

"OPEN FOR ME AN OPENING THE SIZE OF A PINHOLE": THE LINK BETWEEN STUDENTS' ACHIEVEMENTS AND THEIR SOCIO-ECONOMIC BACKGROUND: THE ARI'EL UNIVERSITY CENTER AS A CASE STUDY

Nitza Davidovitch

Ari'el University Centre, Ari'el, Israel

E-mail: d.nitza@ariel.ac.il

Dan Soen

Ari'el University Centre, and The Kibbutzim School of Education, Tel-Aviv, Israel.

E-mail: soen@macam.ac.il

*"Open for me an opening the size of a pinhole
and I'll open for you an opening the size of a hall"
(Midrash in Shir Hashirim [Song of Songs] Rabbah, 5).*

Abstract

The paper deals with the link between students' SES and their study achievements. It concentrates on Ari'el University Centre in Israel as a case study. The research illustrated in the paper followed (through a sample) the 4,500 graduates of the Centre. It is based on the computerized data of the institution's administration. Two important findings emerged. First, there is no significant statistical link between the graduates SES as reflected by their locality of residence, on one hand and their scholastic attributes upon registration to the Centre, on the other. The distribution of their grades and scores was not linked to their SES. Second, no significant correlation was found between the conditions of acceptance and the type of graduation certificate received. The probability of a student who is accepted to the institution based on matriculation and psychometric grades to graduate cum laude or suma cum laude is not different than the probability of a student accepted to the institution based on informal criteria. The paper arrives at a cautious conclusion that the graduates scholastic achievements are not significantly affected by their SES.

Key words: *Students' SES, students' scholastic achievements, residential locality and grades.*

Introduction – The Link Between Socio-Economic Status (SES) and Study Achievements Throughout the World

Socio-Economic Status (SES) is one of the variables most studied in the field of education. This also applies to the correlation between academic achievements and socio-economic background of the student. One of the most important articles on this subject, already published in the 1960's (Coleman et al., 1966), supported the standpoint of numerous educators: A strong correlation exists between various types of academic achievements and SES. This stance surmisedly struck roots and was included in introductory books in the field of sociology of education. Thus, Boocock (1972, 32)

maintained that the family characteristic that is the most powerful predictor of school performance is socioeconomic status (SES): “the higher the SES of the student’s family, the higher his academic achievement. This relationship has been documented in countless studies and seems to hold no matter what measure of status is used (occupation of principal bread-winner, family income, parents’ education, or some combination of these).”

Charters (1963, 740) maintained that «SES predicts grades, achievement and intelligence test scores, retentions at grade level, course failures, truancy, suspensions from school, high school dropouts, plans for college attendance...»

And finally St. John (1970, 255) asserted that «So powerful is the apparent effect of social class, that the influence of other background and social factors can be detected only if socioeconomic status (SES) is first neutralized through matching or statistical control.»

Studies conducted in the past era seemingly support the fact that SES has an effect on studies even when controlling mediating variables (Bradley, 2003; Caldas & Bankston, 1997; McLoyd, 1998; Brooks-Gunn & Duncan, 1997; Coleman, 1988). Nonetheless, as time passed, it has become clear that this issue is not so trenchant. In 1982 the results of a meta-analysis of studies focusing on the relation between SES and study achievements was published. This analysis showed that when SES was defined by means of income, education or profession of the head of the family there was indeed a significant statistical correlation between the two variables. However, the correlation was weak (White, 1982).

In 2005 the results of a new meta-analysis (Sirin, 2005) was published which reviewed studies focusing on the relation between SES and school achievements. Sirin surveyed articles published in journals between 1990 and 2000. These articles dealt with a total of 101,157 students in 6,871 educational institutes in 74 independent samples. In this study the results indicated a significant average correlation between SES and school achievements. The abundant studies on this topic continue to grow. Nevertheless not all of the findings point in the same direction. There are studies that show a strong correlation between the variables (Lamdin, 1996; Sutton & Soderstrom, 1999) and in contrast others which have not found any correlation between the variables (Ripple & Luthar, 2000; Seyfried, 1998). The viewpoint which struck root in the 60’s and 70’s has become more moderate and the approach towards the relation between SES and school achievements has become more complex and more cautious.

The Link Between SES and School Achievements in Israel

Numerous papers have been published in Israel, as well, on the link between ethnic groups and education and the link which exists between SES and scholarliness (Ackerman, Carmon & Zucker, 1985; Nahon, 1987; Soen, 1998; Swirski, 1990; Swirski, 1995; Yogev, 1992;). For years there has been an indication of a parallel trend in which the location of residency or the community has been considered a determining factor in an individual’s achievements in education.

In this context, the success rates on matriculation exams, publicized each year by the Ministry of Education, suggest the differences between the center and the periphery of the country, where the term periphery includes the socio-economic background and not simply the geographic location. Even over 30 years ago, at a Conference held at Tel Aviv University in 1978 marking the 30th Anniversary of the State of Israel, one of the speakers, Yitzhak Goldberg, insisted that the *locality of residence* has an effect on the gap forming in the field of education. Since a correlation exists between the location and the possibilities, types and quality of education, the possibilities of education in the central cities are inevitably better than in the so called “development towns” (established to house the masses of immigrants in the 1950s) strewn all over the country (Arian, 1979, 243). Those contending with the inferior educational opportunities in the peripheral towns emphasize the low level of education, the low level of achievements, the high level of dropouts and the low level of expectations from the students themselves. These issues were examined over twenty years ago (Minkowitz, Davis & Bashi, 1980; School of Education Staff, 1981).

In contrast to this wide consensus indicating deficiency in the education systems in the peripheral localities, other opinions have been voiced, disagreeing with the link between the surroundings and the outcome, which seemingly exists between the locality and school achievements. Some have

even drawn attention to the relative advantages bestowed upon children of the lower socio-economic stratum in these peripheral towns. For instance, Ayalon (1992) expressed the opinion, that the prospect of students of the lower class, living in peripheral localities, integrating in academic oriented high schools (which usually leads to attaining a matriculation certificate in contrast to vocational schools) is higher than students of the same status living in central developed cities. In the central cities the youth of the low income population must compete with the high income population for their position in school, and the latter clearly have the upper hand.

Her claim is based on the assumption that the high school tracks offered in the students' area of residence consist of a limited number of available spaces in schools. The students compete for these spaces. In well-to-do, prosperous towns, there are a larger number of available, prestigious spaces than in the peripheral localities. Yet, the problem is that the competition for these spaces is difficult and unsympathetic, clearly leaving students of a low socio-economic stratum in an inferior position. The situation in the development and peripheral towns is totally different in her opinion. The systems in these towns also tend to nurture the elite, and the schools tend not to forgo any of the prestigious study tracks. However, since these are somewhat homogenous towns both from the ethnic and the socio-economic perspectives, the students of the lower socio-economic class compete for the prestigious tracks mainly with one another. Their prospects of being accepted to such tracks in high schools are therefore much higher than had they been residing in a prosperous town whose population is upper middle class.

Another Israeli researcher (Shavit, 1990) also renders that living in peripheral towns with residents of lower socio-economic background provides a certain advantage concerning the prospect of students acquiring a matriculation certificate. Whereas Ayalon investigated the prospect of the Jewish students living in peripheral towns, Shavit examined the prospects of Arab students studying in separate Arab education systems in their hometowns. He claims that actually the separate system has enabled the Arab towns to focus on developing academic study tracks for high schools and place emphasis on attaining a matriculation certificate. This is also the reason why the rate of Arab students who have successfully passed their matriculation tests has continued to rise over the past two decades. In addition Shavit believes that the students of low-income background living in Jewish peripheral towns have greater chances of entitlement to a matriculation certificate when they study in their own towns than when living in well-founded central cities.

Several years ago another very large scale study of this type was conducted (Adler, Lewin-Epstein & Shavit, 2003). The study was based on the analysis of a database consisting of 13,285 students. The independent variables in this study were the type of residential localities and the ethnic origins of the participants. The dependent variables were age, gender, number of siblings, parents' education and the family's standard of living.

The initial findings of the study apparently supported the conventional claim of the existence of a link between the type of residential locality and the school achievements of the students. Lower school achievements were found in the peripheral towns. Nonetheless, the claim of the researchers is that when controlling the background data of the participant's family (parents' education, the family's economic situation and number of siblings) *the influence of the type of locality on the school achievements almost disappeared*. The effect became statistically insignificant. The variables, which had the most effect on the prospect of acquiring a matriculation certificate were found to be the **socio economic status** variables: the ethnic origin and family characteristics such as the parents' education, the family's standard of living and the number of siblings.

It is worthy to note that researchers do not dispute the fact that residents populating peripheral towns are of a lower socioeconomic status in comparison to the population of the central cities in Israel. They claim that neither the setting nor the locality weaken the residents. In their opinion, the lower socioeconomic status of the residents in the peripheral towns stems from two factors. The first is for the simple reason that for years the tendency of the lower socio-economic population to remain in these towns has been high and statistically significant in comparison to the higher status population. In simple terms, the tendency of the stronger population to uproot from the peripheral towns is higher than the weaker population. The stronger population is much more mobile than the weaker. And it moves out of the periphery into the center. Furthermore, there is migration of the lower socio-economic population from the center to the periphery. This migration, according

to the researchers, is mainly due to the low housing costs in peripheral localities compared to the central part of the country. This migration weakens the peripheral settlements even more. In short, researchers believe that the low socio-economic cross section of the population of peripheral areas is mainly due to the fact that the successful children leave these towns. The locality itself does not significantly affect the younger generation's achievements.

Reservations concerning the association between the residential location and school achievements relate to the link between the **surroundings and the outcome**. There is no dispute that a statistical correlation exists between the type of town and student's school achievements. The data speaks for itself regarding this point.

Since the mid 90's the different Ministers of Education have declared their ambition to reach a rate of entitlement to matriculation certification of 50% of each relevant age group. The data show that this aspiration has been recently fulfilled in only half of 96 localities for which data was published. Most of the above localities are *old localities or very well-based towns in the center of the country*. Only 10 of 21 development towns reached a 50% or higher rate of entitlement (Swirski & Schwartz, 2006). The data of 2005 show that the rate of entitlement to matriculation certificates reached 67.4% of all relevant age groups in well-based localities, 46.0% in development towns, 32.2% among the Arabs and 26.6% among the Bedouin in the Negev (ibid, 5)

The data published by the Central Bureau of Statistics show a clear association between the socio-economic level and school achievements. The higher¹ the socio-economic cohort of the locality the higher the rate of students who take the matriculation exam and the higher the rate of entitlement to the matriculation certificate (Table 1). Moreover, a high correlation exists between the rate of entitlement to matriculation certificates in a locality and the average level of income in the locality. In the localities in which the average level of income is high so is the rate of entitlement to the matriculation certificate. In localities in which the level of income is low, the rate of entitlement to matriculation certificates is also low (Swirski & Schwartz, 2006).

Table 1. Twelfth Grade Students Who Took the Matriculation Exams and are Entitled to a Matriculation Certificate by Socio-Economic Classification of their Residential Locality, 2006.

The Socio-Economic Cluster of the Locality	% of 12th Grade Students in the Locality who took the Exams	% of 12th Grade Students in the Locality Entitled to a Matriculation Certificate
1-2	24.4	11.1
3-4	69.4	43.6
5-6	87.0	55.9
7-8	91.0	64.6
9-10	95.8	73.0

Source: Central Bureau of Statistics, 2007, 397.

The relation between SES and school achievements emerges once again when examining the entitlement to matriculation certificates by District (Israel is divided into 6 administrative Districts). On the one hand the districts with high rates of entitlement are: the Central District with a 57% rate among the relevant age groups entitled to matriculation certificates in 2005 as well as the Haifa District with 53% entitlement and Judea & Samaria District with 50% entitlement (Swirski & Schwartz, 2006, 6). On the other hand in the peripheral localities: the Southern District revealed 44% entitlement and the Northern district achieved 48% entitlement (ibid). These two peripheral districts are also the districts with the highest concentration of low socio-economic localities. In the Southern District 65.2% of the local authorities are attributed to the lowest clusters. Only 13% of

¹ The Central Bureau of Statistics currently divides the localities of Israel into 10 clusters which symbolize the socio-economic level of the locality. This is done by weighing several socio-economic variables. Cluster 10 is the highest ((Central Bureau of Statistics, 2006a). In the past the ranking was based on 20 clusters where 20 was considered the highest.

the localities were among the highest clusters. In the Northern District 59.7% of the localities were included in the three lowest clusters and only 10.4% of the localities were among the two highest clusters (Central Bureau of Statistics, 2002).

Currently, the key to social mobility is higher education. An academic degree is a stipulation for such shifts. This fact is also reflected in the growing demand for higher education. It is further expressed by the higher frequency of bachelor's degrees bestowed in the 90's, double the frequency of matriculation certificates bestowed during the period beginning at the establishment of the State of Israel relative to the size of the population and the relevant age group (Center for Social Policy in Israel, 1994). The main barrier to accessibility to higher education is the high school education system. This is the reason we began with a discussion on the relation between SES and entitlement to a matriculation certificate.

There is no need to state that the diverse analyses which have been conducted in Israel have also attempted to explore the relation between the socio-economic background of individuals and their probability to continue their studies after receiving matriculation certificates in order to acquire a higher education (Friedman, Y., 2007; Zussman et al., 2006). For instance, in his study, Friedman suggested that a significant gap exists in the probability of completing a bachelor's degree between students of parents in one of the two highest fifths of SES to those with similar matriculation test scores but whose parents are situated in the lowest fifth of income distribution. The higher education probability gap is large between the different groups. Nonetheless, Friedman adds cautionary reservations stating that part of the gap existing in the probability of attaining a bachelor's degree which allegedly reflects the SES of the students' parents is actually the outcome of additional factors such as the effect of the surroundings and the effort to acquire social status. Close to 20% of the gap existing in the probability to complete bachelor degree studies of those situated at the top of the socio-economic pyramid and those at the bottom are explained by Friedman by the SES of the students' parents.

The relation between SES of the locality and continuation of studies in higher education was mapped in the mid 90's (Swirski & Swirski, 1997). The data shows a clear link between the locality's socio-economic cross-section on the one hand and the rate of students in higher education on the other (Table 2).

Table 2. Link Between the locality's socio-economic cross-section and the percentage of higher education studies in the mid 90's.

Locality	% of Bachelor Degree Students from the General Public	Socio-Economic Cluster Level
Rahat	0.1	1
Umm El-Fahm	0.2	2
Judeide-Maker	0.2	2
Bnei Brak	0.4	2
Lod	0.4	4
Kiryat Malachi	0.4	4
Sederot	0.4	4
Tayibe	0.4	3
Tamra	0.4	2
Ofakim	0.5	3
Dimona	0.6	4
Acre	0.6	4
Ra'anana	1.7	8
Rehovot	1.8	7
Ramat Gan	1.9	8
Kiryat Tivon	1.9	8

Locality	% of Bachelor Degree Students from the General Public	Socio-Economic Cluster Level
Kiryat Ono	2.0	8
Tel aviv	2.0	8
Givatayim	2.1	8
Givat Shmuel	2.3	8
Ramat Hasharon	2.4	9
Lehavim	2.9	9
Meitar	3.0	9
Savion	3.6	10
Omer	5.0	10

Source: Swirski & Swirski (1997)

In the 90's great changes began to develop in the higher education landscape in Israel. The academic system which had been based on 6 research universities for three generations currently includes about 60 higher education institutes. Furthermore, whereas in 1990 a total of about 92,000 students studied in colleges (including colleges of education) towards their bachelor's degree, in 2007 the students studying in colleges totaled about 250,000 (Central Bureau of Statistics, 2007, 440). The most imminent phenomenon in the higher education system is the fact that in 2002/03 academic year the number of students studying towards their bachelor's degree was higher in colleges than in universities. This phenomenon was perceived by those involved in this field as the gate opener to academic education to wide classes of the population to whom these gates had been locked (Brodet, 2003). Even currently the number of students studying towards their bachelor's degree at colleges is higher than at universities. The number of students who studied towards their bachelor's degree in universities in 2006 totaled 76,707 (ibid, 430), constituting much less than the amount of students enrolled in colleges.

This change in the higher education landscape evolved mainly as the result of amendment 10 of the Council for Higher Education Law which was approved in 1995 and is known as "the Colleges Law". Among other things this amendment determined equal criteria for budgeting institutions, and created equality between the degrees bestowed by all the higher education institutions. The intention of the Government and the Council for Higher Education through this amendment was to remove the "glass ceiling", preventing or limiting the range of possibilities of the weaker social groups to integrate in the higher education system and to create new possibilities for stratum mobility (Volansky, 2005, 167).

Two questions have emerged as a consequence of the change which evolved in the field of higher education: First, has the change increased the probability of entitlement to higher education? Second, did it reduce the "social selection" in higher education?

In the beginning of the 90's a new hypothesis took wing in the sociology of higher education. It was crowned with the captivating name of Maximally Maintained Inequality – MMI). This hypothesis (Raftery & Hout, 1993) rejects the assumption that the development of the educational and schooling system reduces the social gap. According to the hypothesis first the students with means, but less qualified than their counterparts jump onto the new wagon of opportunities. The economically weaker groups are not the ones who benefit from the widening of the scope of opportunities, but rather *the weaker students who have the economic means*. They are the ones that are able to attend the new privatized prestigious institutions and to acquire the more prestigious professions at the new institutions (Davies & Guppy, 1997; Karen, 2002). Members of the lower socio-economic stratum are once again left in the margins.

There is a very intense debate over this issue. Some believe that the processes the higher education system have undergone since the 90's have increased the equal opportunities and closed the gap for the lower socio-economic levels (Guri-Rosenblit, 1996, 1999). In contrast others hold the opposite opinion, namely that the colleges bestow their students with "second rate" education and in any case perpetuate the achievement disparities in education which stem from the socio-economic gap (Swirski

& Swirski, 1997). In a study published in 2004 (Soen, 2004), an examination of the socio-economic cross section of students in academic colleges – which, as we recall, were designated to open higher education opportunities for the lower socio-economic population - revealed that the center groups of the average and above average SES levels (clusters 5-10) constitute the absolute majority of the students studying at colleges. In 1990 they constituted 87.6% of the total college student population (Soen, 2004, 162). There is no doubt that the center groups benefit from the new opportunities which have been opened as a result of the changes in higher education in Israel during the last era. Nevertheless, we cannot ignore the fact that the weight of the underprivileged clusters of the students in the higher education system increase as time passes. In 1991 the lower socio economic groups (clusters 1-4) constituted 5.4% of the total student population attending academic colleges. In 2000 they already constituted 12.5% (Soen, 2004). In 2004 the percentage rose to 19.3% (Central Bureau of Statistics, 2006b, 41). In public colleges their percentage reached 23.6% (ibid). The continuation of this growing trend signifies a revolution regarding the accessibility of low socio-economic levels to higher education.

Reviewing the trend of enrollment at higher education institutions in Israel reveals that in the years 1999-2006 there was an increase in the rate of high school graduates who began studies within the first 8 years following their graduation from high school. From the class of 1991, 41.4% of the graduates enrolled at higher education institutions within 8 years and from the class of 1998, 44.2% of the graduates enrolled at higher education institutions within 8 years of their graduation (Central Bureau of Statistics, 2007, 417; calculation of the percentages was done by the authors of this paper). An analysis of the distribution of the enrollees of last year's class based on the socio-economic cluster of their localities still reveals a great differentiation according to SES. Only 28.9% of the graduates from the low socio-economic clusters, 1-2, enrolled at higher education institutions within the first 8 years following their graduation; 68.3% of the graduates of the high socio-economic clusters, 9-10, enrolled at higher education institutions within the same time period (Central Bureau of Statistics, ibid; the percentages were calculated by the authors of this paper). A review of these figures seemingly discloses a direct association between the socio-economic cluster and continuation with higher education at academic institutions (Table 3).

Table 3. Continuation of Higher Education within 8 Years of Graduation from High School in 1998 based on Socio-Economic Clusters of the Residential Locality.

Socio-Economic Cluster by Residential Locality	% of High School Graduates from the Cluster Who Continue their Studies
1-2	28.9
3-4	35.1
5-6	42.6
7-8	55.4
9-10	68.3

Source: Central Bureau of Statistics 2007, 417 (the percentages were calculated by the Authors)

The Correlation Between the Socio-Economic Cluster and Academic Achievements at the Ariel University Center

The analyses presented below, are based on convenience sampling, collected from among the graduates of five departments at the Ariel University Center in 2006: School of Social Work (156 surveyed); The Department of Economics and Business Management (466 surveyed); The Department of Physiotherapy (53 surveyed); School of Architecture (173 surveyed); and the Department of Electrical and Electronics Engineering (1,090 surveyed). A total of 1,938 graduates were included in the survey.

The first important finding emerging from the analyses is the socio-economic portrait of the graduates, excluding the School of Architecture, which reveals that more than half of the graduates come from localities of the lower average socio-economic status (clusters 5-6) or the low socio-economic status (clusters 2-4). Only in the School of Architecture a clear majority of graduates are from the average to above average socio-economic stratum.

In this context it is worthy to note two findings: none of the graduates belonged to localities of the lowest cluster (1), and none of the graduates belonged to the localities of the highest cluster (10). Actually the weight of the graduates from the ninth cluster is also negligible. The relative weight of the graduates from the low clusters (2-4) is lower than the weight of the members of these clusters who enrolled at academic colleges in 2004, and even lower than the weight of those who enrolled in public colleges the same year (see above). The weight of the two highest clusters among the institution's graduates is completely negligent (Table 4).

Table 4. The Distribution of Graduates of the Institution's Departments Surveyed in 2006 according to Socio-Economic Clusters of the Localities (%).

Department	No. of Graduates Surveyed	Clusters 2-4	Clusters 5-6	Clusters 7-9	Total
Social Work	156	17.9	42.9	39.2	100.0
Economics and Business Management	466	12.9	37.3	49.8	100.0
Physiotherapy	53	15.1	37.7	47.2	100.0
Architecture	173	5.8	32.4	61.8	100.0
Electrical & Electronics Eng.	1,090	15.6	32.0	52.4	100.0

Sources: Davidovitch & Cassuto, 2006; Davidovitch & Danziger, 2006; Davidovitch & Shaham, 2006; Davidovitch & Sinuani-Stern., 2006; Davidovitch, Soen, Matalon, & Leibowitz, 2006.)

The first question which should be posed in this context is whether a correlation was found between the students' socio-economic clusters and their scholastic data upon enrollment. In this case a distinction was made between two categories of students: those enrolled based on formal acceptance criteria, i.e. matriculation exam grades and psychometric exam grades and students enrolled based on other informal criteria (including practical engineering school grades or enrichment course grades or other academic school grades). Many of the latter students had a conditional student status ("listen for free", "general studies"). The weight of the second group changes from department to department, though it is not considered insignificant even in the School of Architecture which is an exception in reference to the socio-economic clusters aspect, as explained above. A review of the acceptance terms of graduates of the University Center shows a considerable variance in the various departments in the weights of those enrolled based on formal criteria and those enrolled based on informal criteria. From this perspective the Department of Physiotherapy is extremely exceptional since the vast majority of the students were indeed enrolled based on formal criteria (Table 5).

Table 5. Conditions of Acceptance and Scholastic Data (%) of Graduates of the Different Departments upon Acceptance to Studies.

Department	Informal Acceptance Criteria	Matriculation & Psychometric	Matriculation Average	SD	Psychometric Average	SD
Social Work	19.9	68.6	89.76	6.97	539.27	45.69

Department	Informal Acceptance Criteria	Matriculation & Psychometric	Matriculation Average	SD	Psychometric Average	SD
Economics/ Business Management	27.0	35.8	85.93	8.25	527.65	65.08
Psychotherapy	7.5	92.5	88.09	6.29	610.93	32.42
Architecture	27.4	72.6	82.78	9.42	594.71	59.35
Electrical & Electronics Engineering	35.7	64.3	84.39	6.55	545.26	71.94

Sources: Davidovitch & Cassuto, 2006; Davidovitch & Danziger, 2006; Davidovitch & Shaham, 2006; Davidovitch & Sinuani-Stern., 2006; Davidovitch, Soen, Matalon, & Leibowitz, 2006.

However as previously stated, the first question posed is whether a correlation exists between the clusters and the scholastic data upon enrollment to the institution. The Pearson's correlation coefficient was used for this purpose. The results of the test reveal that **no significant correlation was found between the socio-economic clusters and matriculation and psychometric exam grades for any of the departments**. Moreover, a similar test performed to check if a correlation exists between conditions of acceptance of the institution's graduates showed that no correlation exists in this case as well. In other words, the socio-economic cross-section of the enrollees accepted to studies based on matriculation and psychometric exams is no different from the students accepted based on informal criteria.

Thus, the question arises as to whether a correlation exists between the socio-economic clusters and the graduates' scholastic achievements at the completion of their studies at the institution.

In order to answer this question the graduates were divided into three categories: graduates who received standard certificates ("lawfully completed his/her studies"), graduates who completed their studies cum laude and graduates who completed their studies summa cum laude. Thus, for instance, the percentage of graduates who graduated cum laude or summa cum laude was 15.9% in the Department of Economics and Business Management, but only 4.1% in the School of Architecture (Table 6).

Table 6. Distribution of the Institution's Graduates of the Various Departments by Type of Certificate of Completion Received.

Department	Lawfully Completed Studies	Graduated Cum Laude	Graduated Summa Cum Laude
Social Work	87.7	9.7	2.6
Economics & Business Manag.	84.1	11.6	4.3
Physiotherapy	94.7	5.3	-
Architecture	95.9	4.1	-
Electric & Electronics Eng.	85.2	10.5	4.3

Sources: Davidovitch & Cassuto, 2006; Davidovitch & Danziger, 2006; Davidovitch & Shaham, 2006; Davidovitch & Sinuani-Stern., 2006; Davidovitch, Soen, Matalon, & Leibowitz, 2006.

At this point it was necessary to perform an analysis which led to indirect conclusions, since the analysis of the data performed in 2006 did not lead directly to these findings. Consequently the chi-square test was used to examine the correlation between the conditions of acceptance to the institution and the type of completion certificate received at graduation. It is evident that no significant correlation was found between the conditions of acceptance and the type of graduation certificate

received. The probability of a student who is accepted to the institution based on matriculation and psychometric grades to graduate cum laude or summa cum laude is not different than the probability of a student accepted to studies based on informal criteria. Since it was already established that no significant difference was found between the clusters of these two groups one may cautiously conclude that the socio-economic background of the graduates did not significantly affect their scholastic achievements.

This led to another necessary step. As noted, no significant correlation was found between the clusters and the scholastic data (specifically, matriculation and psychometric exam grades) of the graduates upon their acceptance to the institution. In this context an attempt was made also in 2006 to check whether there is a correlation between the scholastic data of the graduates upon acceptance to the study program and their achievements at the end of their studies. In other words, the cross section of the scholastic data of students from relatively high socio-economic localities was not found to be significantly different from students from low socio-economic localities. A question in itself is whether a correlation exists between scholastic data upon enrollment and study achievements throughout the student's study program. In this case the results are less unequivocal. At the School of Architecture, for instance, the correlation between matriculation and psychometric grades and study achievements expressed through the graduates' graduation certificates was examined. The findings did not reveal a significant correlation between matriculation grades and the graduation certificate ($r=0.03$, $p>0.05$). In contrast a positive correlation was found between psychometric grades and the type of graduation certificate received by the graduates ($r=0.19$, $p<0.5$). The complexity of the findings becomes apparent when reviewing the analysis of the data from the Department of Economics and Administration Management. The correlations found in this department were opposite. Namely, no correlation was found between psychometric grades at the time of enrollment and the type of certificate the graduates received upon graduation. On the other hand a significant correlation was found between the matriculation grades and the type of certificate received ($r=0.29$, $p<0.001$). The findings in relation to the Department of Physiotherapy show that there is no correlation between the matriculation or psychometric grades and the type of graduation certificate received. There again, in the Department of Electrical and Electronic Engineering correlation was found both for the matriculation grades and the graduation certificate ($r=0.13$, $p<0.5$) and the psychometric grades and the graduation certificate ($r=0.17$, $p<0.01$) received by the graduates of the Department. The variance between the departments is great in reference to these findings, thus it is impossible to come to a decisive conclusion.

Conclusion

In this paper an attempt has been done to explore the question of whether there is a link between the socio-economic cross-section of the graduates of the Ariel University Center and their scholastic achievements. This attempt was made both because of the diverse studies conducted worldwide, which have indicated such a link and also because the data from the Israeli Central Bureau of Statistics has pointed to a link between the positioning of the locality in the socio-economic cluster and the percentage of students who successfully pass their matriculation exams. Furthermore, data from the Ministry of Education from the mid 90's show an association between the socio-economic cluster of the locality and the percentage of high school graduates that continue their education at higher education institutions.

An analysis of the data collected at the Ari'el University Centre revealed several interesting findings: First, the findings show that there is no correlation between the socio-economic rating of the student's locality and the student's scholastic data when enrolling at the institution. The differences in the dispersion of the rates of students with and without matriculation certificates are insignificant between those from localities in the low socio-economic clusters and those from the relatively high cluster localities. Moreover, no significant correlation was found between the positioning of the locality in the socio-economic cluster and matriculation and the psychometric grades of the enrollees.

One may cautiously come to a conclusion regarding the correlation between the socio-economic background and scholastic achievements at the institution based on indirect data. According to this

cautious conclusion there is seemingly no significant correlation between the socio-economic background of the student and his academic achievements during his studies. Unfortunately this is not the case when relating to the three different categories of graduates: standard graduation certificate, cum laude certificate and summa cum laude certificate.

In light of the findings of the analyses presented in this paper the relation between socio-economic background and grade achievements should be examined more closely. The categorization of the three types of certificates is insufficient. A study taking into account the socio-economic background of each graduate should be examined parallel to the graduate's grades. Furthermore it would be better to avoid relying on the cluster rating of the locality of the student but rather to refer to the socio-economic decile of the student's family. Nonetheless the findings of the analyses presented in this paper assist in clarifying the contribution of methodical studies at academic institutions to broadening the education of those entering their gates.

References

- Ackerman, W. Carmon, A., & Zucker, D. (eds.) (1985). *Education in an evolving society: The Israeli system*. Kibbutz Meuhad Publishers, Tel Aviv (Hebrew).
- Adler, I., Lewin-Epstein, N., & Shavit, Y. (2003). Social stratification and development towns in Israel: A renewed discussion concerning old questions. *Israeli Sociology*, 5(2),. 365-394 (Hebrew).
- Arian, A. (ed.) (1979). *Israel: A developing society*. Tel- Aviv: Pinhas Sapir Center for Development.
- Ayalon, H. (1992). Residential town, ethnicity and the prospect of students integrating in education. *Megamot*, 34 (3), 382-401. (Hebrew).
- Boocock, S.S., (1972). *An introduction to the sociology of learning*. Houghton-Mifflin, Boston.
- Bornstein M.C., & Bradley R.H. (Eds.) (2003). *Socioeconomic status, parenting and child development*. Lawrence Erlbaum, Mahwah, NJ.
- Brooks-Gunn J., & Duncan G.J., (1997). The effect of poverty on children. *The Future of Children*, 7(2), 55-71.
- Brodet, D. (2003). *Recommendations regarding the higher education system*. A summary of the report for the Annual Economic Conference. The Israel Democracy Institute, Jerusalem (Hebrew).
- Caldas, S.J., & Bankston, C., (1997). Effect of school population socioeconomic status on individual academic achievement. *The Journal of Educational Research*, 90(5), 269-277.
- Center for Social Policy in Israel (1994). *Policy Development of colleges in Israel – position paper and summary of public discussion*. Jerusalem (Hebrew).
- Central Bureau of Statistics (2002). *Characterization and classification of local authorities by the socio-economic level of the population based on 1999 data*, Jerusalem (Hebrew).
- Central Bureau of Statistics (2006a). *Characterization & classification of local authorities by the socio-economic level of the population, 2003*, Jerusalem.
- Central Bureau of Statistics (2006b). *Academic Colleges 2003/2004*, Jerusalem.
- Central Bureau of Statistics (2007). *Statistical Yearbook of Israel*, 58, Jerusalem (Hebrew).
- Charters, W.W. Jr., (1963). The social background of teaching. In N.L. Gage (Ed.): *Handbook of research on teaching* (Ch. 14). Rand McNally, Chicago.
- Coleman, J.S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95-S120.
- Coleman, J.S., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfield, F., & York, R. (1966). *Equality of educational opportunity*. US Government Printing Office, Washington, DC.
- Davidovitch, N., & Cassuto, D. (2006). *Report on the bachelor degree graduates of the School of Architecture, 1997-2006, Internal Report*. Ariel University Center of Samaria, Ariel (Hebrew).
- Davidovitch, N., & Danziger, Y. (2006). *Report on the bachelor degree graduates of the Department of Physiotherapy, 1997-2006, Internal Report*. Ariel University Center of Samaria, Ariel (Hebrew).
- Davidovitch, N., & Sinuani-Stern, Z. (2006). *Report on the bachelor degree graduates of the Depart-*

- ment of Economics and Business Management, 1997-2006, Internal Report.* Ariel University Center of Samaria, Ariel (Hebrew).
- Davidovitch, N., & Shaham, S. (2006). *Report on the Bachelor Degree Graduates of the Department of Electrical and Electronics Engineering, 1997-2006, Internal Report.* Ariel University Center of Samaria, Ariel (Hebrew).
- Davidovitch, N., Soen, D., Matalon, S., & Leibowitz, S. (2006). *Survey of the bachelor's degree program graduates of the School of Social Work, 1997-2006, Internal Report.* Ariel University Center of Samaria, Ariel (Hebrew).
- Davies, S., & Guppy, N. (1997). Fields of study, college selectivity and student inequalities in higher education. *Social Forces*, 75, 1417-1438.
- Friedman, Y. (2007). *Liquidity constraints on the attainment of tertiary education in Israel*, Bank of Israel, Research Department, Jerusalem (Hebrew).
- Guri-Rosenblit, S. (1996). Trends in access to Israeli higher education. *European Journal of Education*, 19, 309-325.
- Guri-Rosenblit, S. (1999). Changing boundaries in Israeli higher education. *Mediterranean Journal of Educational Studies*, 4, 91-114.
- Karen, D. (2002). Changes in access to higher education in the United States, 1820-1992. *Sociology of Education*, 75, 191-210.
- Lamdin, D.J., (1996). Evidence of student attendance as an independent variable in education production functions. *Journal of Educational Research*, 89(3), 155-162.
- McLoyd, V. (1998). Socioeconomic disadvantage and child development. *American Psychologist*, 53, 185-204.
- Minkowitz, A., Davis, D., & Bashi, Y. (1980). *Evaluation of educational achievements of elementary school in Israel.* Jerusalem: Y.L. Magnas (Hebrew).
- Nahon, Y. (1987). *Patterns of educational expansion and the structure of occupational opportunities – the ethnic dimension.* Jerusalem: The Jerusalem Research Institute for the Study of Israel (Hebrew).
- Raftery A., & Hout, M. (1993). Maximally maintained inequality: expansion, reform and opportunity in Irish education, 1921-1975. *Sociology of Education*, 66, 41-62.
- Ripple, C.H., & Luthar, S.S., (2000). Academic risk among inter-city adolescents: the role of personal attributes. *Journal of School Psychology*, 38(3), 277-298.
- School of Education Staff (1981). *Between the center the periphery: Education systems in development towns.* Discussion Paper No. 4/81. University of Tel Aviv (Hebrew).
- Seyfried, S.F. (1998). Academic achievements of African American preadolescents: The influence of teacher perceptions. *American Journal of Community Psychology*. 26(3), 381-402.
- Shavit Y., (1990). Segregation, tracking and the educational attainment of minorities: Arabs and Oriental Jews in Israel. *American Sociological Review*, 55, 115-126.
- Sirin S.R., 2005; Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research*, 75(3), 417-453.
- Soen, D. (1998). Centre and periphery in education and schooling – Another glance at disparity in Israel, *Education and its Surroundings*, 20, 3-18 (Hebrew).
- Soen, D. (2004). Centre and Periphery – A Second Chance for Whom?, *Education and its Surroundings*, 26, 153-166 (Hebrew).
- St. John N., (1970). The validity of children's reports of their parents' educational level: a methodological note. *Sociology of Education*, 43, 255-269.
- Sutton A., & Soderstrom I., (1999). Predicting elementary and secondary school achievement with school-related and demographic factors. *Journal of Educational Research*. 92 (6), 330-338.
- Swirski, S. (1990). *Education in Israel: Schooling for inequality* Tel Aviv: Breirot. (Hebrew).
- Swirski, S. (1995). *Seeds of inequality.* Tel Aviv: Alternatives (Hebrew).
- Swirski, S., & Schwartz, I. (2006). *Success rates in the matriculation exam, by locality: 2004-2005.* Adva Center (Hebrew).

Swirski, S., & Swirski, B. (1997). Higher education in Israel. *Information in Equality*, 8. Adva Center, Tel Aviv (Hebrew).

Volansky, A. (2005). *Academia in a changing environment: Higher education policy in Israel, 1952-2004*. Hakibbutz Hameuchad, Tel Aviv.

White, K. R. (1982). The relationship between socioeconomic status and academic achievement. *Psychological Bulletin*, 91(3), 461–481.

Yogev A. (ed.) (1992). *Educational expansion in Israel*, Tel Aviv: Tel Aviv University and Massada.

Zussman, N., Forman, O., Caplan, T., & Romanov, D. (2006). *The differences between the quality of education in universities compared to colleges: An analysis based on return in the labor market*. Samuel Ne'eman Institute, Technion, Haifa (Hebrew).

*Advised by Itzhak Kandel,
Ari'el University Centre, Ari'el, Israel*

Nitza Davidovitch Head, Academic Development & Assessment Unit, Ari'el University Centre, Ari'el Israel.
E-mail: d.nitza@ariel.ac.il
Website: <http://www.ariel.ac.il>

Dan Soen Head, Multidisciplinary Social Sciences Dept., Ari'el University Centre, Ari'el, Israel;
Professor, Graduate School, Kibbutzim School of Education, Tel-Aviv, Israel.
E-mail: soen@macam.ac.il
Website: <http://www.ariel.ac.il>; <http://www.smkb.ac.il>