishai 2001) and Blass (Blass 2008, 2009, 2010, 2014; Blass, Zussman and Zur 2010) have studied this subject.

government pays the maintenance costs. In pre-kindergarten for ages 3-4, the method of calculation is not substantially different, but until 2012 the funding mainly came from differential tuition, according to the parents' income. In the 1980s, it was decided to gradually institute free compulsory education in pre-kindergarten, and full or partial exemptions from payment were extended to weak population groups. In 2012, in the wake of social protest and Trajtenberg Report, it was decided to grant a full exemption to the entire population. (On the development of legislation and implementation regarding this topic, see Adler and Blass 2004; Zaban and Blass 2012; Blass and Bleikh 2013; Vurgan 2007A, 2009). The state funding is supplemented by the local governments (an additional 10-15%), whose money is primarily designated for ongoing operations. The parents also pay relatively small sums in fees.

Elementary education – The calculation of costs in elementary education is also based on the costs of teachers' wages, their working load as defined by the Ministry of Education and Teachers Unions, the program of studies, and class size. The **current** basic funding unit is the class – taking into account the number of pupils per class, with relatively small supplements in accordance with the school's deprivation index.²⁶ Over the years, the funding methods in elementary education have changed significantly three times: in 2004, when the WSF was instituted (based on the Shoshani Report), in 2008 when the integrated method was implemented (based on the Strauss Report), and in 2015 when the WSF was reapplied in a revised form. The local governments, parents and other entities (as described below) supplement the budget provided by the Ministry of Education.

Jr. high school – The funding of jr. high schools has also undergone changes that are similar in essence to the changes that occurred in elementary education, though they were implemented in different years. Until 1993, the funding was very similar to that of elementary education, with affirmative action expressed via a "deprivation basket." In 1994, a new funding method was introduced – the "WSF" – which was later adopted in elementary education.²⁷ The change lasted for only one year, and was followed by another new funding method, which also was later adopted in elementary education – "the integrated standard per pupil." This is essentially a method of funding per class, with some compensation for the number of pupils in the class and its socio-economic composition. In 2015, another change was introduced, similar to the change instituted in elementary education. In regard to the participation of other entities, see above.

²⁶ In parallel to the main funding method used in the official education system, other funding methods (at the level of participation and/or in the form of funding) were used in ultra-Orthodox education.

²⁷ The author of this article was the one who formulated the method, upon the request of Dr. Shoshani, who served as director-general of the Ministry of Education during that period.

Senior High schools – The principal method of funding in Sr. high schools has not changed at all in the past two decades. Funding is conducted through “tuition”²⁸ per pupil, which is determined according to the same components that determined the funding of the other stages of education, with the addition of factors like the study track (academic versus technological), field of study (different subjects in technological education), class ranking, profile of the institution’s teaching staff (average seniority and education), and level of service the school provides. The changes that occurred over the years only involved “coefficients” of the components of calculation, and not the method of calculation itself – for example, a change in class size as a component of funding, a change in the required number of hours, and so on. The role of the local authorities, the parents and other entities such as the education networks (Amal, ORT, etc.) is more significant in secondary education than in elementary education. (See more on this below.)

Ultimately, it seems that the most progressive funding method, with the greatest potential for erasing allocation inequality, is the “WSF” which takes into consideration the personal socio-economic background of the pupils and includes all education funding (and not only teaching budgets).²⁹

The “deprivation index” – a tool for measuring the needs of pupils in the different funding methods

Many of the world’s countries include data on the socio-economic background of pupils in their funding formula with the aim of providing affirmative action for pupils from weak socio-economic backgrounds. For this purpose, all countries use an administrative tool (in Israel, we call it the “deprivation index”) to rank the budgetary needs of schools in accordance with the socio-economic characterization of their pupils.³⁰ “Deprivation

²⁸ The term “tuition” appears in quotation marks because it is ostensibly paid in full by the state. The parents’ participation in funding secondary education comes in the framework of parental payments that are determined separately by each school; regulation of these payments by the state is only partial and is not always effective.

²⁹ Nonetheless, the second method could possibly be more progressive if the differential used for allocation purposes is small (for example, the pupil with the weakest socio-economic background receives only 10% **more than** the pupil with the strongest socio-economic profile) and, on the other hand, the separate budget – allocated in addition to and beyond the equal budget allotted per pupil and/or per class – is sufficiently large.

³⁰ It is important to distinguish between the “deprivation index,” which is only a tool for ranking educational difficulty derived from data on socio-economic background (according to the prevailing view, which can differ from one country to another), and the “funding method” expressed by the various funding formulas.

indexes” vary from one country to another – both in the variables they include and in the weights accorded to each component. In Israel, deprivation indexes have changed a number of times, usually to reflect the different worldviews of those at the helm of the education system.³¹ In some countries, there are categories such as “citizens living on river boats,” “natives,” gypsies, speakers of foreign languages, etc. – all in accordance with the specific situation in that country. It should be clear to the reader that the same deprivation index could be used in funding methods that are very different and distinct from one another in terms of their level of progressiveness.

Development of the “deprivation index”³²

Since the 1960s, the deprivation index has been the main tool used by the Ministry of Education to rank schools and/or pupils by their (“objective”) ability to attain educational and learning achievements. We can identify five different deprivation indexes employed over the years. The transition from one index to the next was not coincidental; it was always connected to: changes in the education system’s approach to identifying the populations in need of affirmative action; the characterization of impediments these populations face; the units for measuring the index’s components (the individual pupil or school); and the attempt to adapt the index to demographic and social developments.

Defining the populations of deprived pupils and the deprivation index in Israel

In general, it is customary to see several types of populations as “natural” candidates for affirmative action:

1. Pupils from a low socio-economic background
2. Pupils from a cultural background and environment that are different from the background of the majority (in Israel, this primarily includes the Arabs, the ultra-Orthodox, foreign workers, etc.)
3. Pupils with low learning achievements
4. Pupils with special physical or emotional needs

The goal of the deprivation index in Israel has **always** been to give preference to pupils from a low socio-economic background – regardless of whether they have high or low achievements – on the assumption that low socio-economic background is the main factor preventing the pupils from fully exploiting their learning and social abilities (Elgrably 1975; Adar 1978; Blass 1980; Cahan 1985; Yair 1991; Neshet 1996; Levy 1999). A population

³¹ See Blass 2009 and a separate publication in the framework of this project.

³² For more details on the development of the deprivation index, see Blass 2009, 2010.

deserving affirmative in Israel usually includes: 1) a population living in areas defined according to socio-economic criteria as development areas; 2) a population that is defined according to socio-economic criteria as a population in distress, and lives outside of development areas; 3) a population defined by a particular and specific type of distress, such as school dropouts or those liable to drop out of school, an at-risk population, and so on.³³

The first deprivation index (1963-1973)³⁴

This index was essentially a school index and was based on achievements of fourth graders in Hebrew and arithmetic (and later, according to the achievements in a two-year survey of eighth graders), the percentage of new immigrants, the percentage of fathers of Asian-African origin, seniority and training of the school principal, the percentage of teachers who lack certification, and the percentage of teachers who do not reside in the community in which they work. Saliently missing are the variables of parents' income and education. What is more important and noticeable is the fact that this index totally ignores Arab and ultra-Orthodox pupils.

The Elgrably index (1974-1993)³⁵

This index defined the level of deprivation with the help of the following variables: father's education, father's origin and number of children in the family. The index, which was very efficient from an administrative perspective, drew increasing criticism over the years due to the fact that the percentage of pupils whose parents were born abroad was rapidly decreasing. This index also failed to take into account the family's income and was not applied to the Arab and ultra-Orthodox populations.

The Neshet index (1994-2004)³⁶

In response to criticism of the Elgrably index, a committee was appointed in 1989 to study all of the issues related to the deprivation index. Based on the committee's recommendations, a new deprivation index was formulated and introduced on a trial basis in Jewish elementary schools, and was also later expanded to Jr. High schools and to Arab schools.³⁷ The components of the index included: percentage of low-income families,

³³ Education and Welfare Services Division, work plan 1996-1997.

³⁴ The components of the various deprivation indexes and their weights are presented in an appendix.

³⁵ Named for Mr. M. Elgrably from the Ministry of Education's Planning Department, who formulated the index.

³⁶ The Neshet index is named for the chief scientist at the time, Prof. Perla Neshet.

³⁷ See Neshet 1996.

percentage of parents with a low level of education, family size, percentage of new immigrants, and peripherality. In regard to the Arab population, the following variables were added: “recognized communities,” mixed cities, and small communities. As we see, the main innovation of this index was the inclusion of Arab pupils. However, together with the definition of a separate index for the Arab population, it was decided that the Arab population’s share of the resources earmarked for affirmative action would be commensurate with its percentage of the population. Since the socio-economic standing of the Arab population on the whole was much lower than that of the Jewish population, this decision was undoubtedly a blatantly discriminatory one.

The Shoshani index (2004-2008)³⁸

The deprivation index recommended by the Shoshani Committee was fundamentally different than the Nesher index in several ways. The index focused on the individual pupil and not the school, included all pupils without exception, and incorporated components that were not included in the past. Due to the difficulty in obtaining data on the income of the pupil’s family, and in light of the strong correlation between this data and the pupil’s place of residence and family size, the committee preferred to drop the income variable and replace it with these variables.³⁹

The Strauss index (2008-today)

Public criticism, and especially the High Court hearings (in HCJ 11163/03) on the discriminatory demarcation of areas of national priority, led the Ministry of Education to develop a new deprivation index – the Strauss index. The method of calculating this index is essentially similar to that of the Shoshani index. The distinction lies in the different components in the indexes and the weights assigned to these components. The Strauss index includes only four components: education level of the parent with the higher level of education, income, peripherality and country of birth. A number of components were removed from the index: family size, immigration from a country in distress, and residence in an area of national priority. The new deprivation index, introduced in the 2007-2008 school year, appears to be an improvement from the previous index because it relies on components that are more closely linked to educational impediments, and they apply to the entire population of pupils.

Summary

³⁸ 2008 refers to the 2007-2008 school year.

³⁹ This was clearly a political decision that ultimately led to the need to substantially revise the index.

While the changes in funding methods in the education system were relatively minor, the developments in the deprivation index since 1963, and particularly since the mid-1990s, came at a much more rapid pace and were characterized by two main trends. The first trend is the expansion of the application of affirmative action from Jewish state and state-religious schools to Arab and ultra-Orthodox education. The second trend is an increase in equality. The components of the index have become more and more egalitarian, without a clear preference for a particular sector of the population. The changes in the deprivation index contributed to improving its reliability and its ability to serve as an effective tool in the effort to narrow gaps. On the other hand, the recent changes in funding methods in elementary education and jr. high school – in essence, reverting from a differential standard per pupil WSF to a standard based on funding per class – have a regressive tendency.

Part C - Distribution of resources among different population groups⁴⁰

Monetary budget – Budget of teachers' work hours (WTH)

Ministry of Education

Kindergartens (ages 3-5)

Israel is among the countries with the highest percentage of children ages 3-5 (nearly 90%) attending kindergartens (EAG 2014). Israel's achievement in this sphere is particularly salient in light of the fact that the absolute majority of these children (Jews and Arabs) learn in public frameworks supervised by the Ministry of Education, according to uniform curricula and with teachers who have undergone similar training. The funding of kindergartens does not distinguish between the Jewish and Arab sectors, or between the periphery and central Israel. However, it includes almost no affirmative action,⁴¹ and the full implementation of the Compulsory Education Law for ages 3-4 (accomplished in the wake of the social protest and Trajtenberg Report) also failed to advance this subject.⁴²

⁴⁰ As noted above, theoretically we laid out a map of at least 96 cells (by stage of education, sector, type of supervision, and funding entity) for the purpose of mapping the division of resources. In this chapter, we only address the "cells" for which we have research data and/or available statistical data.

⁴¹ A full description of the funding method of kindergartens – which is far more complex and detailed – is available on the website of the Economics and Budgets Administration <http://meyda.education.gov.il/files/MinhalCalcala/monsipali2015.pdf> (Hebrew).

⁴² The fact that the Long School Day Law has primarily been implemented in kindergartens in communities of weak socio-economic standing can perhaps be seen as affirmative action, in part at least. Nonetheless, the long school day is in effect in less than 10% of all kindergartens, and only about 60% of them are located in weak communities.

The recently published data on budgetary transparency vis-à-vis kindergartens is only by locality and/or A Socio Economic Geographic cluster devised by the CBS, so it is not simple to compare kindergartens by the pupils' socio-economic background. Nonetheless, a comparison of kindergartens in various socio-economic clusters raises questions when there is almost no difference in spending per child between cluster 1 and cluster 10, and a 14% difference between clusters 9 and 2 in favor of cluster 9. Moreover, there are very large disparities (over 40%) between communities within the same socio-economic cluster. These irregularities may be attributable to the quality of the data, but may also stem from other problems that are unclear to us.⁴³

The question of whether a full exemption from tuition (free education) constitutes affirmative action from the education system's perspective remains open. On the one hand, such subsidies expand the opportunities available to parents from low socio-economic strata and this, of course, is better than a situation in which they could not receive a particular educational service due to its cost. On the other hand, as long as there is no difference in the nature, quality and scope of the service provided to the parents – in a way that is related to their socio-economic standing – it is difficult to regard a full exemption from payment for kindergarten as affirmative action in the educational sense of the word. Consequently, since children from low socio-economic strata already enjoyed access to pre-kindergarten prior to the implementation of the recommendations by the Committee for Social-Economic Change, it seems that **their relative situation** has worsened vis-à-vis children from wealthier backgrounds. For wealthier families, the tuition exemption freed funds they can now use for additional enrichment activity they were previously unable to afford.⁴⁴ Thus, at least ostensibly, this is essentially a regressive step because it transferred hundreds of millions of shekels to parents who are relatively well-off. One could argue, on the other hand, that this transfer of money to strong populations does not come at the expense of weak populations. Rather, it is additional funding allotted to the Ministry of Education and takes nothing away from the weaker populations; it is a supplemental budget that would not have been allocated if it had been designated for narrowing gaps.

Recently, the process of implementing the legislation produced another result – the employment of an additional teacher's aide in pre-kindergartens with more than 30 children. This decision also does not distinguish between kindergartens serving poor populations and

⁴³ Expanding the data included on the budgetary transparency website to make it comparable to data on schools, including the addition of deprivation index data on kindergartens, would enable researchers in the future to analyze the distribution of allocations to kindergartens too.

⁴⁴ This pertains, of course, only to groups of parents for whom this exemption is significant (let's say income deciles 3-6 and not deciles 7-10).

those serving wealthier populations. It was initially decided that the budgetary burden of adding teacher's aides would be divided in a more socio-economic conscious way between strong and weak localities, with the weak localities bearing 10% of the cost of the additional teacher's aides and the strong localities covering 50% of the cost. However, this decision was soon overturned as a result of opposition from local governments, and the situation – in terms of the participation of local governments in funding teacher's aides – more or less returned to the status quo ante. That is, in poor communities the cost of the teacher's aide falls entirely on the state, while wealthy communities cover only 20% of the cost.

Elementary and jr. high schools

Hours of instruction WTH are the resource on which there is the most abundant and reliable information available for researchers, in the past and today. Consequently, most of the studies conducted in the past in regard to disparities in resources available to the various sectors focused on this variable. The research findings on the period that predate 2008 are presented in various studies (Zussman et al. 2007; Blass 2009, 2010; Blass, Zussman and Tzur 2010; Blass, Zussman and Tzur 2015; Klinov 2010; Movement for Quality Government 2008) can be summarized as follows:

- A. The education system maintains a policy of affirmative action in both elementary education and jr. high school.
- B. This policy has actually been in effect since the 1950s, and it has constituted an integral part of the funding of elementary education in each of the three funding methods implemented.
- C. Affirmative action initially existed only in official Jewish education (the state and state-religious tracks), and began to operate in the Arab sector only in the 1990s, and in 2004 in the ultra-Orthodox education system.
- D. The most significant affirmative action existed during the years 2004-2007, when the "WSF" funding method was employed.
- E. Throughout the years, state-religious education has enjoyed an advantage in monetary allocations relative to state education, and even more so in comparison to Arab and ultra-Orthodox education. This advantage is explained by objective conditions (wider dispersion and weaker background data in comparison to non-religious Jewish state education) and by political circumstances (religious ministers headed the education system for many years).

While WTH are the primary resource, they are not the only resource, of course, and a comprehensive view of education spending should also include all of the various types of auxiliary services. The Ministry of Education published data last year on the distribution of

funding it transferred to educational institutions⁴⁵ in the years 2012 and 2014. The data, though sometimes problematic, enables, for the first time, an in-depth examination of the distribution of the ministry's entire budget, according to various categories.⁴⁶ The data of the Ministry of Education's presentation reflects the situation of the funding per pupil and per class, and by sector, type of supervision, and deprivation index. In the current context, we are primarily interested in data by the deprivation index, but the data by sector and by type of supervision can, of course, help bring the picture into sharper focus. Salient data includes the following:

- A. While spending for the weakest pupil was 25% higher than the average spending per pupil in 2012 and 30% higher in 2014, the gap in spending per class was 9% in 2012 and 10% in 2014. When examining TWH only (not including the other expenditures), the disparities were smaller (20% and 22% per pupil, and 5% and 4% per class)
- B. The share of other expenditures besides hours of instruction was 13% on average in 2012 and rose to 16% in 2014, and was higher in schools serving the weakest deciles: 15% in the weakest versus 11% in the strongest in 2012, and 19% versus 13% in 2014.
- C. Affirmative action in official Jewish education (that is, not including the ultra-Orthodox) is much greater, exceeding 50% per pupil. Affirmative action per class is much smaller, amounting to only 19%.
- D. The average allocation per pupil in state-religious education is the highest: 11% more than the allocation in Arab education, 18% more than the allocation in non-religious Jewish state education, and 19% more than in ultra-Orthodox education. The disparities are smaller in allocation per class.
- E. Affirmative action in the Arab sector is much more limited than in the Jewish sector.

Jr. high school data indicates less affirmative action than in elementary education in terms of allocation per pupil, and an absolute lack of affirmative action and even an advantage for strong schools when it comes to allocation per class. Similarly, there is almost no affirmative action in the Arab sector. Undoubtedly, publication of the data in its current form can and

⁴⁵ This refers only to budgets that can be directly associated with schools, and accounts for about 85% of the Ministry of Education's budget. It should be noted that this is the first time that data of this type has been published, and it is a very significant step in the direction of boosting transparency and facilitating the access of researchers to data that was previously nontransparent.

<http://cms.education.gov.il/EducationCMS/Units/MinhalCalcala/shkifut/shkifut.htm> (Hebrew).

⁴⁶ Nonetheless, the fact that the information the ministry posted on the Internet includes only data for 2012 and 2014 does allow comparisons with previous years, and that is unfortunate. Another important advantage of the data is that the summary of the presentation not only addresses data according to the socio-economic cluster of the locality in which the school is located, but also the deprivation deciles of the schools themselves.

should serve as a central and important source of information for any future study of the distribution of Ministry of Education resources allocated to schools according to various criteria in general and according to the deprivation index in particular.

High schools – The funding of high schools is ostensibly based on four parameters: the grade, the track and specialization, the professional profile of the school's teachers, and the level of services that the school provides to its pupils; it does not take into consideration the pupils' socio-economic background. In practice, there is some consideration of the pupils' socio-economic background, expressed in the funding of smaller classes – the *Mabar* and *Hechven* classes – for pupils of low academic achievements (most of whom come from a weak socio-economic background) and higher funding for vocational tracks comparing to academic tracks (where again most of the pupils come from less wealthy backgrounds). Data from the Budgetary Transparency website enables us for the first time to see the differences in funding per pupil according to the school's deprivation index.⁴⁷ A number of very interesting things come into view:

- A. In 2012, the disparity in funding between the weakest and strongest pupil was 11%, while in 2014 it was only 3%.
- B. In 2012, pupils in the second, third and fourth quintiles were funded at higher levels than pupils in the fifth quintile. In 2014, the disparities in favor of quintiles 2-4 widened.
- C. In 2012, a pupil in the Jewish sector was funded at a level 26% higher than an Arab pupil, and in 2014 the gap grew to 30%. This disparity is even more severe when taking into consideration the higher percentage of Arab pupils in technological education (54% of Arab pupils in 2014, versus 33.5% of Jewish pupils), since technological education is more expensive.
- D. Another salient fact is that a pupil in the Druze sector is funded at a very similar level as a pupil in the Jewish sector – that is, nearly 30% higher than in the Arab sector.
- E. The budget rose in the Jewish sector by 9% from 2012 to 2014, and only 6% in the Arab sector; in the particularly weak Bedouin sector, funding rose by only 2%.
- F. A pupil in state-religious education was budgeted in 2012 at a level 14% higher than a pupil in Jewish state education, 46% higher than an Arab pupil and 62% than an ultra-Orthodox pupil. In 2014, the numbers were 18%, 56% and 65%, respectively. All this does not take into account payments by parents and supplemental budgets from the local governments.

⁴⁷ The Central Bureau of Statistics also published data in 2012 on public and private spending on secondary education. The study refers to 2003 data, and provides a great amount of interesting data, some very similar to the budgetary transparency data and some different.

Without a doubt, this Ministry of Education data enables, and even mandates, a more thorough examination because it is difficult to accept a situation in which one population group enjoys a budget that is over 50% higher than other population groups.

Local government

General – The Ministry of Education is indeed the main source of funding for elementary and Jr.High schools, but it has partners that also affect the distribution of resources among the different population groups. One key partner is local government, which participates in funding educational institutions in two ways: by supplementing budgets that are primarily funded by the Ministry of Education, such as school secretaries, janitors, truant officers, transportation, and so on; and by funding services and other subjects the ministry does not fund. In recent years, four studies and one position paper were written (Dahan and Ben-Bassat 2009; Polak 2012; Golan 2004; Blass, Zussman and Tzur – pending publication; and Justman 2014) that address the question of the impact of local government budgets on disparities in education. The first two studies treat this subject in a very concise way, and note that wealthy localities – socio-economic clusters 8-10 – allocate much higher sums per pupil than weak localities, thus widening the gaps in funding per pupil.⁴⁸ According to these researchers, the investments by local authorities have a critical impact in exacerbating inequality. Avi Golan’s study, which is more limited in scope, describes the budget discrepancies in five secondary schools in different local jurisdictions. Blass, Zussman and Tzur assert that the influence of the local authorities is much more limited, basing their conclusion on data from a monitoring project directed and funded by the Ministry of Education for the years 2000-2009. The project aimed at examining the funding sources for hours of learning in hundreds of elementary and jr. high school. According to Blass, Zussman and Tzur, the impact of local government includes two components that operate in opposite directions: Within their own jurisdiction, local governments work to reduce inequality through affirmative action for schools that serve weak populations, while among the localities the impact is in the direction of reducing affirmative action because the wealthy localities invest more in both weak and strong pupils. In support of their contention, which contradicts the arguments of the other researchers, Blass and his colleagues cite the Central Bureau of Statistics’ reservations about the reliability of the data on local government spending that appears on the website of the Central Bureau of Statistics supports the view

⁴⁸ Polak points to a gap of nearly 20 to 1 in 2012, and Ben-Bassat and Dahan say the gap was even wider in 2006.

Pre-elementary education – The Ministry of Education’s funding rules assign the local authority responsibility for paying the ongoing costs of operating kindergartens, 13% of the salary costs of teacher’s aides, and expenditures in underpopulated kindergartens.⁴⁹ This spending is similar in all of the kindergartens, regardless of the pupils’ background data. Therefore, it has almost no effect on the inequality in allocation.

Elementary education – According to the Central Bureau of Statistics’ data, the main burden falls on the state (93%), and the local governments cover only 5% to 6%. This data refers to the total expenditure and not only the WTH. These findings precisely correspond to research data cited above. Thus, even if local government spending may have a significant effect in specific localities and in specific educational institutions, the overall impact of local authorities on inequality in allocation is not substantial.

Secondary education – Secondary education includes Jr.High schools and high schools. The Central Bureau of Statistics – wrongly - does not distinguish between these two stages of education when addressing the subject of funding. In our view, the data for Jr.High schools is much more similar to the data for elementary education than for Sr.high . This is because both stages of education are budgeted in a similar method and teachers are state employees in both. In high schools, local governments only provide 2% to 3% of the funding. This is surprising because it is customary to think that secondary education is actually the area in which the local authorities contribute the most funding. It turns out, however, that this is not the case – primarily due to the fact that the overwhelming majority of schools are not owned by the local authorities. Instead, they belong to education networks and associations that are directly funded by the Ministry of Education. Here too, it is very possible that in certain places the situation is different. Overall, however, the impact of local government on inequality in allocation is again not very substantial.

In summary: Six to seven percent of public spending on education is not a negligible sum, but its impact on inequality is minimal. Specific examples from one locality or another do not change the general picture. The inequality primarily stems from overall government policy and the main effort should be directed in that direction in order to narrow disparities in input and output in the education system.

Households

General – The third partner in funding education, and perhaps the partner with the biggest impact on the gaps in learning and education is, of course, the parents (“households”). Each

⁴⁹ The local government is required to participate in the extra costs of operating the kindergartens if the locality does not meet the minimum number of pupils set by the Ministry of Education.

family in Israel spends an average of between 12% and 13% of its income on education, culture and entertainment (CBS 2015). Of course, the average conceals the huge gaps in absolute spending on education – which for our purposes is the most important variable – in accordance with the family’s income level and the number of children in the family. The effect of spending by the national government and local authorities on inequality operates differently than the effect of spending by parents. While the former makes its impact by allocating sums among the different groups of pupils, the latter make a direct impact by allocating resources to their individual child, or to the schools their child attends. In the case of government (national and local) funding, the factor with the greatest influence on allocation decisions is the ideological outlook vis-à-vis equality and disparities; in the case of households, the most influential factor is the parents’ view of the importance of the education their children receive as a tool that will give them an advantage over other children during the course of their lives as adults.⁵⁰

The impact of households operates in three channels that can also be ranked in ascending order in terms of the strength of their impact on disparities in learning and educational achievements. One channel is direct payments to schools. The second channel is via investment in the “informal” education system” – or, in other words, “expenditures on extracurricular activities and private lessons.” The third, and probably, most important channel consists of the resources available to the children in their homes (comfortable learning conditions, books, newspapers, trips and recreation, and so on). In the discussion here, due to constraints of space and topic, we only address the first channel.

Education in Israel for ages 3-17 is ostensibly free. However, in practice, the parents participate in funding part of the expenditures of schools and kindergartens. This funding is primarily designated for expenses other than teaching, yet its considerable importance should not be underestimated. The participation of parents in funding schools is regulated by a directive from the Ministry of Education specifying the maximum payments a school is allowed to collect from parents and defining various categories of payment: compulsory payment, special payment, optional payments, payment for additional program of study (*Talan*), and voluntary purchase of services. (The directive does not set a maximum amount of payment for voluntary purchase of services.) The public’s feeling is that parents’ payments to the schools are growing and that these payments are contributing very significantly to the widening of gaps in the resources available to them. Is this feeling indeed justified? The subject has been examined quite extensively and has been the focus of more studies than other subjects pertaining to the distribution of resources among educational

⁵⁰ In this context, see for example the discussion in the book by Yuli Tamir 2015.

institutions. (Heller, 2007; Zadik, 2006; Vurgan, 2009; Klinov, 2007; Swirsky Dagan Buzaglo, 2013; CBS, 2012). The reason for the large number of studies is apparently the prominence accorded to the subject of parental payments – a subject that is raised for discussion every year by the Knesset Education Committee.

Formal education (kindergarten - 12th grade)⁵¹ – According to Central Bureau of Statistics data, households contribute 5% to 6% of the funding for formal education in elementary education, and about 20% in secondary school.⁵² In the elementary education this includes all household spending that can be associated with it. This scope of spending would greatly limit the impact of households on the overall distribution of resources to elementary schools. The research findings of Ruth Klinov (2007) and Heller et al. (2007), based on the same data, confirm this general conclusion. This does not contradict the fact that in certain places the funding from parents constitutes a significant addition to school budgets and can generate large gaps in favor of schools that collect high payments from parents in various ways. Nonetheless, the phenomenon of private and special schools that charge tuition and/or other payments from parents is still quite limited in scope. The study by Yuval Vurgan (2011) on unique learning tracks cites a total of 68 special elementary schools in 2011, about half of them recognized but unofficial (in other words, “private”). If we note that there were more than 2,100 schools in state and state-religious education during the same period, we can attribute the appropriate weight to this phenomenon and conclude that the public’s feeling about the major contribution of parents’ payments to inequality in resource allocation in elementary schools is not based in reality.

During the past year, the Taub Center conducted a comprehensive study of household spending on education; the final results of the study are slated to be published in 2016. At this stage, it is already possible to note, as expected, that there are significant differences between the various income quintiles in spending on elementary education not only in absolute terms (which is higher in the more affluent households), but also as a percentage of household income: A family in the first quintile (poorer family) spends about 8% of its income on elementary education, while a family in the fifth quintile spends less than 4%.

⁵¹ The discussion here also includes compulsory kindergarten (age 5), but not pre-kindergarten because of the difficulty in distinguishing between ages 3-4 and 0-2 in the survey of family spending, and due to the inclusion of day care centers in that category.

⁵² While the data appearing in the CBS study from 2012 indeed support these numbers, the Taub Center’s findings are different – they are more in line with the assessment presented above. The data in the annual Statistical Abstract of the CBS is also problematic due to the fact that it also includes, as noted, components that are unrelated to secondary education. It is likely about 10%, with a large part of this invested in private lessons and classes outside of the schools.

As noted, the scope of parental payments to the schools is low relative to the funding transferred by the national and local governments.⁵³ This does not contradict the fact that the scope of the parents' investment (in its various forms) in their children has a decisive impact on gaps in learning achievements. The findings of surveys on household spending help in analyzing how educational gaps are created. Wealthy parents "bypass" the relatively equal starting point provided in the frameworks of compulsory education by making additional investments in the education of their children in early childhood, by providing extracurricular and informal education and by offering substantial assistance in financing their higher education. In this way, they give their children an advantage in facing the challenges that await them later in life. Families that are not wealthy devote a larger share of their spending to each stage of their children's education (with the exception of supplemental education). Nonetheless, as the state's share of education funding grows, the wealthier population also has more incentive to supplement this and finance additional or alternative education for their children. The reasonable explanation for this phenomenon is that wealthy parents seek to give their children an educational advantage, an advantage that is denied them when state education is operating on the basis of equal funding. The operative conclusion is that public resources should be invested differentially in order to compensate for the inability of the weaker groups to mobilize, from their independent resources, the means required for the education of their children at the level and quality available to children from wealthy social strata.

NGOs and other entities

A fourth influence on the distribution of monetary resources among educational institutions comes from non-government organizations (NGOs) and foundations funded by a various sources.⁵⁴ Most of the research and public discussion on NGOs and other third-sector entities operating in schools address the issue of privatizing the education system. Today there are hundreds of NGOs and foundations active in the schools in a range of fields. A study commissioned by the Ministry of Education (Weinheber et al. 2008) identified 425 NGOs and 81 foundations operating in the education system, and the authors of the study noted that this number was not final. The survey indicated that in 89% of the schools there is at least one external entity, with an average of 2 to 3 programs operated by external entities.

⁵³ The word "low" includes an element of subjective assessment, of course.

⁵⁴ In this part of the article, we only address NGOs and organizations whose main budget is not governmental (for example, the Rashi Foundation, the Karev Foundation, etc.), and not organizations such as ORT, Amal, Naamat, and so on. The monetary sources of the various NGOs are primarily donations from individuals and organizations, parents' fees, funding by the state or local government that comes as "matching" or as support. The government participates in only about 5% of the programs, but those it supports are key programs with large budgets.

(The number of programs varies by sector, type of supervision, and so on.) There are many types of external organizations and programs operating in schools, but only 5% of the programs require payment by the user. (That is, they are for-profit enterprises – or at least when the payment is not only designed to cover expenses.)⁵⁵ Another report, prepared by the Ministry of Education’s Chief Scientist’s Office (Ministry of Education 2008), also cites hundreds of NGOs and other entities operating in the schools, and the 2011 State Comptroller’s Report references and confirms the findings of these reports.

Here we do not intend to address the issue of privatization, but the question arises of whether the activity of the private foundations and organizations strengthens or weakens affirmative action. It appears that although privatization is regarded as detrimental to equality, the reality is much more complex. Nir Michaeli, in his important article on privatization (2010), effectively ignores the unequivocal finding of Weinheber et al. that the investment of foundations and NGOs in the weak populations is much greater than their investment in the wealthier populations. Blass, Zussman and Tzur 2010 also pointed in a similar direction. Indeed, in our assessment, many foundations and NGOs, and particularly the large ones such as the Rashi Foundation, the Karev Foundation, the Branco Weiss Foundation, etc., focus their efforts on the weak populations, and thus boost affirmative action. The nature of the activity also varies in accordance with the deprivation index: In schools with a high deprivation index, the activity mainly concentrates on the core subjects of study, while in schools that serve more wealthy populations, the activity is primarily enrichment. In summary, the research and findings available to us do not point to an unequivocal conclusion.⁵⁶ Thus, there is a need for a concentrated effort to collect data from schools that includes both direct funding and resources that come in the form of equipment, professional assistance, and so on.

The quality of teachers

As noted, there is a consensus in the professional literature that teachers are the most important and influential **school** resource in regard to learning and educational achievements. Consequently, the quality of teachers is central to any discussion on the education system in general, and on its learning and educational achievements in particular. The problem here is that there is no real consensus on how to define the “quality” of teachers

⁵⁵ In the survey conducted by the Chief Scientist’s Office, the percentage of programs that required payment was much higher – over 16%.

⁵⁶ We will just note that the discussion about donations from various entities is perhaps disproportionate in light of the assessment that they amounted to only about 1% of school funding in 2002 (Zussman 2007). Even if this percentage increased in recent years, it is still relatively small relative to the investments by other entities.

and which parameters should be used to assess them. Moreover, there is general agreement among researchers that the current parameters – teaching seniority, education and number of continuing education courses – provide, at best, only a partial reflection of a teacher’s “quality.” These parameters are still used in the education literature and particularly in education administration – more for convenience (that is, the data is easy to collect) than because of their ability to assess the quality of teachers.⁵⁷

In Israel, as in many other countries, the subject of teaching personnel is largely dictated by the Ministry of Education (and by the Ministry of Finance, of course), on the one hand, and by the teachers’ preferences, on the other hand. The Ministry of Education exerts its influence through two main channels:

- A. Most of the training of teachers takes place in institutions that are under full state supervision.
- B. The teachers’ salaries and work conditions are determined in national employment agreements, and most of the teachers work under the terms of these agreements. In the framework of this channel, the state could – if it so wishes – define better conditions for teachers working in institutions, places or subjects of study that it seeks to promote.

The result is that the local government, parents and NGOs have very limited influence over the “quality” of personnel in the schools (by providing better working conditions for quality teachers), though they can affect the number of personnel (by increasing funding for hiring additional teachers).

Here another factor enters the picture – the teachers themselves. The labor market for teachers is a free market,⁵⁸ and the State of Israel is a small country, where the distances between the teacher’s place of residence and place of employment are not substantial. Thus, teachers wield considerable influence in determining their place of work (especially when there is a shortage of teachers). In Israel, as in most other countries, most of the teachers

⁵⁷ Some believe that it is possible to overcome the difficulty of evaluating the “quality” of teachers based on seniority and education by examining salaries. This assumes that schools and/or local authorities compensate good teachers with higher salaries. But this approach does not fit the reality in Israel, where teachers’ organizations are completely opposed to differential wages. The accumulated (and very limited) experience in hiring teachers via individual contracts does not allow us to draw conclusions on this question.

⁵⁸ This is not self-evident. There were years when the state dictated where the graduates of teacher training institutions would be employed. Today too, in light of the surplus of teachers (in the Arab sector, for example), the state can influence the teacher’s choice of workplace. There are some countries, including democratic nations such as France, or less democratic ones like Vietnam, where the state has a very strong say in the placement of teachers.

prefer to work, for various reasons, in educational institutions that serve strong populations. Thus, the teachers' preferences sometimes stand in contradiction to the intentions of those who head the education system, requiring the latter to adopt an active policy of steering teachers toward kindergartens and schools that serve weaker populations.

Many studies on teachers and their characteristics have been conducted in Israel, but only a few on their distribution in the schools in accordance with the deprivation index of the schools. One of the obstacles the Ministry of Education places before researchers in this field is its refusal to provide data on the deprivation indexes of schools. Consequently, the statistics on teachers' places of work refers to localities according to a socio-economic index and we have to suffice with data on salary differentials between teachers working in localities with different socio-economic rankings.⁵⁹

According to a Central Bureau of Statistics press release on March 2, 2015 on trends in teachers' salaries, and contrary to the prevailing public feeling, it turns out that the salaries of teachers at each stage of education are very similar throughout the country, regardless of the locality's socio-economic standing.⁶⁰ This finding is consistent with those of Blass et al. 2008 and 2010, who found no discrimination or disparities in the quality of teachers (as expressed in their salaries) among the localities. But this also means there is no affirmative action in this area.

Beyond all of the above, the data on teachers' salaries – as an indicator of their quality – should be treated cautiously, especially when comparing data on the official Jewish education system with the Arab or ultra-Orthodox education systems. This is because the Arab and ultra-Orthodox education systems have grown much more rapidly than the Jewish state and state-religious systems in recent decades, thus the share of younger teachers with short - an important salary component. - is higher in these systems, -Salaries are also lower as a result of the revocation of incentives previously granted to (non-ultra-Orthodox) Jewish

⁵⁹ This presentation is problematic because it gives all of the schools in the locality the same socio-economic score. This creates a situation in which, for example, schools in poor neighborhoods in Tel Aviv receive a higher score than schools in wealthy neighborhoods in Jerusalem.

⁶⁰ While the data in the press release refers to the Jewish state education system, there is no good reason to assume that the situation is substantially different in other parts of the education system.

teachers in national priority regions.⁶¹ The lower salaries, however, do not necessarily reflect the quality of teachers in Arab and ultra-Orthodox education.⁶²

We cannot conclude this section of the review without noting the salary differentials that exist in recognized and unofficial private institutions, differentials that are not necessarily related to seniority and education level. These institutions, which are largely funded by the parents (especially in the case of for-profit institutions), employ teachers under individual contracts. The management of these institutions often have the upper hand in salary negotiations with the teachers. This occurs because some of the teachers are more interested in working in institutions serving wealthier populations, or in the case of a large surplus of teachers.

Class size

Class size is regarded by teachers and parents – despite the lack of any comprehensive research support for this view - as a variable with a great impact on the results of the educational process. The prevailing opinion is that the smaller the class size, the better equipped teachers are to lead their pupils to higher achievements. Therefore, it is essential to examine whether pupils from weak socio-economic background are learning in larger or smaller classes. It is very important to emphasize that international research on class size has very limited relevance for educational thought in Israel. This is due to the fact that what is considered a large class in developed countries is considered a small or medium-sized class in Israel. The well-known study conducted in Tennessee spoke of reducing the class size from 25 pupils to 15-17 pupils, numbers that we can only dream of in Israel.

Several factors affect class size in Israel; some are controlled by the state (and the Ministry of Education, in particular) and some are objective factors. The government and Knesset wield influence via primary legislation, and particularly in allowing the parents to choose among the different types of supervision. The Ministry of Education influences class size by setting the rules for maximum class size, funding, and defining the accepted walking distances between the pupil's place of residence and school. The local government can

⁶¹ In the past, the Ministry of Education assisted teachers who taught in schools in national priority regions by awarding various incentives such as salary bonuses in subject areas in demand, accelerated promotion and seniority, rent subsidies, payment of the teacher's share in study funds [*keren hishtalmut*], travel expenses and a 75% tuition subsidy.

⁶² It should be noted that from an education perspective, the percentage of teachers with a bachelor's degree (though not with a master's degree) in the Arab education system is similar to, and in recent years has even surpassed, the percentage in the Jewish education system. (See tables 8.4, 8.7 and 8.18 in the 2014 Statistical Abstract).

influence class size by defining the boundaries of registration regions, and the parents can make an impact by choosing their children's school (including a change of residence when the school determined by the local authority is not acceptable to them). NGOs and other entities can exert influence on class size by deciding where to open educational institutions and under which conditions to operate them.

As noted above in the discussion on funding methods, the Ministry of Education instituted a number of affirmative action rules pertaining to class size in all levels of education: In kindergarten, it reduced class size for funding purposes by two pupils in localities that do not receive a grant from the Ministry of Interior to cover their deficits in elementary and Jr.High schools, it lowered the maximum size for funding at the higher levels of deprivation; and in high schools, it permits smaller classes (*Mabar* and *Etgar*) in special frameworks. The budgetary and numerical scope of these rules is not large, nor is their impact on the size of classes in practice.⁶³

There are numerous studies on class size. Several examined the impact of class size on achievements in elementary education (Angrist & Lavy1999; Feniger and Shavit 2011; Asher 2014), while others studied class size by type of supervision, sector, and legal standing (Vurgan 2011; Swirsky and Dagan-Buzaglo 2013). However, the only two studies we were able to find that also addressed the distribution of classes by size and by the deprivation index were the studies by Blass 1999 and 2008. Recent reports on this subject (the Simhon Report 2014 and the Friedman Report 2008) also failed to address this question. All in all, we can summarize the findings as follows:

- A. There is a significant disparity in class size by deprivation index between the Jewish and Arab sectors, with more crowded classes in the Arab sector. The reasons for this include a very large concentration of pupils from high deprivation deciles in the Arab education system, many years of delay in construction, a high rate of natural growth and an increase in the percentage of children attending school, which enlarge the student population and heighten the pressure on the number of students in the classroom.
- B. In both sectors, the percentage of crowded classes is higher in the wealthier deciles.
- C. In the Jewish sector, the percentage of crowded classes in state education is much higher than in state-religious and ultra-Orthodox education.
- D. Following the government decision to reduce crowdedness in classrooms, and as a result of slower growth in the system, we can note a downward trend in the average number of pupils per classroom in elementary and Jr.High schools.

⁶³ This is a personal assessment, of course.

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- E. There are no signs of change in the kindergartens. It is nearly certain that there was even an increase in crowdedness during the years 2103-2015 due to the need to absorb ages 3-4.

Do these findings reflect a policy of intentional discrimination? Apparently not. They do indicate:

- A. A social-political reality of an education system divided into four – if not more – subsystems, with very little movement of pupils and teachers between them.
- B. A demographic reality in which many localities in Israel are often compelled – because of this legal framework – to build small schools in order to meet the demand of a minority of parents seeking state-religious education and/or ultra-Orthodox education.⁶⁴
- C. In addition, the approval to divide classes by gender provides some advantage to state-religious education and ultra-Orthodox education.

Buildings and facilities

As noted above, researchers agree that buildings and facilities have only a slight impact on learning achievements. In general, we can say that this topic has not interested researchers. To the extent that research has been conducted in Israel on buildings and facilities, it was done in the framework of the Institute for Developing School Buildings and Social Welfare. The initiative to establish the institute was led by Dr. Yael Pozner, who headed the Development Division at the Ministry of Education. The institute's work primarily addressed the physical aspects of schools. The most influential factor on the quality of buildings and their deployment is the Ministry of Education's Development Administration, which defines the standards for constructing buildings, calculates the required budget for their construction, and approves the need for their construction. The impact of the local government, parents and various NGOs on the deployment and distribution of buildings among the various population groups is limited and can mainly be expressed in the scope of the building initiative, in interaction with the architects, and in a modest addition to the ministry-approved plan – because the addition is entirely at the expense of the local authority.

For a great many years, the quality of buildings in the Arab sector and in ultra-Orthodox education was much lower than in (non-ultra-Orthodox) Jewish state education. In recent years, in the wake of the ministry's efforts to narrow gaps between the sectors, a different reality developed: The buildings are newer and better in the Arab sector (and especially among the Bedouin the south) than in the Jewish sector (Blass 2006).

⁶⁴ In places with large concentrations of the state-religious or ultra-Orthodox populations, the classes are large and crowded because the rules for class size are the same for the religious and secular sectors.

Informal education and higher education

We cannot conclude this review without devoting to at least a few sentences to two parts of the education system that are not included in formal education: informal education and the higher education system.

Informal education

The Ministry of Education allocates only a few hundred million shekels to informal education, a tiny share of its budget of over forty billion shekels. The sum allocated to informal education should be viewed in light of the fact that children spend most of their time outside of school, and that the widest disparities in investment in education among the various population groups are expressed in spending on informal education – enrichment classes, private lessons, youth movements and so on. These disparities can reach magnitudes of 10:1 and even more. In this area, whose importance is difficult to overstate, the gaps created by the parents are most saliently expressed. And all of the current efforts of the Ministry of Education, local authorities and various NGOs carry relatively little weight and are limited in their ability to narrow the gaps. What is the reason for this reality? We have no answer. Clearly, everyone is aware of the importance of the time that children and teenagers spend outside of the school, so why are such small budgets allotted to these topics? Has anyone devoted serious and deep thought to the potential impact of increasing funding for informal education – in a differential way, with significant affirmative action – from a half a billion shekels to two billion shekels (5% of the Ministry of Education's budget)? What effect could the expanded activity of youth movements, community centers, conservatories, museums and other institutions of culture and sport have on the quality of life of young people and on Israeli society?

Higher education

The second area that is not included in the framework of the current discussion is higher education. The State of Israel subsidizes higher education. This subsidization includes covering the difference between the real cost of a student in the funded institutions and the tuition the student pays. When looking at the composition of the student population by socio-economic background, we clearly see that representation of the weak populations (Arabs, ultra-Orthodox, residents of localities in the weak socio-economic clusters, and others) is low relative to their share of the population. According to 2013 data, for example, 49% of Jewish high school graduates (and 68% of those who met matriculation requirements) had gone on to study in institutions of higher education within eight years of graduating from high school. The comparable figures for Arabs were 30.3% and 50.8%, respectively. In addition, 65% of Jewish high school graduates who lived in wealthy

communities continued to study, compared to only 32% of those who lived in weak communities. In the Arab sector, the figures were 47% and 27%, respectively. (The comparison in this case was between wealthy and middle-class communities.)⁶⁵ It seems that one of the solutions that should be seriously considered is to finance tuition through loans conditioned on the ability to repay them. Such loans could open the gates of higher education much wider for population groups that have difficulty financing higher education.

Part D – Summary and conclusions

So far, we have reviewed the findings of various studies that explicitly or indirectly address the question of allocating resources among the different parts of the population of pupils in Israel according to their socio-economic background. Now it is time to summarize and offer recommendations that arise from the findings, and we will do this by responding to a number of questions:

A. Are there disparities in the allocation of resources among population groups of different socio-economic background and, if so, are they widening or narrowing?

The answer to the first part of this question seems clear-cut. Today there are still wide gaps in resource allocation among the different population groups. Based on data from the Budgetary Transparency website, we can say that today (or, to be precise, 2014) pupils from a wealthy socio-economic background generally receive more Ministry of Education funding than pupils from a weak socio-economic background. The affirmative action policy the Ministry of Education has adopted for decades has failed to radically change this reality. Moreover, there has even been some regression in the level of affirmative action in recent years. The disparity is more acute when taking into account funding from the local government and parents.

B. Who has the greatest impact on the distribution of resources among the various population groups?

The Ministry of Education wields the greatest influence in determining the allocation of resources in the formal education system from ages 3 to 17. It controls the largest budgets and decides on the method of funding, the scope and means of affirmative action, the characteristics of teacher training and the framework for hiring them, the directives that ultimately affect the size of classes, and the standards of construction. Local governments also are influential, but their impact is secondary in importance and is expressed at the level of school maintenance, supplementary funding for hours of instruction and equipment, and

⁶⁵ Table 8.48 Statistical Abstract of Israel, No. 65

mapping of registration regions. This influence is perhaps “marginal,” but in many cases it can make the difference between a sense of well-being and a sense of distress. Parents wield influence through payments to the school, but the resources they invest in their children at home and outside of school have a much greater impact on the disparities. Contrary to what is said about the various NGOs in the context of discussions on privatization, the funding they invest is generally in the direction of narrowing the gaps, but their ability to make an impact is very limited.

C. What should be done today in order to narrow the gaps in resource allocation?⁶⁶

In light of the above, and fully aware of the fact that narrowing disparities in resource allocation is only a necessary but certainly not a sufficient condition for narrowing achievement gaps, it seems that **a differential basket of services** per pupil is the instrument with the greatest potential for addressing the current inequality in **resource allocation**. The differential basket of services should exist at each stage of education, from kindergarten through high school, should include all of the components required for providing suitable education for all pupils, and should be substantial enough to provide a level of education that satisfies most of the parents and convinces them to remain in the public system and not to turn to private education systems. The differential basket of services per pupil must also ensure that the weakest pupil receives effective affirmative action in order to significantly narrow the gaps in learning and educational achievements.⁶⁷

D. How would the adoption of a differential basket of services per pupil affect the disparities in the allocation of funding and hours of instruction?

The ability of the differential basket of services per pupil to narrow gaps in resource allocation and achieve a necessary level of affirmative action, which is an essential condition for equality in achievement, depends on the size of the differential between funding for pupils from the weakest and strongest backgrounds. The percentage earmarked for affirmative action in the budget **does not depend on the size of the budget**; it is determined by a value-based decision on how much assistance should be offered to pupils from a weak socio-economic background. On the other hand, the level of educational service provided to all pupils, and especially those from a weak socio-economic background, is largely a result

⁶⁶ It is perhaps important to emphasize that “narrowing gaps” and “formal equality” in resource allocation is not sufficient to reduce the gaps and achieve equality in achievement. What is needed is a reality of meaningful affirmative action.

⁶⁷ As noted above, there should be a gap of at least 50% in the allocation for a pupil from the strongest socio-economic background versus a pupil from the weakest socio-economic background. The Shoshani Committee recommended a gap of 60%.

of the budget available to the education system. A low budget, even if it is allocated via a differential basket of services per pupil and enables affirmative action at a high level, will create a reality of education services that do not meet parental expectations. Such a reality would necessarily create pressures to leave the public system and/or encourage “gray education.” A differential and comprehensive basket of services per pupil would enable the transfer of all of the services whose funding is today divided between the Ministry of Education and local authorities to the ministry’s exclusive domain, thus resolving the problem of equal participation in education budgets by localities of different socio-economic standing.

E. How would the adoption of a differential basket of services per pupil affect the disparities in the allocation of teaching personnel?

A differential basket of services would enable – by making the required funding available – the Ministry of Education to define and fund a separate and special system of compensation for teachers who work with pupils from a weak socio-economic background. This could provide an incentive for new teachers to work in schools that have a high deprivation index, encourage good teachers currently working in such schools to continue teaching in them, and encourage teachers working in schools that have a low deprivation index to request a transfer to schools with a high deprivation index.

F. How would the adoption of a differential basket of services per pupil affect the disparities in class size?

Funding per pupil – any funding per pupil – encourages greater efficiency in the education system by allowing the school administration to choose between large classes with many hours of instruction per class and small classes with fewer hours of instruction per class. The funding of a differential basket of services per pupil would enable schools with a high deprivation index to have both smaller classes and numerous hours of instruction. On the other hand, schools with a low deprivation index could continue to choose between large classes with many hours and small classes with fewer hours, in accordance with the preference of the educational staff and in coordination with the parents.

G. What databases are available to us today?

There are many databases available today for researchers interested in studying the distribution of resources among pupils of different socio-economic backgrounds.

1. Ministry of Education databases – The ministry today allows access to a large number of databases. The most useful and accessible website is the *Bemabat Rachav* site, which

includes substantial information on educational institutions since 1991. The website does not include data on pupils, budgets or (and most importantly) the deprivation index of the schools.⁶⁸ Another important website is the Budgetary Transparency site. At this stage, it includes budgetary data from 2012 and 2014 for all educational institutions. The website still has several problems, but it is an important site, and as soon as it also includes data from previous years and is updated, it will be an extremely important source for research. Researchers can also request access to the Ministry of Education's databases (files on teachers, pupils, institutions, payments, matriculation exams, etc.) via the virtual research room. In addition, it is possible to ask for specific data from the Ministry of Education under the Freedom of Information Law, though this is an arduous and slow process.

2. Central Bureau of Statistics databases – In addition to the data the Ministry of Education provides to the Central Bureau of Statistics (CBS), the CBS has important data on family expenditures on education that shed important light on the different patterns of spending on education. The local authorities provide data on their allocations for education, and there is also data collected in surveys such as the CBS Social Survey, the census, and so on. All of this data, with various limitations on secrecy and privacy, can be available to researchers (sometimes in the form of raw data, and sometimes processed and available upon request). The process of receiving the data can take a long time and sometimes is not inexpensive, but it is worthwhile and sometimes essential.
3. Research institutes – The National Authority for Measurement and Evaluation in Education and the National Institute for Testing and Evaluation have considerable data on the results of the Meitzav and psychometric exams. Sometimes it is difficult to obtain data from these sources for research purposes. The quality and scope of this data justify investing an effort to make them accessible to the general public.
4. A note of warning – Notwithstanding all of the above, there are large gaps and inconsistencies in the infrastructure of data required for monitoring the distribution of resources between the different population groups. There are also difficulties in coordinating between the Ministry of Education and CBS, and within the ministry itself, stemming from different definitions for the same variables, different methods of data collection, and different ways of processing the data. Researchers sometimes encounter serious difficulty in obtaining information that connects data on budgets, pupils, personnel and salaries in a relevant and substantive way. It is difficult to overcome these difficulties as long as the systems for collecting and processing the various data continue to function in their current format. These systems, which are so vital for developing effective tools for monitoring the

⁶⁸ The Ministry of Education stubbornly refuses to provide researchers access to data on the deprivation index of schools out of a fear of stigmatizing them. Though this fear is perhaps justified, I believe it is possible to overcome it. Knowing a school's deprivation index is critical for any researcher discussing the social aspects of the education system.

distribution of resources, were created at different times by different groups, and are also used today for different purposes. In order to coordinate between all of these systems and develop a single system to serve everyone on an ongoing basis, the following is needed: a view of the larger picture, readiness to deviate from the accepted methods of work, and a reexamination of all of the data systems in the ministry and the methods of data collection. This is a difficult and long process that often entails surrendering positions of power and influence. Thus, this will not happen on its own. It can occur only if and when people at the most senior levels – the minister and the ministry’s director-general – decide that this is important and invest all of their weight in accomplishing this.

Suggestions for future research

The paucity of research on the allocation of resources among the different populations of pupils cannot be attributed to a lack of data available to us today. Rather, it apparently derives more from a lack of interest on the part of researchers, and that is unfortunate. If, nonetheless, researchers seek to address this subject, there are areas of unexplored territory. Our knowledge about the distribution of resources from NGOs at all age levels is almost non-existent. We also possess very scant knowledge regarding the scope and distribution of resources in the local authorities, and it is very difficult to compare them because of their different methods of reporting. Our knowledge is more substantial when we refer to Ministry of Education data, but here too the research on kindergartens and high schools is still in its infancy.

Two topics that await researchers ready to take on the challenge of investigating them are:

- A. The connection between class size and mobility of pupils within the system, and achievements at the end of 12th grade and beyond. It appears that the raw data exists: Ministry of Education files of pupils, institutions and matriculation exams; Meitzav files at the National Authority for Measurement and Evaluation in Education; psychometric exam data at the National Institute for Testing and Evaluation; conscription exams for IDF service; data from institutions of higher education; and employment and income data from personnel and income tax surveys. We need to wisely integrate the data in order to receive reliable information on the benefits of reducing class size for the various population groups.
- B. Transfers of teachers between schools with different characteristics. What typifies the teachers who transfer? What are the prevalent paths for transferring? Who loses and who gains? All of these are questions of great import and it is essential to find answers for them.

In the words of the poet Haim Nahman Bialik: “The road is still long, and the battles many”

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