

Educational Evaluation and Policy Analysis

<http://eepe.aera.net>

From High School to Higher Education: Curricular Policy and Postsecondary Enrollment in Israel

Audrey Addi-Racah and Hanna Ayalon
EDUCATIONAL EVALUATION AND POLICY ANALYSIS 2008 30: 31
DOI: 10.3102/0162373707313775

The online version of this article can be found at:
<http://epa.sagepub.com/content/30/1/31>

Published on behalf of



American Educational Research Association



<http://www.sagepublications.com>

Additional services and information for *Educational Evaluation and Policy Analysis* can be found at:

Email Alerts: <http://eepe.aera.net/alerts>

Subscriptions: <http://eepe.aera.net/subscriptions>

Reprints: <http://www.aera.net/reprints>

Permissions: <http://www.aera.net/permissions>

From High School to Higher Education: Curricular Policy and Postsecondary Enrollment in Israel

Audrey Addi-Raccah and Hanna Ayalon
Tel Aviv University

Using multilevel models, the authors tested the hypothesis that high schools, through their curricular policies, operate as mechanisms that help members of privileged groups to take better advantage of postsecondary opportunities. The analysis was based on a 7-year follow-up study of 44,666 Israeli students who graduated from 385 high schools in 1991. The main findings were that (a) the curricular experience of students partly mediated between their sociodemographic characteristics and postsecondary enrollment, (b) the curricular arrangements of schools fully mediated the effects of their social composition on their graduates' postsecondary education, and (c) graduates of socially privileged schools made a better use of their matriculation certificates. This afforded privileged students an additional advantage.

Keywords: *curricular experience, curricular arrangements, contextual effects, postsecondary enrollment, hierarchical models*

IN recent decades, higher education has expanded in many educational systems (Trow, 1984). This expansion often introduces into the system new institutions, which, being less selective than the veteran ones, afford new educational opportunities (Arum, Gamoran, & Shavit, 2007). In Israel, the focus of this article, the major expansion started in the early 1990s following the establishment of degree-granting institutions, which are not allowed to be called universities and carry a special name, *michlalot* (usually translated as “colleges”). The *michlalot* (singular *michlala*) are less selective, less research oriented, and usually less prestigious than the universities (Ayalon & Yogev, 2006). Following the establishment of the *michlalot*, the number of undergraduates studying

toward an academic degree rose from 56,000 in 1991 to 150,000 in 2004, more than 50% studying in the *michlalot* (Israel Central Bureau of Statistics [ICBS], 2004).

The social consequences of the expansion of higher education are the focus of extensive research, which has shown that the new opportunities maintain social inequality, as reported in the United States (Brint & Karabel, 1989). In several European countries and in Israel, the new opportunities have often been utilized by high school graduates with superior resources, especially less able members of privileged groups (Ambler & Neathery, 1999; Bolotin-Chachashvili, Shavit, & Ayalon, 2002). These findings support the maximum maintained inequality hypothesis (Raftery

Authors share equal responsibility. We are grateful to the Israel Central Bureau of Statistics and particularly to David Maagan for providing the data for the study. An earlier version of this article was presented at the meeting of the Research Committee on Stratification of the International Sociological Association, held in Rio de Janeiro in August 2004. We benefited from comments of the members of the research committee. We are particularly grateful to Yossi Shavit and to the anonymous reviewers of *Educational Evaluation and Policy Analysis* for their helpful comments.

& Hout, 1993) that members of privileged groups, who have more material, cultural, and cognitive resources take better advantage of new educational opportunities. The advantage of dominant groups in enrollment on a certain educational level is maintained until their participation reaches saturation. Only then will further expansion of that educational level contribute to a decrease of social inequality in enrollment. This view was challenged by Lucas (2001), who referred to a qualitative (the kind of education received at each level), in addition to the quantitative (the level of education obtained), stratification of educational systems. Lucas suggested that in saturated systems, and even in the absence of saturation, privileged groups look for both qualitative and quantitative advantages. Stratification can then occur in the levels of educational attainment and in the type of education attained on a particular level.

This logic implies that even if inequality in access to postsecondary education decreases, qualitative inequality, expressed by the differential prestige of institutions and of fields of study, will remain stable or even increase. In that case, qualitative inequality within educational levels may replace inequality in enrollment rates (Ayalon & Shavit, 2004; Shavit & Kraus, 1990). Recent research shows that higher education is horizontally stratified. Privileged groups enroll in more prestigious institutions and more prestigious fields of study, whereas members of underprivileged groups are more likely to enroll in institutions that belong to the second tier of higher education (Ayalon & Yogev, 2005, 2006; Davies & Guppy, 1997; Karen, 2002). In Israel, for example, among the children of academic parents who enrolled in higher education in 1999, 67% studied in a university and 33% in a *michlala*. The respective proportions of children of parents with lower education were 48% and 52% (Ayalon & Yogev, 2002).

In their efforts to explain the better ability of members of privileged groups to take advantage of new educational opportunities, researchers referred to their social, economic, and educational resources (Karen, 2002; Lareau, 1989); to their better ability to make educational choices (Lucas, 1999); and to the link between the students' social class and the rationality of their decision to base social mobility on educational

credentials (Breen & Jonsson, 2000; Raftery & Hout, 1993). Less attention was paid to the role of structural mechanisms, such as high school. Incorporating secondary school into the process of enrollment in postsecondary education is straightforward, as expressed by Breen and Jonsson (2000): "A model of educational transitions that can take into account the institutional structure of the school system is better able in explaining why educational choices differ according to social origin, sex, ethnicity and other exogenous variables" (p. 759).

The role of high school in shaping postsecondary enrollment may be particularly relevant when an expanded system of higher education offers new opportunities. The ability to obtain information about the new educational opportunities, to decode the new educational options, and to make better choices is affected, according to McDonough (1998), by a combination of the students' social status and the schools' college-choice policy.

Following this logic, in this study we probe the extent to which high school mediates between students' social and educational resources and their postsecondary attendance and destination. In so doing, we follow Reskin's (2003) suggestion to identify the mechanisms that link the individual's ascriptive characteristics (i.e., unachieved traits, such as gender, parental education, ethnicity) to various outcomes in order to understand ascriptive inequality. Reskin refers mainly to workplace outcomes, but she notes that this logic can be useful in other areas such as education.

High School and Enrollment in Higher Education

Most studies that attempted to assess the independent role of schools in shaping postsecondary attainment concluded that the effect of schools context is secondary to individual student effects. Karen (2002), who analyzed the postsecondary destination of American high school graduates, included dummy variables for urban and rural schools and for private versus public schools. Although schools had some effect on enrollment in higher education, most students' sociodemographic characteristics retained their influence after controlling for school variables. Espenshade, Hale, and Chung (2005),

who focused on the effect of the school achievement level and its interaction with students' academic merit on attendance in elite colleges, concluded that context is marginal compared with individual characteristics. Perna and Titus (2005), who concentrated on parental involvement in school as a predictor of postsecondary attendance, included school's social, cultural, and human capital in their analysis. Although school's capital exerted some effect on postsecondary attendance, students' personal characteristics retained their effect after controlling for school's capital. Does this imply that schools do not really matter? Representing schools by their curricular policy, we learn otherwise. A good example is the study by Huang and Weng (1998), who, in analyzing the effect of ethnic desegregation on minorities' postsecondary attendance, incorporated the curricular placement of students and the academic orientation of schools (defined as the rates of academic enrollment) as predictors of postsecondary attainment. High rates of academic enrollment increased the school average of minorities' chances of postsecondary education entrance and college completion. The authors concluded that academic curriculum was a central factor in improving minority students' chances of postsecondary education.

The effect of schools' curricular policy on their graduates' postsecondary careers can occur through two paths: students' curricular experience and schools' curricular arrangements. Contrary to Huang and Weng (1998), who referred to both paths, most research on this topic studied the first. It noted such curricular experience as track placement and pattern of course taking as a major resource for students' advance to different types of higher education institutions. Academically oriented curricular experience proved linked to higher individual achievements (Gamoran, 1992; 1993; Hallinan, 1994; Hoffer, 1997; Teitelbaum, 2003) and to better chances of enrolling in postsecondary education in general and in more prestigious institutions in particular (Davies & Guppy, 1997). Adelman (2006) showed that an academically challenging curriculum was an important factor in predicting college entrance and completion of students. In addition, curricular experience was shown to affect students' college choice aspirations and predisposition (Hossler & Stage, 1992; Lucas, 1999; Ono, 2001; Perna & Titus, 2004; Plank & Jordan, 2001; Trusty, 2002).

The second component of curricular policy—school's curricular arrangements and their contextual meaning—has enjoyed more limited research. McDonough (1998), who, in a study of four high schools in California, explored schools' curricula and their college counseling policy, distinguished college-choice organizational culture from college-choice organizational climate. The former refers to whether the school's curriculum and mission are college preparatory, whereas the latter refers mainly to college counseling. McDonough found that the climate of schools and the college-choice organizational culture affected both college entrance and destination. This suggests that the school's curricular arrangements, which represent its academic orientation and, using McDonough's term, its organizational habitus, may shape students' decision making and affect their postsecondary choices beyond their individual experience. That is, the school's academic orientation produces an atmosphere that affects the postsecondary choices of all students (Perna & Titus, 2004; Huang & Weng, 1998).

The link between schools' curricular arrangements and their students' curricular experience is usually in the expected direction: Curricular arrangements that enlarge the opportunities to learn increase the probability of academically oriented curricular experience. Teitelbaum (2003), for example, showed that *ceteris paribus* schools that offered academic tracks or an academically oriented curriculum increased the likelihood of the individual student's enjoying an academically oriented curriculum. Adelman (1999) and Stevenson, Schiller, and Schneider (1994) also reported that students have better opportunities to learn when their school offers a rigorous academic curriculum, which includes, for example, advance studies in math or science. Yet they later emphasized that providing the opportunity to learn is not sufficient, because students differ in the advantage they take of academically oriented curricular arrangements. Students' curricular experience and their schools' curricular arrangements are thus two separate components of school curricular policy, and they may carry different postsecondary outcomes.

The major purpose of our study is to test whether the curricular arrangements of schools and the curricular experience of their students mediate between the students' ascriptive characteristics and their postsecondary attainment, taking

into consideration a variety of school characteristics. We go beyond previous research in two major aspects: (a) We incorporate in our analysis various aspects of the curriculum at both the individual level (e.g., track placement, patterns of course taking) and the school level (e.g., academic versus vocational orientation, enrollment rates in central courses), which together represent schools' curricular policy, and (b) we control for a variety of school characteristics (e.g., affiliation; social, ethnic, and pedagogic composition). By this strategy, we can estimate the effect of several components of curricular policy on the link between students' ascriptive characteristics and postsecondary attainment and partition it from other school characteristics.

We are particularly interested in separating the school's curricular arrangements from its social composition (i.e., parents' socioeconomic profile). The tight link between a school's curricular arrangements and its social composition is well documented. Several studies showed that schools with a high proportion of privileged students concentrate mainly on academic courses (Hallinan & Sorensen, 1983) and offer challenging curricula that include advanced courses in prestigious school subjects (Ayalon, 1994b; Spade, Columba, & Vanfossen, 1997). These schools equip students with better qualifications and encourage them to enroll in higher education. Heck, Price, and Thomas (2004) indicated that sociocurricular position, which is a combination of the school's social composition and the students' patterns of course taking, was related to the students' plans for higher education and their actual enrollment. These authors argued that the "sociocurricular positions occupied by groups of students within the school reproduce the cultural capital of their parents residing within the community" (p. 323).

The close tie between the school's curriculum and its social composition led researchers to doubt whether the effect of the school's curriculum on higher education enrollment does in fact mirror the effect of its social composition. As expressed by Coleman (1990), "It is not possible to tell conclusively . . . whether the accelerated program is truly effective in providing additional opportunity, or merely an additional indicator of a student body with high achievement or of a community with high educational interest" (p. 102).

The second purpose of our study is to differentiate the effect of a schools' curricular policy from that of its social composition. We ask whether schools' curricular arrangements exercise their effect independently of their social composition.

We may expect an academically oriented curricular policy and a higher social milieu (usually represented by parents with more years of schooling) to enhance the average chances of students enrolling in higher education; still, their effect on the odds of enrollment of different social groups is not straightforward. Different studies have yielded mixed conclusions regarding this topic. Studies indicating that the academic track increased the likelihood of all high school graduates enrolling in postsecondary education (Lucas, 1999; Ono, 2001; Owings, Medigan, & Daniel, 1998) showed that track effect was particularly strong for students with low academic performance (Alexander, Entwisle, & Thompson, 1987). The implication is that a higher social milieu is particularly beneficial for less talented students, who often are members of disadvantaged groups. This conclusion contradicts the vacancy competitions approach, which claims that schools with better social composition are more competitive. The probability of assignment to advanced courses may thus be reduced for all students (Gamoran & Mare, 1989; Hallinan, 1994; Kilgore, 1991; Kilgore & Pendelton, 1993) but particularly for members of disadvantaged groups (Ayalon, 1994a). This may decrease the likelihood of higher education enrollment for disadvantaged students studying in schools that absorb children of better educated populations. Huang and Weng (1998) corroborate this assumption by showing that the chances of minority students who studied in inferior academic programs enrolling in higher education were particularly low when their schools had high social composition. In light of these inconclusive findings, our study tests whether a higher social milieu was beneficial or harmful for students with different curricular experience. We do so by analyzing the interaction between students' curriculum experience and schools' social composition.

Research Purposes

Accordingly, our research, which analyzes the postsecondary attainments of high school graduates in Israel, has three purposes:

1. To test whether the schools' curricular policy (the curricular experience of students and the curricular arrangements of schools) mediates between students' ascriptive characteristics and their postsecondary attainment.
2. To test whether the schools' curricular arrangements have an effect on their students' postsecondary attainments independent of its social composition.
3. To test whether a high social milieu is beneficial or harmful regarding the postsecondary attainments of students with different curricular experience.

Israel provides a promising setting for studying the mediation of high schools' curricular policies between their graduates' sociodemographic characteristics and their postsecondary enrollment. This facility is due mainly to two characteristics of the Israeli system: Israeli high schools differ in their curricular policy, and a school's curricular policy affects the type and the value of its graduates' matriculation certificate. This certificate is a prerequisite (albeit not sufficient in itself) for admission to higher education. Postsecondary enrollment in Israel is thus closely linked to secondary education.¹ We now briefly describe the Israeli system and its relevant qualities.

Secondary and Higher Education in Israel

Secondary education in Israel consists of two tracks: the academic track, which absorbs about 60% of all students, and the technological track. These two tracks represent different academic orientations. The academic track prepares students for the matriculation (*bagrut*) examinations, which are standardized tests, mostly taken at the end of 12th grade. The technological track partly prepares students for a diploma, and the proportion of students eligible for *bagrut* is much lower than it is on the academic track (Ayalon & Shavit, 2004). In 2004, about 62% of 12th graders who studied on the academic track were entitled to the matriculation certificate, compared with 48% of students on the technological track (ICBS, 2006). The technological track often absorbs students from disadvantaged groups and is frequently perceived as a major factor in the persistence of social inequalities in Israel (e.g., Shavit, 1984). The divisions

between the two tracks are clear and formalized. Students study at academic or at vocational schools or in different classes at comprehensive schools.

The curriculum on each educational track is highly differentiated by school subjects. Each subject may be offered at different levels, usually ranging from 1 to 5 units. The scope and content of the learning materials of the different units are determined and approved by the Ministry of Education. The units correspond to the level and degree of difficulty of the subject matter. One unit equals to 1 weekly hour for 3 years or 3 weekly hours for 1 year. To clarify the issue, we shall use the curricula of the different levels of mathematics as an example. The purpose of the mathematics curriculum is to expose all students to the same topics as far as possible. Thus, the different levels are distinguished according to the degree of difficulty and the learning in depth of the subject matter. For example, all students study Euclidean geometry, but at the 3-unit level, they study only properties of geometrical figures; at the 4-unit level, the program includes some formal proofs; and at the 5-unit level, the major part of the program is devoted to formal proofs. In all subjects, the number of units of study determines the course type: Courses that offer 1 to 3 units are defined as basic; courses that offer 4 or more units are defined as advanced. Compulsory subjects are history, literature, Hebrew, Arabic (in Arab schools), Bible studies (in Jewish schools) at the basic level of 1 or 2 units, and mathematics and English at the basic level of 3 units. In addition, students can choose various optional subjects, all given at the advanced level of 4 or 5 units. Students on the academic track can choose among the sciences, liberal arts, social sciences, or foreign languages; and those on the technological track, among technological subjects (such as electronics, accounting, and many more). The school's policy regarding courses offered and patterns of course taking largely depends on decisions made by its leadership (Ayalon, 1994b). This produces between-school variation in the offer and the taking of advanced subjects. Schools that absorb children of socially privileged parents and academic schools usually offer a wider range of advanced subjects, particularly mathematics and sciences, which are very

highly regarded in Israel (Ayalon, 1994b). So in addition to the formal tracking of students into academic or technological programs, Israeli secondary education consists of de facto tracking, which, as in the United States (Lucas & Berends, 2002), is based on the levels of the courses that the students take.

The different course-taking patterns yield different bagrut certificates, which are crucial for entry into higher education. In Israel, admission to the universities and the michlalot is based almost exclusively on test results: bagrut grades and a psychometric score. The latter is based on the psychometric test, which is a general aptitude test required by all universities and most michlalot. The bagrut certificate is differentiated into a basic certificate, which is not accepted by the universities or by some michlalot, and university qualifying certificates (Ayalon & Shavit, 2004). The basic bagrut includes the compulsory subjects and at least one advanced subject but not advanced English. Students can be eligible for a basic certificate if they fail mathematics, provided they have not failed any other subject. To win a university-qualifying bagrut certificate, a student has to pass, in addition to the demands of the basic bagrut, advanced English and at least basic mathematics.

English and mathematics have special status in the curriculum of Israeli high schools (Ayalon & Gamoran, 2000). Israeli universities, which give bonuses for all advanced subjects, award special bonuses for mathematics and English. A certificate does not have to include advanced mathematics to be valid for university admission, but mathematically oriented university departments (such as engineering or computer studies) do require it. Moreover, ambitious high school students take advanced mathematics even when not planning to pursue a mathematically oriented career, because they believe that it increases their chances of being accepted for all university departments, a belief that is a near-myth (Ayalon & Yogev, 1997).

Students who take advanced mathematics are usually considered the school's elite, and many of them take advanced science courses, which are also highly regarded (Ayalon & Yogev, 1997). Because of the special value of English for the university-qualifying bagrut, students who take advanced mathematics (and who are usually considered the right clientele for postsecondary education) are assigned to advanced English

courses even if their achievements in English are not impressive.²

This pattern is more frequent among students from privileged social groups (Ayalon & Yogev, 1997), and it increases their likelihood to be eligible for the "best" bagrut, which includes advanced English and mathematics.

Data, Variables, and Method

Data

The research is based on a 7-year follow-up survey of 44,666 12th graders who studied at 385 state high schools and graduated in 1991. These students account for about 75% of all the Israeli population of 12th graders. Data on the students' background characteristics and bagrut certificate were collected from Ministry of Education files. Data on enrollment in higher education institutions between 1991 and 1998 (by which time nearly 40% of these high school graduates had enrolled) were provided by the institutions. The two data sets were matched by the ICBS according to ID numbers. All data were obtained from the ICBS. A comparison between the sample and the population of 12th graders according to several sociodemographic and educational characteristics showed that the sample is representative of the population.³

Variables

Dependent variable

Postsecondary enrollment. The variable included three categories: enrolled in a university, enrolled in a michlala (college), and did not enroll. We are aware that our sample was censored, as graduates might have enrolled in higher education after 1998. In 1998, however, most graduates (98%) were 25 to 26 years old, and as most undergraduate students in Israeli higher education have enrolled by that age, the right censoring was not expected to have a significant effect on the findings.

The explanatory variables were measured at the individual (student) level and at the school level. Following the research rationale, the sociodemographic characteristics of the students and the social composition of their schools were defined as the independent variables; the scholastic ability of the students, their curricular experience, and the

curricular arrangements of their schools were defined as the mediating variables. Four school-level variables—sector, size, percentage of academic teachers, and percentage of female students—were added to the analysis as controls, following previous research (details are presented later) showing that they affected educational achievement.

Independent variables at the individual level: Sociodemographic characteristics

Gender. Gender was coded female (1) or male (0).

Father's education. Father's education was categorized according to the four categories used by the ICBS as follows: 1 to 8 years of schooling (1), 9 to 12 years (2), 12 to 15 years (3), 16 years or more (4). To provide a clearer picture, the variable is coded in the descriptive part as fathers with some postsecondary education (at least 13 years of schooling) and fathers with secondary or lower education. We are aware of the limitation of using father's education as the sole indicator of social background. However, it was the only available variable measured by the ICBS. Unfortunately, the ICBS did not provide information on mother's education or other relevant socioeconomic indicators.

Ethnic origin. Ethnic origin was a dummy variable coded 1 for Mizrachim (father originated from the Middle East or North Africa; generally regarded as the disadvantaged Jewish ethnic group in Israel) and 0 for all others (Ashkenazim—father originated from Europe or America—the privileged Jewish ethnic groups, and second-generation Israeli Jews). This variable was relevant only to Jews.

Nationality. Nationality was coded Arab (1) or Jewish (0).

Independent variables at the school level: Social composition

Mean father's education. This variable was aggregated from the student-level data. It was computed as the mean years of schooling of students' fathers in each school. We use this variable as a proxy for the school's social composition. A higher mean of father's education represents a higher social milieu.

Mediating variables at the student level

Test scores. Mean score in English and mathematics bagrut exams served as a proxy for scholastic ability. This variable was available only for students who were eligible for a bagrut certificate.

Curricular experience. Track placement was coded as academic (1) or technological (0).

Bagrut type. We defined four categories, which represent patterns of course taking in high school:

1. Basic bagrut includes the basic requirements and is not accepted by the universities for admission but is accepted by most michlatot.
2. Bagrut with English includes advanced English in addition to the basic requirements and is accepted by the universities for admission.
3. Bagrut with English and mathematics ("best" bagrut) includes advanced English and advanced mathematics in addition to the basic requirements and is accepted by the universities for admission.
4. *Not eligible* usually implies that the student took only some of the exams or none.

In the multivariate analysis, "best" bagrut served as the reference category.

Mediating variables at the school level: Curricular arrangements

School type. *Technological, academic, or comprehensive* represented three different curricular arrangements. School type was determined according to the percentage of students on the academic track. A percentage of 0% to 10% classified the school as technological, 90% to 100% classified it as academic, and 11% to 89% classified it as comprehensive. In the multivariate analyses, school type was defined by two dummy variables: academic, coded 1 for academic high schools and 0 otherwise, and technological, coded 1 for technological schools and 0 otherwise. Vocational schools served as the reference category.

For each school, the following three variables were aggregated from the student-level data:

- Proportion of graduates eligible for a basic bagrut.
- Proportion of graduates eligible for bagrut with advanced English.

Proportion of graduates eligible for bagrut with advanced English and mathematics.

All these variables ranged from 0 to 1. The three variables were aggregated from the student-level data. As noted, matriculation type reflects course taking at high school, and we referred to the proportions of eligibility for the different matriculation types as an indicator of the school's curricular policy in offering advanced courses and in encouraging students to take them. One may argue that these differences are a result of differences in students' scholastic abilities in the different schools. True, but this does not alter the fact that the schools differ in their academic orientation.

Control variables at the school level

Sector affiliation. The Israeli educational system is divided into educational sectors, which are distinct in their sociocultural characteristics and curricular arrangements (for more details, see Ayalon & Yogev, 1996; Benavot & Resh, 2003). The sector variable originally included three categories: Jewish state, Jewish state-religious, and Arab. From these categories, we constructed two dummy variables: religious, coded 1 for Jewish state-religious schools and 0 otherwise, and Arab, coded 1 for Arab schools and 0 otherwise. Because almost all Arab students study at Arab schools and no Jewish students study at them, we did not include Arab as a school variable in the multivariate analysis.

Proportion of female students. For each school, we computed the proportion of female students, ranging from 0 to 1. Variation in schools' gender composition stems from two sources: (a) About 60% of the 102 state-religious schools in the sample were single gender; (b) girls were over-represented in the academic schools, and boys in the technological schools.

Proportion of teachers with academic degree. This variable was computed for each school as the proportion of teachers who held a BEd, BA, MA, or PhD degree. The proportion, ranging from 0 to 1, was provided by the ICBS. The variable represented the pedagogic quality of the school that may affect students' predisposition to higher education through counseling and information gathering (Hamrick & Stage, 2004; McDonough, 1997).

School size. School size was measured by the number of students in 12th grade. Because of its skewed distribution, we computed the natural log transformation of this variable. Previous research showed that this variable is significantly related to the school's curricular arrangements (e.g., Ayalon & Yogev, 1997).

Method

We analyzed the data by multinomial hierarchical analysis (Raudenbush & Bryk, 2002) using hierarchical linear modeling (HLM) software. This method allows incorporation of various levels in the same statistical analysis. Here we combined characteristics of the high school graduates and characteristics of their schools, which permitted simultaneous estimation of the effect of graduates' characteristics and their high schools' characteristics on enrollment in postsecondary studies.

The dependent variable consisted of three categories: enrolled in a university, enrolled in a michlala, and did not enroll, the last serving as the reference category. We limited the analysis to graduates eligible for bagrut, because they constitute the potential candidates for higher education. In Israel, students who are not eligible for bagrut cannot apply for higher education. Thus, these graduates are irrelevant for our analysis, which focuses on higher education enrollment and destination of high school graduates who can make choices. To overcome problems of selectivity, we included in the model the probability of each individual being eligible for a bagrut certificate.

The analysis consisted of two models. The first included the graduates' sociodemographic characteristics and all school characteristics except the variables representing curricular policy. In the second model, variables representing the graduates' curricular experience and their high school's curricular arrangements were added to the equation. We also included the students' score in English and mathematics mainly as control. By comparing the first and the second models, we estimated the mediating effect of the curricular variables.

The individual-level equation for enrollment in postsecondary studies is

$$\eta_{mij} = \log\left(\frac{\phi_{mij}}{\phi_{Mij}}\right) = \beta_{0j(m)} + \beta_{1j(m)} X_{1ij} + \dots + \beta_{kj(m)} X_{kij}$$

Results

Graduates' Characteristics, Their Curricular Experiences, and Their Schools

where η_{mij} is the log odds that student i in school j belongs to either category m (university or michlala) compared to the reference category M (not enrolling) as a function of his or her personal characteristics k . m equals the number of the categories of the dependent variable minus 1. As the dependent variable has three categories, there are two individual-level equations: η_{1ij} and η_{2ij} . We allowed the slopes of father's education and of the dummy variables representing matriculation type to vary between schools. All other slopes except that of gender were fixed (i.e., were held constant across schools), because their between-school variance did not reach statistical significance. Because our study did not concentrate on gender, we fixed its slope despite the statistical significance of its variance component to save degrees of freedom.

In the school-level equations, the intercept, $\beta_{0j(m)}$, and the slopes of father's education and of the various matriculations served as dependent variables and were modeled as a function of the school's characteristics. At first, the intercept and the slopes were modeled as a function of all the school variables. For parsimony, in the final models, only statistically significant school variables were included in the equations of the slopes. When we allowed a slope to vary between schools, we centered the respective variable around the school mean. Otherwise, all continuous variables were centered around the grand mean, and all dummy variables retained their original form. We performed multivariate hypothesis tests on significant parameters for the variables that were centered around the group's mean and aggregated up to the school level. For these variables, the hypothesis test determined whether the statistically significant coefficients of school-level variables that were aggregated from student-level variables represent contextual effects beyond the corresponding student-level effects (see, e.g., Perna & Titus, 2005).

The equation of the intercept is as follows:

$$\beta_{0j(m)} = \gamma_{00(m)} + \gamma_{01(m)} + \dots + \gamma_{0l(m)} + e_j$$

The average log odds of a student in school j belonging to m versus M (enroll in a university or a michlala versus not enrolling) are a function of the general log odds of belonging to m , school's characteristics, and an error term.

The distribution of the high school graduates according to their sociodemographic characteristics, their bagrut type, and higher education enrollment are presented in Table 1.

The first four columns of Table 1 present the graduates' bagrut types according to their sociodemographic and educational characteristics. The table shows the advantage of graduates of the academic track, graduates with higher test scores, children of more educated fathers, and Jewish graduates of non-Mizrachi origin in obtaining better certificate and enrolling in higher education.

The last row of the table shows that enrollment rates increased with the quality of the bagrut certificate: 78% of graduates with the bagrut with advanced English and mathematics ("best" bagrut) enrolled in higher education, compared with 55% of graduates eligible for bagrut with English and 36% eligible for basic bagrut. Graduates not eligible for bagrut did not enroll in higher education.

Table 2 presents selected relations among school characteristics. The correlations, presented at the bottom of the table, mark the link between the schools' curricular arrangements and their social and pedagogic compositions. Mean father's education and the proportion of academic teachers were positively related to the proportion of those eligible for university-qualifying certificates, particularly, the "best" bagrut (the correlations are .65 and .48, respectively), and negatively related to the proportion of those not eligible (correlations of -.57 and -.51) and not related to the proportion of those eligible for the basic certificate.

Table 2 also shows that an academically oriented curricular policy characterizes Jewish (both state and state-religious) more than Arab schools (the proportion of eligible for "best" bagrut were 20% and 14%, respectively), and academic schools more than technological or comprehensive schools (the proportions of eligible for "best" bagrut were 27%, 11%, and 17%, respectively). On the whole, better certificates were linked to better social and pedagogic environments.

TABLE 1

Proportion of Graduates Eligible for Various Bagrut (Matriculation) Types and of Enrollees in Higher Education According to Sociodemographic and Educational Characteristics

	Basic Bagrut	Bagrut With Advanced English	"Best" Bagrut	Not Eligible	Total (N)	Proportion Enrollees in Higher Education
Total	0.17	0.18	0.25	0.40	44,666	0.38
Gender						
Female	0.18	0.21	0.21	0.40	23,855	0.42
Male	0.14	0.13	0.29	0.44	20,811	0.33
Ethnicity						
Arab	0.26	0.08	0.14	0.52	6201	0.21
Mizrachi Jews	0.17	0.17	0.16	0.50	15,212	0.29
Non-Mizrachi Jews	0.14	0.22	0.34	0.30	20,673	0.49
Father's years of schooling						
13+	0.12	0.22	0.46	0.20	12,478	0.63
Less than 13	0.18	0.16	0.16	0.50	32,188	0.28
High school track						
Academic	0.18	0.23	0.32	0.27	26,448	0.52
Technological	0.15	0.10	0.13	0.62	18,218	0.18
Test scores						
Mean	66.811	78.539	81.479	—	74.839	—
SD	7.567	7.159	7.900	—	10.793	—
Proportion of enrollees in higher education	0.36	0.55	0.78	0.04	0.38	—

TABLE 2

Relation Between Proportion of Graduates Eligible for Various Bagrut (Matriculation) Types and School Characteristics

	Proportion Eligible for Basic Bagrut	Proportion Eligible for Bagrut With English	Proportion Eligible for "Best" Bagrut	Proportion Not Eligible
Total (N = 385)	0.12	0.19	0.20	0.49
Jewish state school (n = 283)	0.13	0.19	0.20	0.50
Jewish state-religious school (n = 102)	0.12	0.20	0.20	0.48
Arab school (n = 70)	0.20	0.16	0.14	0.51
Academic high school (n = 154)	0.14	0.22	0.27	0.36
Technological high school (n = 90)	0.08	0.13	0.11	0.68
Comprehensive high school (n = 141)	0.14	0.20	0.17	0.49
Selected correlation among school characteristics				
Mean father's education	-0.04	0.41**	0.65**	-0.57**
School size	0.10**	0.21**	0.38**	-0.36**
Proportion of female students	0.06	0.27**	-0.05	-0.11**
Proportion of academic teachers	0.24**	0.31**	0.48**	-0.51**

** $p < .05$.

Does Curricular Experience Mediate Between the Ascriptive Characteristics of the Students and Enrollment in Higher Education?

Tables 3 and 3A present the findings of two multinomial hierarchical analyses that examined the effect of individual and school characteristics on the odds of enrolling versus not

enrolling in universities or michlalat. In these analyses, we referred only to students eligible for the bagrut certificate required for admission to higher education. As already indicated and shown in Table 1, students who were not eligible for a bagrut certificate could not continue to higher education (only 4% of these students enrolled in higher education). To overcome

TABLE 3

Hierarchical Linear Model Results for University and Michlala (College) Enrollment ("Not Enrolled" Omitted)

	University Enrollment		Michlala Enrollment	
	Model 1	Model 2	Model 1	Model 2
Intercept	-0.964**	-1.337**	-1.224**	-1.378**
Gender female	0.411**	0.625***	0.586**	0.649**
Ethnicity (non-Mizrachi Jews omitted)				
Mizrachi	-0.155**	-0.120**	-0.071	-0.028
Arab	0.659**	-0.563**	0.187	-0.188
Father's education	0.462**	0.192**	0.186**	0.107
Predicated probability of <i>bagrut</i> (matriculation) eligibility	-0.679	0.783	0.678	1.093
Mean score in English and math		0.069**		0.016**
Academic track		0.960**		0.572**
Matriculation type ("best" <i>bagrut</i> omitted)				
Basic <i>bagrut</i>		-1.354**		-0.539**
<i>Bagrut</i> with English		-1.385**		-0.521**
Intercept as outcome				
Proportion female	0.505**	0.045	-0.102	-0.393
State-religious school	0.483**	0.096	0.527**	0.431**
Mean father's education	1.481**	0.259	0.571**	0.154
Proportion academic teachers	1.147**	-0.116	0.090	-0.584
School size (log)	0.300**	-0.007	0.029	0.003
School type (vocational omitted)				
Academic		-0.032		0.004
Comprehensive		0.174		-0.105
Proportion eligible for basic <i>bagrut</i>		-1.975**		-0.682
Proportion eligible for <i>bagrut</i> with English		-2.976**		0.493
Proportion not eligible		-1.959**		0.347
Father's education slope as outcome				
Mean father's education	-0.056	-0.024	-0.076	-0.062
Size (log)	0.071**	0.047	0.008	0.009
Basic <i>bagrut</i> slope as outcome				
Size (log)		-0.047		-0.145**
Mean father's education		1.259**		0.554**
Proportion not eligible		0.894**		0.218
<i>Bagrut</i> with English slope as outcome				
Mean father's education		0.024		0.075
Proportion eligible for university qualifying certificate		1.512**		0.351

** $p < .05$.

TABLE 3A

Summary of Models Fits

Model	University Enrollment			Michlala (college) Enrollment		
	Variance Competent	χ^2	Significance	Variance Competent	χ^2	Significance
Model 1						
Intercept	.35020	1853.52	.000	.42052	1264.33	.000
Father's education slope	.17684	1264.33	.188	.09197	332.75	.314
Model 2						
Intercept	.24593	4834.21	.000	.15910	2384.22	.000
Father's education slope	.01115	328.62	.009	.00954	290.58	.186
Basic <i>bagrut</i> (matriculation) slope	.12821	551.33	.000	.14267	362.13	.000
<i>Bagrut</i> with English slope	.08222	335.38	.004	.07727	281.28	.306

selection bias, we incorporated in the analyses the predicted probability of bagrut eligibility.⁴

Table 3 shows two contrasts. The first contrast (columns 1 and 2) is between enrolling in a university versus not enrolling, and the second (columns 3 and 4) is between enrolling in a *michlala* versus not enrolling.

Recall that the first purpose of the study was to examine the mediating effect of students' curricular experience and schools' curricular arrangements on social inequality in higher education enrollment. To reach this goal, we estimated two models for each contrast. As noted in the research method, in the first model, we included the students' sociodemographic and their schools' characteristics; in the second model, we added the curriculum variables. We also added students' bagrut scores in English and mathematics, which serve as a proxy for scholastic ability, mainly as control.

From the first column of Table 3, we can see that all sociodemographic characteristics significantly affected the likelihood of university enrollment, mostly in the expected direction. Female gender, father's higher education, and non-Mizrachi origin increased the odds of university enrollment. This is also true for Arab nationality. Students of Arab nationality were 1.93 ($\exp[.659]$) times more likely than Jewish students from a non-Mizrachi origin to enroll in university. This positive and relatively strong significant effect of Arab nationality may look surprising in view of the disadvantage of Arab students in the Israeli education system (e.g., Al-Haj, 1995). However, this finding is in accordance with previous research showing that after controlling for parental education, Arab students proved relatively advantaged in various educational outcomes (Ayalon & Shavit, 2004).

In the second model of university enrollment (column 2), graduates' curricular experience, schools' curricular arrangements, and test scores were added to the analysis. The findings showed that the graduates' curricular experience exerted a significant effect on the likelihood of university enrollment. The coefficients of basic bagrut (-1.354) and bagrut with English (-1.385) showed, *ceteris paribus*, that graduates eligible for the "best" bagrut were about 4 times more likely than graduates eligible for the basic bagrut or for bagrut with English to enroll in a university ($1/\exp[-1.354] = 3.873$; $1/\exp[-1.385] = 3.995$). The negative

effect of the certificate with English, which also is university qualifying, highlights the advantage of the "best" diploma for university enrollment. Studying on the academic versus the vocational track increased the odds of university enrollment by about 2.5 times ($\exp[0.960] = 2.612$). Not surprisingly, higher scores in English and mathematics increased the odds of university enrollment.

The inclusion of the curricular variables and of test scores decreased the effect of father's education by 58% (from 0.462 to 0.192) and the effect of being Mizrachi by 22% (from -0.155 to -0.120), but both coefficients retained their statistical significance. The presence of the curricular variables changed the direction of the coefficient of Arab from positive to negative and increased the coefficient of gender by more than 50% (from 0.411 to 0.625). These last two results suggest that curricular experience is an advantage for Arab students and a disadvantage for women. These results accord with previous research showing that the curriculum in Arab schools is academically oriented and offers mainly prestigious school subjects (Ayalon, 2002; Shavit, 1990). As for girls, they tend to take advanced mathematics courses less than boys do, which decreases their likelihood of eligibility for the "best" diploma (Ayalon, 2002) and thus restricts their chances to enroll in a university. However, when we compare between men and women with similar curricular experiences, the chances of women's enrolling in a university are greater than those of men. At the individual level, then, students' curricular experience mediated between their ascriptive characteristics and university enrollment, but the mediating effect was only partial, and all sociodemographic variables retained an independent effect.

Beyond the graduates' curricular experience, the school's curricular arrangements exercised an independent effect on the odds of university enrollment. Schools less achievement oriented (i.e., with higher proportions of students not eligible or eligible for less than the "best" certificate) decreased the likelihood of university enrollment for all their students. The multivariate hypothesis tests, presented in Table 4, show that the coefficients of proportions eligible for basic bagrut and for bagrut with English represent contextual effects beyond the respective student-level effects.

TABLE 4

Multivariate Hypothesis of the Difference in the Coefficients for School-Level and Student-Level Predictors of University and Michlala (College) Enrollment

Predictor	Coefficients		Difference (between absolute values)	χ^2	School-Level Effect
	School Level	Student Level			
University					
Father's education (1) ^a	1.481	0.462	1.019	40.267*	Yes
Father's education (2) ^b	0.259	0.192			Test not performed because the school-level coefficient was not statistically significant
Basic <i>bagrut</i> (matriculation)	-1.975	-1.354	0.621	17.837**	Yes
Bagrut with English	-2.976	-1.385	1.591	88.331**	Yes
Michlala					
Father's education (1)	0.571	0.186	0.385	6.812**	Yes
Father's education (2)	0.154	0.107			Test not performed because the school-level coefficient was not statistically significant
Basic <i>bagrut</i>	-0.682	-0.539			
Bagrut with English	-0.493	-0.521			

Note. The hypothesis tests suggest a school-level effect when the difference between the school-level and student-level coefficients is statistically significant and positive (in absolute terms).

a. Restricted model (without curriculum variables).

b. Extended model (curriculum variables added).

* $p < .01$. ** $p < .001$.

Compared with university enrollment, enrollment in a michlala was less dependent on most sociodemographic and school characteristics. The findings of the first model of michlala enrollment (column 3) indicated that father's education (0.186) and gender (0.586) were the only variables that exerted a positive and statistically significant effect. Two school variables, religious sector and mean father's education, positively affected michlala enrollment. The second model of michlala enrollment, presented in the last column, again revealed the advantages of the "best" bagrut. Graduates eligible for the "best" certificate were 1.71 ($1/\exp[-0.539]$) times more likely than graduates eligible for a basic certificate, and 1.68 ($1/\exp[-0.521]$) more likely than graduates eligible for a certificate with English, to enroll in a michlala rather than not enroll. The coefficients in the equation of michlala enrollment were, however, much smaller than those of university enrollment, intimating the graduates' lower dependence on their curricular history.

The comparison of the two models of michlala enrollment showed that inclusion of the curriculum variables and test scores stripped the coefficient of father's education of its statistical

significance. The coefficient of gender grew much stronger (an increase of 10%, from 0.586 to 0.649), revealing again the curricular disadvantage of female high school students in Israel. In contrast to university enrollment, the curricular arrangements of the school were only marginally related to the odds of michlala enrollment. None of the variables representing curricular arrangements reached statistical significance. Overall, the decision to enroll in the michalalot proved less dependent on personal and school characteristics. Compared with enrolling in a university, curricular policy had less impact, as either an independent or a mediating factor, on enrolling in a michlala.

Do the Curricular Arrangements of Schools Mirror Their Social Composition?

The second purpose of our study was to test whether the schools' curricular arrangements have an effect independent of their social composition. To address this issue, we refer to the equations of the intercept, which represent the effect of a school's characteristics on the odds of an average student's enrolling in a university or a michlala. The equation of the intercept in the

first model of university enrollment (column 1) showed that schools with a high mean of father's education and a higher proportion of academic teachers, state-religious schools, and larger schools significantly increased the likelihood of university enrollment. A higher social and pedagogic school environment thus boosted university enrollment of all students. The inclusion of the schools' curricular arrangement (column 2) deprived the effects of all compositional and structural school variables of their statistical significance. So at the school level, the curricular arrangements fully mediated the effects of social and pedagogic composition, sector, and size on university enrollment. The advantage provided by a higher social milieu, better teachers, and religious sector was thus achieved through better curricular arrangements: academic orientation and demanding courses.

Only two school characteristics affected the intercept in the first equation of michlala enrollment (column 3): mean father's education (0.571) and religious affiliation (0.527). Similar to university enrollment, the inclusion of the schools' curricular arrangements caused the coefficient of mean father's education to diminish by 73% (from 0.571 to 0.154) and lose its statistical significance.

Going back to our research question, the results showed that schools' curricular arrangements had an independent effect on higher education enrollment beyond that of social composition. In fact, they fully mediated between schools' social composition and higher education enrollment. Schools' curricular arrangements, then, do not just mirror their social composition. They, rather, constitute a mechanism through which socially privileged schools (i.e., schools that absorb children of educated parents) produce educational advantages for their students.

The Effect of Schools' Social Composition on the Attainments of Students With Different Curricular Experience

The third purpose of the study was to test the effect of schools' social composition on post-secondary attainments of students with different curricular experience. To test this question, we refer to the slopes of basic bagrut and bagrut with English, which represent the link between bagrut type and university or michlala enrollment. We

have already seen that the two slopes were negative for both university and michlala enrollment, indicating the advantage of the "best" bagrut over the other bagrut types. The between-school variation of these slopes was statistically significant, and both were added to the equations of university and michlala enrollment at random. This variation suggested that the payoff on bagrut type in terms of higher education enrollment varied between schools.

Following the research question, we were interested in the effect of mean father's education on the slopes of basic bagrut and bagrut with English. The table shows that this effect was positive and statistically significant in the equations of basic bagrut in the models of university enrollment (1.259; column 2) and of michlala enrollment (0.554; column 4). The positive effect of mean father's education on the negative slope of basic bagrut implies that a higher social milieu moderated the negative effect of basic bagrut on both university and michlala enrollment. A higher social milieu thus blurred the hierarchy of the basic and the "best" certificates in university and michlala enrollment. To demonstrate, when mean father's education at a school exceeded the grand mean by 1 year, it reduced the disadvantage of the basic diploma to $-.095 (-1.354 + 1.259 * 1)$.

In deciding whether to enroll in higher education, graduates of schools with higher social composition were less dependent on their less advantageous curricular experience. Mean father's education had no effect on the link between bagrut with English and higher education enrollment.

How can we explain the better use that graduates of socially privileged schools make of the basic certificate? The soundest explanation refers to the educational advantages provided by these schools. Students in high-social-milieu schools may have a better matriculation mix (i.e., take advanced courses in the sciences, which are very highly valued in Israel) and higher bagrut scores. The matriculation-mix explanation is hardly applicable to graduates eligible for the basic certificate, because these students, who did not take advanced English or mathematics, usually have no opportunity to specialize in the prestigious sciences (Ayalon & Yogeve, 1997). The bagrut-scores explanation is

more relevant, as the academic shortcomings of graduates eligible for the basic certificate may be especially glaring in socially disadvantaged schools. To test this explanation, we analyzed the graduates' matriculation scores and found two major results:⁵ (a) graduates eligible for the basic bagrut had better scores when they graduated from socially privileged schools, and (b) the discrepancy in the bagrut scores of graduates eligible for the basic certificate and those eligible for the university-qualifying certificate was particularly prominent in socially privileged schools. In other words, a socially privileged environment did not blur the discrepancy in the scores of graduates eligible for the different bagrut types; in fact, it highlighted it. Accordingly, matriculation scores cannot explain the blurring effect of the schools' higher social composition on the hierarchy of the various matriculation types.

This leads us to offer an alternative, contextual explanation, which because of our inability to study it directly must remain speculative. It refers to the schools' organizational habitus and suggests that students of schools that serve privileged populations are exposed to peers' influence, messages, and information, which enable them to make the most of the opportunities provided by the basic certificate. Although the benefits of the university-qualifying certificates are probably clear to all students, the options open to graduates eligible for the basic bagrut are less so. Socially privileged schools may convey relevant information to their students. They may provide information on the very existence of the new academic colleges and their precise requirements. They also may inform the students on the availability of second-chance frameworks, which are quite popular in Israel (they are used by about 13% of each cohort; ICBS, 2006). These frameworks serve graduates who have either failed to obtain the bagrut or who wish to upgrade their certificate (Shavit, Ayalon, & Kuerlander, 2002). This information may help students eligible for the basic bagrut to utilize to the full the "inferior" bagrut type.

Discussion

Despite the expansion of higher education in many countries, privileged groups retain their advantages in postsecondary enrollment. How does this happen? What are the mechanisms that

help members of privileged groups convert their initial resources into different postsecondary attainments? We assumed that the curricular policy of high schools is a major mechanism that mediates between the students' sociodemographic characteristics and their enrollment in postsecondary studies.

To test this assumption, we examined postsecondary enrollment of high school graduates in Israel who were eligible for the bagrut (matriculation) certificate and hence had the option to enroll in higher education. We focused on three bagrut types, which represent curricular history in high school: basic bagrut, which is not accepted by the universities for admission but is accepted by most michlalot (newly established colleges), and two university-qualifying certificates, namely, bagrut with advanced English and bagrut with advanced English and mathematics (the "best" bagrut). The results showed that although the schools' curricular policy exerted a substantial effect on postsecondary enrollment, their power in mediating between the students' sociodemographic characteristics and their postsecondary attainments was limited. As was found in previous research, better curricular experience serves as a resource for entry into higher education, but the students' sociodemographic characteristics still retain an independent effect. This, however, is true only for university enrollment. Enrollment in the michlalot, which constitutes the second tier of higher education in Israel, is only marginally related to sociodemographic characteristics to start with, and controlling for curricular experience eliminates most of their effects. Michlala enrollment is thus less dependent on ascriptive characteristics than university enrollment.

Does this imply that schools' curricular policy plays a marginal role in the conversion of initial resources into university enrollment? Not at all. The process, however, is rather complicated, and in addition to the simple mediation at the individual level, it relies on contextual effects.

We found that beyond the students' personal experience, the curricular arrangements of their schools had a contextual effect on postsecondary attendance. Schools with an academic orientation (i.e., academic versus vocational schools, schools with a high proportion of students eligible for the "best" bagrut) augmented the transition to postsecondary education of all

students, even when their personal curricular experience might have been discouraging. The schools' curricular arrangements fully mediated the effects of their social composition on both university and michlala enrollment. In other words, schools that served more educated populations afforded their students an advantage through better curricular arrangements.

Whereas the schools' curricular arrangements fully mediated the effect of their social composition on both university and michlala enrollment, social composition exercised an independent effect on the link between the students' curricular experience and their postsecondary enrollment. A higher social composition blurred the hierarchy of the various bagrut types, implying that the enrollment in higher education of graduates of socially privileged schools is less dependent on their curricular experience. This is particularly significant for graduates eligible for the basic certificate. These students, because of their lower scholastic ability, did not benefit from the better curricular options provided by the socially privileged schools. Yet they made better use of their certificate mainly by enrolling in the newly established institutions of higher education that accept the basic bagrut. It appears, then, that schools with a higher social composition create a "culture of success" that impels and encourages graduates to acquire postsecondary education even when their achievements at high school are modest (Rumberger & Palardy, 2005).

These findings have implications for the well-known debate on the value of integrating disadvantaged students into high-social-milieu schools as a strategy for improving their educational attainments (going back to Coleman et al., 1966). A school's social composition affects relations between the student's curricular experience and enrollment in higher education. Studying in socially privileged schools is advantageous for students with diverse scholastic abilities and from different social backgrounds. It increases students' opportunities to use their curricular experience to the utmost. Yet this optimistic approach is limited, as graduates eligible for the basic certificate are often members of disadvantaged social groups, but disadvantaged students who study in socially privileged schools are a minority. Most students in these schools belong to privileged social groups. We may suggest, then,

that socially privileged schools, by helping their less capable students to make the most of their discouraging curricular experience, serve as an additional mechanism of social reproduction.

By contrast, postsecondary enrollment of graduates of schools that serve less educated populations, and are less academically oriented, depends heavily on their curricular experiences. For these students, who are more likely to originate from underprivileged strata, eligibility for the "best" certificate (which is relatively scarce in their schools) is the main road to higher education, particularly at university.

Our study started out trying to establish the role of schools' curricular policy in converting their students' initial resources into postsecondary attainments. We see now that the schools' social composition plays a unique role in this process. Socially privileged schools provide their students with advantages that are not captured by their curricular policy or, for that matter, by other characteristics such as their pedagogic or ethnic composition.

The better use that members of privileged groups make of new opportunities for higher education is reported in many countries. However, the question of the universality of the mechanisms that produce this pattern remains open. Our findings refer to Israel, which, as noted, is characterized by a direct and strong link between secondary and postsecondary education, mainly created by the matriculation certificate. Even in that context, certain degrees of freedom exist that help graduates of socially privileged schools better utilize their curricular experience. It may operate differently in other countries, such as the United States, that lack a parallel test. This may reduce the effect of the curricular experience of the students who, in the absence of the signals provided by patterns of course taking, may rely more heavily on information provided by their schools. This of course is a matter for further, comparative research.

Policy Implications and Limitations

Policy Implications

The study has several policy implications. In Israel, much effort has been exerted to increase

the proportion of students eligible for the matriculation certificate. But as we can learn from these findings, mere eligibility for the certificate is not enough. Policy makers and school leaders must consider the implications of the curricular opportunities provided to the students. We found that curricular opportunities, as expressed in the type of the matriculation certificate, are particularly significant for students studying in less privileged environments. This implies that investments in curricular resources are of special value in schools that serve less privileged populations. Thus, as a rigorous and challenging academic curriculum boosts enrollment in higher education (see also Adelman, 2006), it is essential to provide these students with more learning opportunities that can compensate for their less advantageous social milieu. Our results point to the value of being well informed on the implications of the different matriculation types for enrolling in higher education (Cabrera & La Nasa, 2000; National Center for Educational Statistics, 2001; Plank & Jordan, 2001). That information must be conveyed to students and parents at an early stage at high school, when decisions on their placement on different tracks and courses have to be made. Knowledge about these options will assist the students in making better curricular choices while at high school and in better utilizing their certificates after graduating from it. These policy implications obviously refer to the Israeli context. Still, the value of curricular policy for disadvantaged students and the need for information about higher education is not necessarily context bound.

Limitations

We point at two limitations of the current study. First, the data refer to the first stages of the establishment of the *michlalot*. The increase in the number of *michlalot* and in their variability may affect some of our findings, although we believe that the basic pattern remains intact. Second, we do not refer to fields of study, which have implications on inequality in enrollment in higher education in Israel (e.g., Ayalon & Yogev, 2005). The analysis of fields of study is beyond the scope of our research, but we believe that further research should study the interplay

between high school, students' characteristics, and field of study in higher education.

Notes

¹The influence of the high school on patterns of enrollment in higher education in Israel might first seem problematic to examine. American findings indicate that such an influence does indeed exist, but in Israel, in contrast to the United States, the decision to enroll in higher education is made by most high school leavers a few years on. This may reduce the influence of the school context. We find support for our approach in the results of a survey conducted lately among freshmen at universities and academic colleges in Israel, which showed that most students pointed to their school as the main source of information about the system of higher education (Ayalon & Yogev, 2002). This finding suggests that the high school has an enduring influence on decisions about postsecondary education.

²In our sample, which will be discussed later, 96% of the students who took advanced mathematics also took advanced English.

³Of the sample, 54.9% are women, 13.3% are Arab, 11.9% studied in Jewish state-religious schools, 60.1% studied in the academic track, and 59.1% were eligible for the matriculation certificate. The respective percentages for the population were 52.7% women, 13.6% Arab, 14.9% studied in Jewish state-religious schools, 57.3% studied in the academic track, and 55.2% were eligible for the matriculation certificate (ICBS, 2000).

⁴Probability of *bagrut* (matriculation) eligibility was computed using as predictors all student and school characteristics that were included in the analysis of postsecondary enrollment, except the variables referring to matriculation type and matriculation scores.

⁵We studied the effect of schools' social composition on the link between matriculation type and students' matriculation scores by performing a linear hierarchical analysis with the students' matriculation scores dependent and matriculation type, mean father's education in school, and all other variables included in the previous analyses as predictors. Score was defined as the average of the grades in Hebrew, English, and math (our data included information on these subjects only); the last two were weighted for course level according to the method used by the universities (a bonus of 12.5 points for the 4-unit level and of 25 points for the 5-unit level). The explanatory variables were those used in the previous analyses. The slopes of father's education, basic matriculation, and matriculation with English

and mathematics were allowed to vary between schools and were modeled as a function of mean father's education.

References

- Adelman, C. (1999). *Answers in the tool box: Academic intensity, attendance patterns, and bachelor's degree attainment*. Washington, DC: U.S. Department of Education.
- Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. Washington, DC: U.S. Department of Education.
- Alexander, K. L., Entwisle, D. R., & Thompson, M. S. (1987). School performance, status relations, and the structure of sentiment: Bringing the teacher back in. *American Sociological Review*, 52(5), 665–682.
- Al-Haj, M. (1995). *Education, empowerment, and control: The case of the Arabs in Israel*. Albany: State University of New York Press.
- Ambler, J. S., & Neathery, J. (1999). Educational policy and equity: Some evidence from Europe. *Social Science Quarterly*, 80, 437–456.
- Arum, R., Gamoran, A., & Shavit, Y. (2007). More inclusion than diversion: Expansion, differentiation, and market structure in higher education. In Y. Shavit, R. Arum, & A. Gamoran (Eds.), *Stratification in higher education: A comparative study* (pp. 1–35). Stanford, CA: Stanford University Press.
- Ayalon, H. (1994a). Community characteristics and educational opportunities in Israel. *Research in Social Stratification and Mobility*, 13, 99–118.
- Ayalon, H. (1994b). Monopolizing knowledge? The ethnic composition and curriculum of Israeli high schools. *Sociology of Education*, 67, 264–278.
- Ayalon, H. (2002). Mathematics and sciences course taking among Arab students in Israel: A case of unexpected gender equality. *Educational Evaluation and Policy Analysis*, 24(1), 63–80.
- Ayalon, H., & Gamoran, A. (2000). Stratification in academic secondary programs and educational inequality in Israel and United States. *Comparative Education Review*, 44, 54–80.
- Ayalon, H., & Shavit, Y. (2004). Educational reforms and inequality in Israel: The MMI hypothesis revisited. *Sociology of Education*, 77(2), 103–120.
- Ayalon, H., & Yogeve, A. (1996). The alternative worldview of state religious high schools in Israel. *Comparative Education Review*, 40(1), 7–27.
- Ayalon, H., & Yogeve, A. (1997). Students, schools and enrollment in science and humanity courses in Israeli secondary education. *Educational Evaluation and Policy Analysis*, 19, 339–353.
- Ayalon, H., & Yogeve, A. (2002). *A window to the academic dream: Social implications of the expansion of higher education in Israel*. Research report submitted to the Ministry of Education (Hebrew).
- Ayalon, H., & Yogeve, A. (2005). Field of study and students' stratification in an expanded system of higher education: The case of Israel. *European Sociological Review*, 21(3), 227–224.
- Ayalon, H., & Yogeve, A. (2006). Stratification and diversity in the expanded system of higher education in Israel. *Higher Education Policy*, 19, 187–203.
- Benavot, A., & Resh, N. (2003). Educational governance, school autonomy and curriculum implementation: A comparative study of Arab and Jewish schools in Israel. *Journal of Curriculum Studies*, 35, 171–196.
- Bolotin-Chachashvili, S., Shavit, Y., & Ayalon, H. (2002). Reform, expansion and opportunity in Israeli higher education from the early 1980s to the later 1990s. *Israeli Sociology*, 4, 317–346. (Hebrew)
- Breen, R., & Jonsson, J. O. (2000). Analyzing educational careers: A multinomial transition model. *American Sociological Review*, 65, 754–772.
- Brint, S., & Karabel, J. (1989). *The diverted dream: Community colleges and the promise of educational opportunity in America, 1900–1985*. Oxford, UK: Oxford University Press.
- Cabrera, A. F., & La Nasa, S. M. (2000). Understanding the college-choice process. *New Directions for Institutional Research*, 107, 5–22.
- Coleman, J. (1990). *Equality and achievements in education*. Boulder, CO: Westview.
- Coleman, J., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., et al. (1966). *Equality of educational opportunity*. Washington, DC: U.S. Department of Health, Education and Welfare, Office of Education.
- Davies, S., & Guppy, N. (1997). Fields of study, college selectivity, and student inequalities in higher education. *Social Forces*, 75, 1417–1438.
- Espenshade, T. J., Hale, L. E., & Chung, Y. C. (2005). The frog pond revisited: High school academic context, class rank and elite college admission. *Sociology of Education*, 78(4), 269–293.
- Gamoran, A. (1992). The variable effects of high school tracking. *American Sociological Review*, 57, 812–828.
- Gamoran, A. (1993). Alternative uses of ability grouping in secondary schools: Can we bring high-quality instruction to low-ability classes? *American Journal of Education*, 102, 1–22.
- Gamoran, A., & Mare, R. (1989). Secondary school tracking and educational inequality: Compensation, reinforcement, or neutrality? *American Journal of Sociology*, 94, 1146–1183.
- Hallinan, M. T. (1994). School differences in tracking effect of achievement. *Social Forces*, 72, 799–820.

- Hallinan, M. T., & Sorensen, A. (1983). The formation and stability of instructional groups. *American Sociological Review*, 48, 838–851.
- Hamrick, F. A., & Stage, F. K. (2004). College predisposition at high-minority enrollment, low-income schools. *Review of Higher Education*, 27(2), 151–168.
- Heck, H. R., Price, C. L., & Thomas, S. L. (2004). Tracks as emergent structures: A network analysis of student differentiation in a high school. *American Journal of Education*, 110, 321–353.
- Hoffer, T. (1997). High school graduation requirements: Effects on dropping out and student achievements. *Teachers College Record*, 98, 684–707.
- Hossler, D., & Stage, F. (1992). Family and high school experience influences on the postsecondary plans of ninth-grade students: A structural model of predispositions to college. *American Educational Research Journal*, 29(2), 425–451.
- Huang, G. G., & Weng, S. S. (1998). Minority postsecondary education attendance, high school desegregation, and student characteristics. *Race, Ethnicity and Education*, 1(2), 241–267.
- Israel Central Bureau of Statistics. (2000). *Access to post-secondary and higher education among secondary school graduates in Israel, cohort of 1983/84–1990/91, follow-up until 1997/98* (Publication No. 1130). State of Israel: Author. (Hebrew).
- Israel Central Bureau of Statistics. (2004). *Statistical abstract of Israel, 2004* (No. 55). Jerusalem: Author.
- Israel Central Bureau of Statistics. (2006). *Statistical abstract of Israel, 2006* (No. 57). Jerusalem: Author.
- Karen, D. (2002). Changes in access to higher education in the United States, 1820–1992. *Sociology of Education*, 75, 191–210.
- Kilgore, S. B. (1991). The organizational context of learning: Framework for understanding the acquisition of knowledge. *American Sociological Review*, 56, 189–203.
- Kilgore, S. B., & Pendelton, W. W. (1993). The organizational context of learning: Framework for understanding the acquisition of knowledge. *Sociology of Education*, 66, 63–87.
- Lareau, A. (1989). *Home advantage*. London: Falmer.
- Lucas, S. R. (1999). *Tracking inequality: Stratification and mobility in American high schools*. New York: Teachers College Press.
- Lucas, S. R. (2001). Transitions, track mobility, and social background effects. *American Journal of Sociology*, 106(6), 1642–1690.
- Lucas, S., & Berends, M. (2002). Sociodemographic diversity, correlated achievement, and de facto tracking. *Sociology of Education*, 75, 328–348.
- McDonough, P. M. (1997). *Choosing colleges: How social class and school structure opportunity*. Albany: State University of New York Press.
- McDonough, P. M. (1998). Structuring college orientations: A cross-case analysis of organizational culture, climates and habits. In C. A. Torres & T. R. Mitchell (Eds.), *Sociology of education: Emerging perspectives* (pp. 181–210). Albany: State University of New York Press.
- National Center for Educational Statistics. (2001). *Paving the way to postsecondary education: K-12 intervention programs for underrepresented youth*. Washington, DC: U.S. Department of Education.
- Ono, N. (2001). Who goes to college? Features of institutional tracking in Japanese higher education. *American Journal of Education*, 109, 161–195.
- Owings, J., Medigan, T., & Daniel, B. (1998). *Who goes to America's high rank "national" universities?* (National Center for Educational Statistics 98-095). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.
- Perna, L. W., & Titus, M. A. (2004). Understanding differences in the choice of college attended: The role of state public policies. *Review of Higher Education*, 27(4), 501–525.
- Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *Journal of Higher Education*, 76(5), 485–518.
- Plank, S. B., & Jordan, J. W. (2001). Effects of information, guidance, and actions on postsecondary destinations: A study of talent loss. *American Educational Research Journal*, 38(4), 947–979.
- Raftery, A., & Hout, M. (1993). Maximally maintained inequality: Expansion, reform and opportunity in Irish education 1921–75. *Sociology of Education*, 66, 41–62.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: Sage.
- Reskin, B. F. (2003). Including mechanisms in our models of ascriptive inequality. *American Sociological Review*, 68, 1–21.
- Rumberger, R. L., & Palardy, G. J. (2005). Does segregation still matter? The impact of student composition on academic achievement in high school. *Teachers College Record*, 107(9), 1999–2045.
- Shavit, Y. (1984). Tracking and ethnicity in Israeli secondary education. *American Sociological Review*, 49(2), 210–220.
- Shavit, Y. (1990). Arab and Jewish minorities in Israeli education. *American Sociological Review*, 55, 115–126.
- Shavit, Y., Ayalon, H., & Kuerlander, M. (2002). Second chance education and inequalities in Israel. *Research in Sociology of Education: Schooling and Social Capital in Diverse Cultures*, 13, 107–126.

- Shavit, Y., & Kraus, V. (1990). Educational transitions in Israel: A test of the industrialization and credentialism hypotheses. *Sociology of Education*, 63(2), 133–141.
- Spade, J. Z., Columba, L., & Vanfossen, B. E. (1997). Tracking in mathematics and science: Courses and course selection procedures. *Sociology of Education*, 70, 108–127.
- Stevenson, D. L., Schiller, K. S., & Schneider, B. (1994). Sequences of opportunities for learning. *Sociology of Education*, 67, 184–198.
- Teitelbaum, P. (2003). The influence of high school graduation requirement policy in mathematics and science on student course-taking patterns and achievement. *Educational Evaluation and Policy Analysis*, 25, 31–57.
- Trow, M. A. (1984). The analysis of status. In B. C. Clark (Ed.), *Perspectives on higher education* (pp. 132–162). Berkeley/Los Angeles: University of California Press.
- Trusty, J. (2002). Effects of high school course-taking and other variables on choice of science and mathematics

college majors. *Journal of Counseling and Development*, 80, 464–475.

Authors

AUDREY ADDI-RACCAH, PhD, is a senior lecturer and the head of the master's program in educational administration and leadership at Tel Aviv University's School of Education. Her current work deals with inequality in higher education opportunities and with school principals' role.

HANNA AYALON is a professor of sociology of education in the Department of Sociology and Anthropology at Tel Aviv University in Israel. Her current work focuses on the curriculum as a source of social inequality and the expansion of higher education.

Manuscript received September 6, 2006

Final revision received April 4, 2007

Accepted November 26, 2007