



Graduates of "Start" – Tafnit for Matriculation and Dropout Prevention Program

**A joint program of
the Rashi Foundation and partners, the Ministry of Education, the Shaha"r Division
and the Education Departments in participating localities**

Report of Research Findings

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Evaluators:

- Ms. Na'ama Bar-On, Ms. Michal Bar-Doron, Ms. Marina Goroshet, Ms. Larisa Boglavski and Dr. Miri Levin Rosales
- Prof. Shifra Sagy: Chair of the Center for Enhancement in Education

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Background

At the end of the 2006-2007 school year, after three years of activity (in addition to a two-month preparatory course in 9th grade), about 100 of the first graduates of the Start program completed the 12th grade in the two comprehensive schools in which the program began to operate.

The **objective** of this study is to examine the contribution of the "Start – Tafnit for Matriculation" program for students who are dropouts or have the status of "hidden" dropouts. This contribution is assessed in terms of academic achievements at the end of 12th grade.

Over the years, there has been much evidence to indicate that the "Start – Tafnit for Matriculation" program has a positive impact on students in regard to improving grades and matriculation scores and preventing "hidden" dropout. There are also many reports from teachers, principals, supervisors and students to support this finding. The completion of 12th grade by the first class of students in the two comprehensive schools that were the first to implement the program allows us to examine, for the first time, whether a change occurred in these schools for students who were already regarded in 9th grade as having very little chance of completing 12 years of study and acquiring a matriculation certificate. We are aware of the limitations of research conducted in only two schools. However, as a pilot study, the research can illustrate the program's achievements, confirm that the program is indeed working in the right direction and constitute the basis for further research.

The objective of the current study is to respond to an additional need: to examine the achievements of the students in the program in comparison to a control group (students with similar characteristics who did not participate in the program).

About the program

From the program's Web site and documents:

The goal of the Start program – to prevent dropout, overt and hidden, of at-risk students by boosting academic success and addressing emotional needs. The program leads to attainment of a full matriculation certificate by the end of 12th grade.

The program – The Start program is a program that operates in high schools in the periphery. The program accepts 9th-grade students who have low achievements and have the status of "hidden" dropouts (and are at risk of becoming overt dropouts). Most of the students accepted into the program have at least seven failing grades in their report cards in 9th grade prior to entering the program. In order to prevent dropout and to attain a matriculation certificate, the students begin learning in 10th grade in accelerated classes run by the school staff, employing the accelerated method and principles of narrowing gaps of the Rashi Foundation's Tafnit program, which was developed by Nissim (Max) Cohen, an educational sociologist.

The program is a joint project of the Rashi Foundation, the Ministry of Education, the Shahar Division and the local authorities. It began operating in the 2003-2004 school year in the Southern District. The program operates today in various communities in the periphery.

Rationale – There are students at comprehensive schools who have failed many classes. This engenders frustration and a tendency for the schools, the students and their families to lose faith in their ability to succeed. The Ministry of Education allocates various resources for these students (such as learning in small classes), but despite this effort there are still relatively high rates of hidden dropout.

The Start program operates from a clear theoretical rationale and incorporates various components designed to help achieve the goals.

The rationale that guides the program is that some students begin to fail at the beginning of their school studies and continue to accumulate failures that lead them to adopt a false perception that their capacity to reach significant achievements is low. This perception is reinforced with every additional academic failure and is transmitted to classmates, peers, parents, the teaching staff, the school administration, and so on. Thus, an interactive, symbolic process develops and the "under-achieving" student has no control over it. This process is reinforced with every additional "failure" and leads to a lack of motivation and despair.

Usually, following a series of failures, these students are channeled into low-achiever classroom groups in middle school and low-achievement learning programs in high schools. These programs of study lack any relevant continuity-promoting orientation toward the future and "broadcast" low

expectations; they are characterized by "decelerated" teaching. As a result, and due to a growing lack of motivation, the learning gap between the "under achiever" and the "successful" students continues to grow until it reaches proportions that are almost impossible to narrow.

The subjective consciousness of failure in which the "unsuccessful" student is captive contradicts the school's demands that he fulfill the role of a student and attain high achievements. As a result of this contradiction, the "under achiever" develops cognitive dissonance and often employs rationalizations to extricate himself from this situation. These rationalizations are also expressed in overt and hidden dropout, which occurs mainly among students from the lowest groupings and tracks.

Basic assumptions¹

- A. Except for a very small number of exceptions, everyone can succeed in school and attain impressive achievements.
- B. According to the research data (see J. K. Horn 1990), the reasons for lack of success in school are not mainly cognitive, but instead are sociological, cultural, social-psychological, systemic and organizational.
- C. The program believes that this is not a "decree of fate" and can be changed, and that the school teachers can change when working under different, unconventional operating conditions.

Method of operation

In order to lead those students who are at risk of dropout toward successful achievement (according to universal criteria - such as success in matriculation exams), the Tafnit program chose to act in the following ways:

1. Changing the "false awareness" in which the student is captive (as well as his parents, teachers, the school administration, his peer group and the group of students he affiliates with). According to this false awareness, he is incapable of attaining impressive achievements. Employing innovative learning processes that lead to a series of real academic successes and a dialogue in which the student comes to understand the connection between effort and success.
2. Providing a structured solution for intra-school variables that account for the lack of academic success. Activities such as very challenging and relevant programs of study that reflect high expectations.
3. The method of operation provides a structured solution for extra-school variables that account for lack of success at school. For example, small learning groups, addressing the emotional needs of the student via a leader (coordinator) and teachers who develop a deep

¹ More information is available on the Tafnit Web site and in the program's documents.

emotional connection with the student and comprise "significant others." Reducing the anonymity by focusing on a relatively limited number of subjects and involving the parents in the processes.

4. Accelerated learning of a relatively large amount of study material in a relatively short period of time. This learning is more effective than the standard method; more hours are devoted to study during a shorter period of time.

Additional principles: Determination and result-oriented thinking, continuous success of each student in each study session, the staff's commitment and responsibility for results, ongoing personal follow-up, teamwork and multiple opportunities for success.

Program structure – the principles of the program were structurally translated and include the following main structural components:

- **Small learning groups** – a teacher for each learning group; average group size – 17 students
- **Program leadership by a coordinator (and the school administration)** – employed on more than a full-time basis, for a maximum of 32 students.
- **Group discussions** – every morning and at the end of every day of learning, and also during afternoon study hours
- **Personal conversations** – with each student, home visits to the parents of each student and combining spheres (parent meetings)
- **Combining spheres of all of the "significant others"** – parents, teachers, administration, students
- **Three types of subjects of study**, which are studied according to the following division: matriculation subjects; compulsory subjects (non-matriculation); elective subjects (selected by the student)
- **Semesters of study**
- **Afternoon and evening study**, intensive study days and learning marathons.

In addition to the information presented in the "Background" and "About the program" sections, this study's goal is to examine to what extent the working assumptions of the Tafnit program are indeed achieving their objectives in the field – and this is done by comparing students in the Start – Tafnit for Matriculation program (hereinafter – the trial classes) to students from classes with similar characteristics in the same schools in earlier years, who were not exposed to the program (hereinafter – the control classes).

Methodology

Population:

The program seeks to address students with the lowest level of achievement in the school, who are not special education students. As we noted, this involves schools in which the students with the lowest achievements have accumulated numerous failing grades.

This research could only be conducted in two comprehensive high schools, where the initial graduates of the program completed the 12th grade at the end of the 2006-2007 school year (after beginning their studies three years earlier in 10th grade, in 2003-2004). In the other comprehensive high schools where the program operates, the students had not completed the 12th grade by the end of the 2006-2007 school year. This research is a pilot study that could lead to a more extensive study of the program in the future.

In order to select the control group, we approached schools in which the program is operating and focused on the low-end classes (not special education) from two years prior to the initial program activity. That is, we focused on students who studied in these schools two years earlier because all of the potential target population for the control group participated in the program in later years. We had actually planned to select the control group from the school year completed just one year previous to the implementation of the program, but we found that in one of the schools an intervention program operated among the students slated to be the control group. Therefore, we selected the control group from students who studied in these schools two years earlier. The selection of students from the same schools was designed to reduce the differential related to the affect of socio-demographic status, school culture and the impact of the teaching staff on student achievements. All of these remain quite constant in the work of these schools.

Extensive interviews with the school principals and project coordinators indicated that there were no significant demographic differences between the time periods in terms of the student population at the school.

In order to ensure the similarity between the trial classes and the control classes, we checked the number of students in each of the classes in 10th grade and the average number of failing grades and their grade point averages in 9th grade. The tables displayed below show similar class characteristics in regard to these parameters.

Collecting the data:

As required by the chief scientist of the Ministry of Education, all of the data provided to us by the schools was encoded. Thus, we analyzed the grade data vis-à-vis all of the relevant students.

Processing the data:

We checked the scores of students for whom data was available from both 9th grade and from the end of 12th grade. Some of the missing data from 9th grade is attributable to the long period of time that elapsed since the students were in 9th grade (for the control group, the 2002-2003 school year) and to the fact that the students arrived at the high school from other middle schools where the scores were not saved in an orderly way. Some of the students in the control and trial classes lack 12th grade scores because they dropped out of school.

Sample

The comparison in this study examines the students of the Start – Tafnit program who completed 12th grade in 2007. It was conducted in two high schools where the program operated and compares these students to a control group of students who graduated from these two schools in 2005.

The sampling process included the following stages:

- Locating all of the Tafnit students who studied in the schools in 2004-2005 (when they were in 10th grade) and through 2006-2007 (when they were in 12th grade). The scores of all of these students were collected, from the end of 9th grade through the end of 12th grade, as well as data on whether they were eligible for matriculation and/or lacked one subject for matriculation at the end of 12th grade.
- Mapping the structure of the schools during the two school years; mapping the grades and classes. (See Appendix 1 and below in this section.)
- Selecting from the potential control group of classes with 10th-grade students in 2002-2003 who were as similar as possible to the 10th-grade students in the Start – Tafnit program in 2004-2005. (See the cross section below.)
- We also collected all of the school scores of the students in the control group from the end of 9th grade.
- We conducted a complex process of defining a number of failing scores for each student and for each group (trial and control), as well as defining an average score for each student in the trial classes and the potential control classes when they were in 9th grade. And we compared the data of the two classes. (See details below.)

Selecting control groups:

We chose as our control group the classes that were at the low end of the 10th grade and to which the Start – Tafnit students would have been assigned if the Start – Tafnit program had not been implemented in the school. The students channeled toward these classes have accumulated numerous failing scores and are similar in this way to the Start program's target population.

We did not select academic classes if the school data showed a very low average of failures per student, because the students in the Start program have a large number of failing scores. We also did not select special education classes. Data was collected from two classes in each grade in each school – classes that were judged to have the most similar characteristics to the Start classes. (And this indeed turned out to be the case – see Table 1 and Table 2 below.)

Appendix 1 describes the characteristics of all of the classes in the two grades in the two schools.

Defining data for examining the correlation between the classes

In order to decide how suitable the potential control classes were for serving as control groups, we checked the number of failing scores in 9th grade and the average score in 9th grade among the students in each of the classes. As noted, most of the 9th-grade students accepted into the Start – Tafnit program have at least seven failing scores in their report card in 9th grade.

The failing scores were defined according to the school's criteria for a failing score. Thus, we examined each school in a format unique to it. (See Appendix 2.)

The average score was based on all of the student's subjects of study in 9th grade. In order to compare students from different groupings, the scores were converted. The conversion criteria were selected arbitrarily in order to enable a comparison of scores and standardization for students from both of the schools and from the different learning groups. The conversion allows us to regard students in grouping C as failing because they do not meet the threshold conditions required to meet the goals of the program of studies.

- A. For all students in grouping C – a multiple of 0.5. (According to the schools, they are parallel in any case to the level of knowledge of a failing student in the other groupings)
- B. All students in grouping B – a multiple of 0.75
- C. All students in grouping A – their scores remain as they are

A look at Table 1 (and at Appendix 1) indicates that both the trial classes and the control classes are relatively small, though the trial classes are larger. (This creates difficulty for the Start program. That is, the starting point for examining the Start program is inferior to that of the control classes.) The trial classes and control classes have a similar starting point from the perspective of learning achievements.

Table 1 –**Characteristics of the trial classes and the control classes, by school, in 10th grade and 12th grade; average scores and average failures at the end of 9th grade**

Data on the characteristics of the 12-grade classes appears in Appendix 1.

	School A				School B			
	10 th grade trial class 8	10 th grade control class 7	10 th grade trial class 7	10 th grade control class 8	10 th grade trial class 2 ²	10 th grade control class 2	10 th grade trial class 5	10 th grade control class 1
No. of students in 10 th grade	27	26	22	19	24	16	31	20
No. of students in the class when they are in 12 th grade	27	22	23	15	13	20	36	20
No. of students with scores from grades 9 and 12	25	15	20	10	13	16	34	15
Average no. of failing scores in the class in 9 th grade ³ (S.D.) [*]	6.9 (2.3)	6.8 (3.5)	9.5 (2.3)	10.7 (2.5)	8.6 (1.6)	8.8 (1.9)	8.1 (2.3)	7.2 (1.9)
Average score in the class in 9 th grade ⁴ (S.D.)	49.2 (13.3)	51.6 (12.5)	42.3 (12.6)	40.1 (7.4)	41.8 (6.2)	36.7 (9.6)	42.1 (9.5)	49.2 (9.6)
No. of students with scores only for 9 th grade	0	1	1	0	0	0	0	0
No. of students with scores only for 12 th grade	2	6	2	4	0	4	2	5
No. of students without scores for 9 th grade and without 12 th grade matriculation scores	0	0	0	1	0	0	0	0

^{*}Standard Deviation

Student dropout

The gap between the number of students for whom data is available in 9th grade and the number for whom data is available in 12th grade is attributable to a number of reasons, including: the addition of a few students to the school during the years and the departure of students for various reasons. Nine students from the control group and seven students from the trial group dropped out of school before completing 12th grade. That is, the dropout rate is 11.1% in the control group and 6.7% in the trial group.

² In School A, some students from the control group dropped out of school between 9th and 12th grade. In School B, some students transferred between the different trial groups between 9th and 12th grade due to considerations of class atmosphere. A number of students from the trial group also dropped out of school.

³ The distribution of number of failing scores appears in Appendix 3.

⁴ There are no significant differences between the averages of the students from the trial and control groups in these schools.

Index for calculating the number of failures

As noted, the number of failures was calculated according to each school's definition of a failing score. (See Appendix 2.) In principle, failure includes a score of 54 or less, or a score of 0 in a certain subject of study, the lack of a score in a subject that is not an elective, and the standardization of scores in the low groupings as explained above in order to allow comparison with the scores of students in higher groupings.

Table 2 –

Distribution of failing scores and average scores by trial and control groups and by school

	School A trial classes – in 9 th grade	School A control classes – in 9 th grade	School B trial classes – in 9 th grade	School B control classes – in 9 th grade
No. of students with data	45	25	47	31
Average no. of failing scores for the group (S.D.)*	8.04 (2.62)	8.36 (3.66)	8.28 (2.14)	8.03 (2.14)
Average score at the end of 9th grade	46.1 (13.3)	47 (12)	42 (8.7)	42.8 (11.4)
T test to check significance of the differential between the averages	-0.266		-0.311	

*Standard Deviation

The average number of failures of each group was found to be very similar, thus allowing a comparison between the groups – within and outside of the schools.

Diagram 1

Distribution of failing scores by trial and control groups, and by school

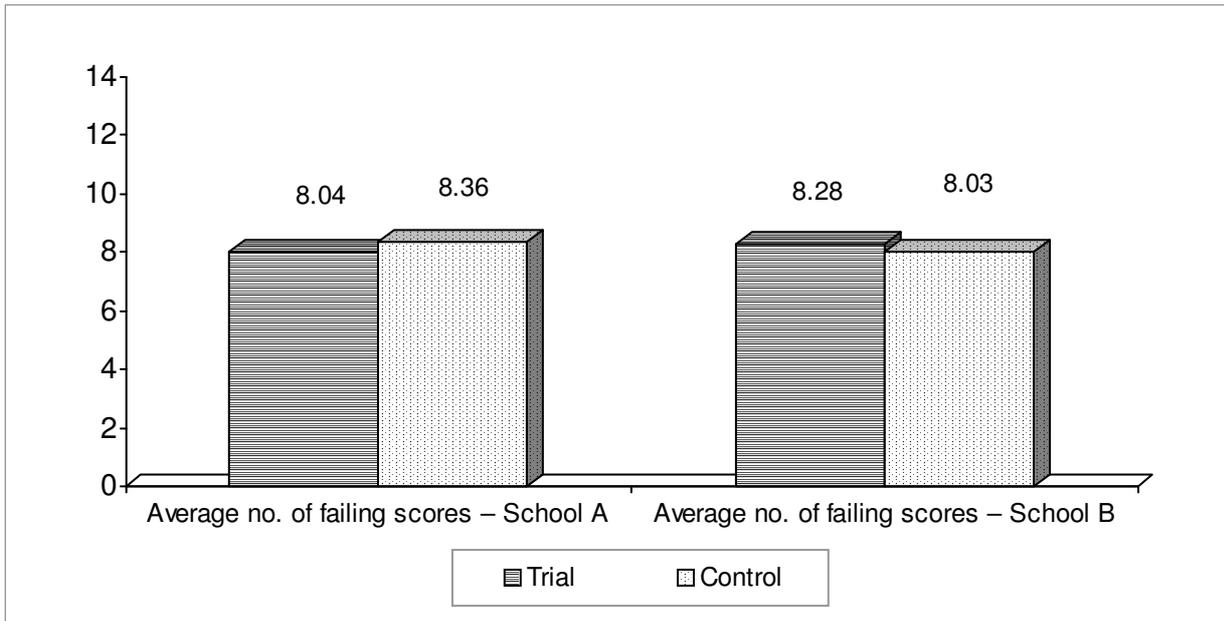
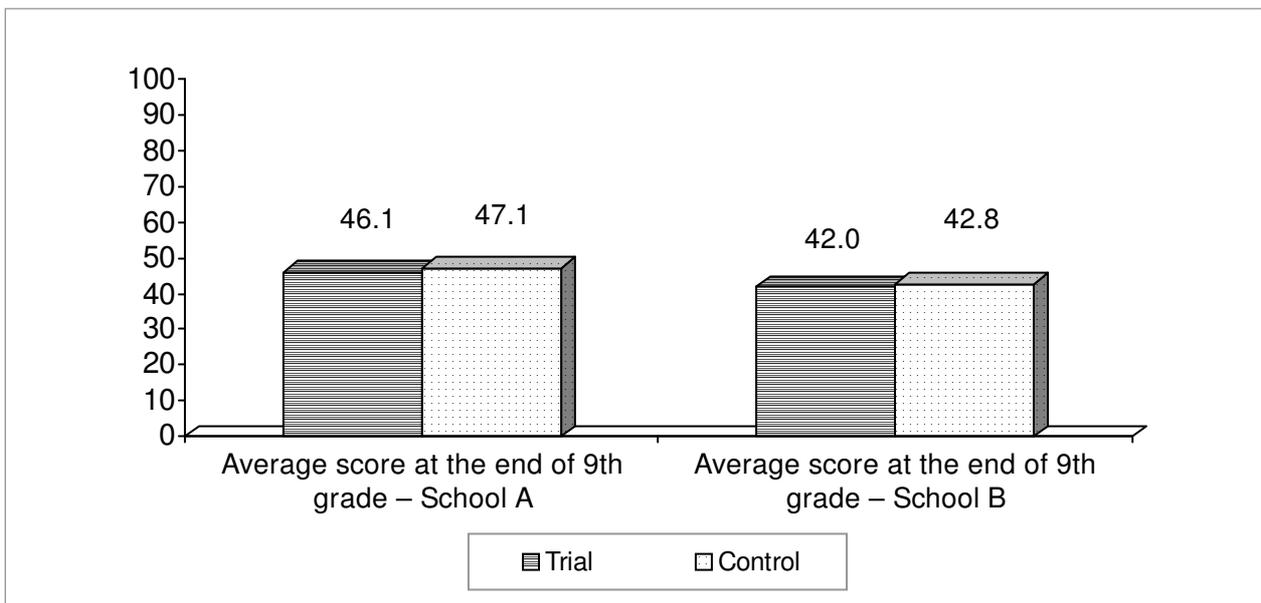


Diagram 2

Distribution of average scores by trial and control groups, and by school



Findings

1. Summary of key findings

As noted, the findings are based on an analysis of the matriculation scores of 92 students in the trial group and 56 students in the control group as detailed in the table below. These are the students for whom the schools have data from both 9th grade and 12th grade. These students comprise 88% of the 10th graders who began their studies in the trial group and 69% of the students who began their studies in the control group.

The findings pertaining to the rates of eligibility for matriculation also refer to an additional 5% of students from the trial group and an additional 24% of the students from the control group for whom there is matriculation data in 12th grade. This enables an examination of their eligibility for matriculation, despite the fact that there is no data for them from 9th grade. A comparison of preliminary conditions was not conducted for this group, but this group can help to reinforce or refute the data gleaned from the initial examination. Therefore, the findings pertaining to the rates of eligibility for matriculation ultimately referred to the 98 students in the trial group who comprise 94% of all students in the trial group who began their studies in 10th grade, and to the 75 students of the control group who comprise 93% of all students in the control group who began their studies in 10th grade.

Tables 3 and 4 below show that students in the trial group, who had similar characteristics in terms of failing scores and average scores at the end of 9th grade in comparison to the students in the control group (and were assigned to classes with similar characteristics as those of the control group in 10th grade), succeeded in achieving significantly higher scores than the students in the control group.

It was found that:

- 1. In the Start trial classes, there is a high rate of eligibility for matriculation, compared to 0% eligibility in the control classes.**
- 2. In the Start trial classes, there is a high rate of students who are lacking only one subject, compared to 0% of the students who lack only one subject in the control classes.**

While 100% of the students in the control group are not eligible for a matriculation certificate, 52% of the students in the trial group are eligible for a full matriculation certificate. Some 65% of the students in the trial group are eligible for a matriculation certificate or lack just one subject for matriculation. In comparison to the overall population (all of those with scores in 12th grade even if there are no scores for them from 9th grade), the data is similar: 53% of the students in the control group who complete 12th grade are eligible for a matriculation certificate, compared to 0% of the control group.

It was also found that the rate of overt dropout among students in the trial classes was somewhat lower than the dropout rate in the control classes (6.7% in the trial classes versus 11% in the control classes).

It seems that the Start program has indeed reached its target population and is helping this population. It has indeed reached students at the low end, not including special education students, and it has reached students with particularly high rates of failures. The average number of failures in the trial and control groups in the different schools is similar – an average about 8 to 8.3 failing scores in each group. An even more precise analysis indicates that while the range of failing scores in 9th grade among students in the control group is between 1 and 14, the failing scores in the trial group range from 4 to 14. That is, the trial group does not include students with a low rate of failures (see Appendix 3). In addition, while 74% of the students in the Start population have 7 or more failures, the Start students comprise 67% of those eligible for a matriculation certificate (see Tables 5 and 6 below).

The average scores of the trial group (average – 44) and control group (average – 45) at the end of 9th grade are very similar, with the control group enjoying a slight advantage: The students in the control group were slightly stronger than the students in the trial group in 9th grade. The average score is a failing one in each of the groups (see Table 2). An additional advantage for the control group can be found in the number of students per class, which was lower in the control classes.

Thus, the basic assumptions of the program were supported. None of the students in the control group was eligible for a matriculation certificate or close to achieving one, compared to the situation in the trial group. The rate of hidden dropout among the students in the control group was significant and reaches 100% of those who do not attain a matriculation certificate or come close to attaining one compared to most of the trial group who attain a matriculation certificate or come close to attaining one.

These findings correlate with the assessments of the interviewees (school principals and representatives of the education system), who see a clear contribution by the Tafnit program in the academic context (study skills, achievements, an improved attitude toward the school and toward learning), in the social realm (acquiring more positive norms of behavior, social abilities, identification with the school and with stronger students) and on the personal level (acquiring self-confidence, responsibility, focusing on themselves and on their studies).

Nonetheless, it should be noted that this research was only conducted in two schools (which are the only two in which it was possible to conduct the study during this period). In order to confirm and reinforce the research findings, we recommend conducting further research on a wider scale during the coming years.

2. Findings of the analysis of scores

A. Summary of matriculation eligibility data for 12th grade students (with scores in 9th and 12th grade)

Table 3 –

Distribution of the rate of eligibility for matriculation, of those lacking just one score, and of those lacking eligibility in both of the schools, in the trial group and in the control group, among students with scores from both 9th and 12th grades

School	Group	No. of students who began to study in 10 th grade	No. of students who completed 12 th grade	Students with data from grades 9 and 12 ⁵	Eligible for a matriculation certificate		Lack one subject		Lack more than one subject		Total who are eligible or lack one subject		Lack eligibility	
					No.	%	No.	%	No.	%	No.	%	No.	%
School A	Trial	49	49	45	25	55.6%	8	17.8%	12	26.6%	33	73.3%	20	44.4%
	Control	45	37	25	0	0.0%	0	0.0%	0	0%	0	0.0%	25	100.0%
School B	Trial	55	49	47	23	48.9%	4	8.5%	20	42.6%	27	57.4%	24	51.1%
	Control	36	40	31	0	0.0%	0	0.0%	0	0	0	0.0%	31	100%
Total for both schools	Trial	104	98	92	48	52.2%	12	13.0%	32	34.8%	60	65.2%	44	47.8%
	Control	81	75	56	0	0.0%	0	0	0	0	0	0	56	100%
Significance of the differential					9.98***		3.70***		7.48***		13.07***		-9.78***	

p<0.001***

We also conducted a test of sampling error. See the data in Appendix 3.

Table 4 –

Distribution of the rate of eligibility for matriculation, of those lacking just one score, and of those lacking eligibility in both of the schools, in the trial group and in the control group, among all of the students with scores from 12th grade

		Students with data from grade 12	Eligible for matriculation		Lack one subject		Total who are eligible or lack one subject		Lack eligibility	
			'on	%	'on	%	'on	%	'on	%
School A	Trial	49	28	57.1%	9	18.4%	37	75.5%	21	42.9%
	Control	35	0	0.0%	0	0.0%	0	0.0%	35	100.0%
School B	Trial	49	24	48.9%	4	8.2%	28	57.1%	25	51.0%
	Control	40	0	0.0%	0	0.0%	0	0.0%	40	100.0%
Total for both schools	Trial	98	52	53.1%	13	13.3%	65	66.3%	46	46.9%
	Control	75	0	0.0%	0	0.0%	0	0.0%	75	100.0%

⁵ Some of the students lack scores from 9th grade after arriving from other middle schools. Some of the students lack scores from grades 9 or 12 (relatively few in 12th grade) due to problems with the recording of scores in the schools and the elapsed time – scores were not found. In some cases, it reflects student dropout. In the control group, the documentation is worse because the data comes from earlier years.

Diagram 3 –

Comparing eligibility for matriculation in the trial group and in the control group, in %, among all of the students who began their studies in 10th grade and for whom there is matriculation data in 12th grade

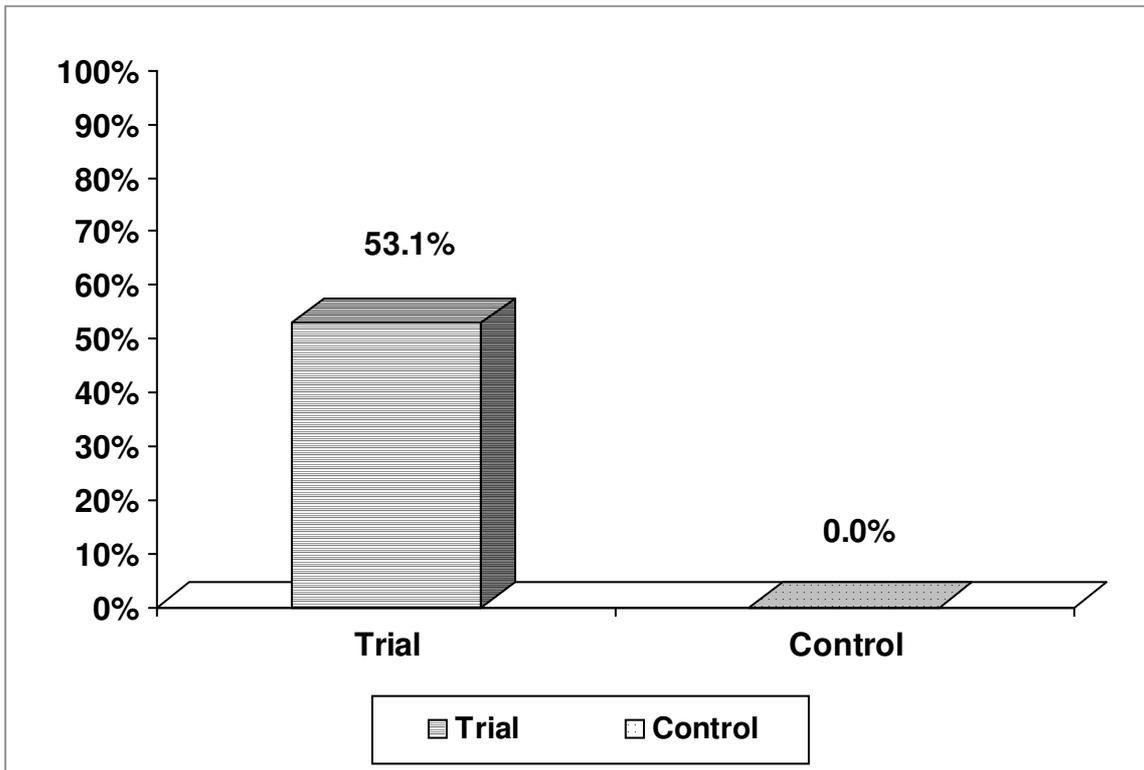
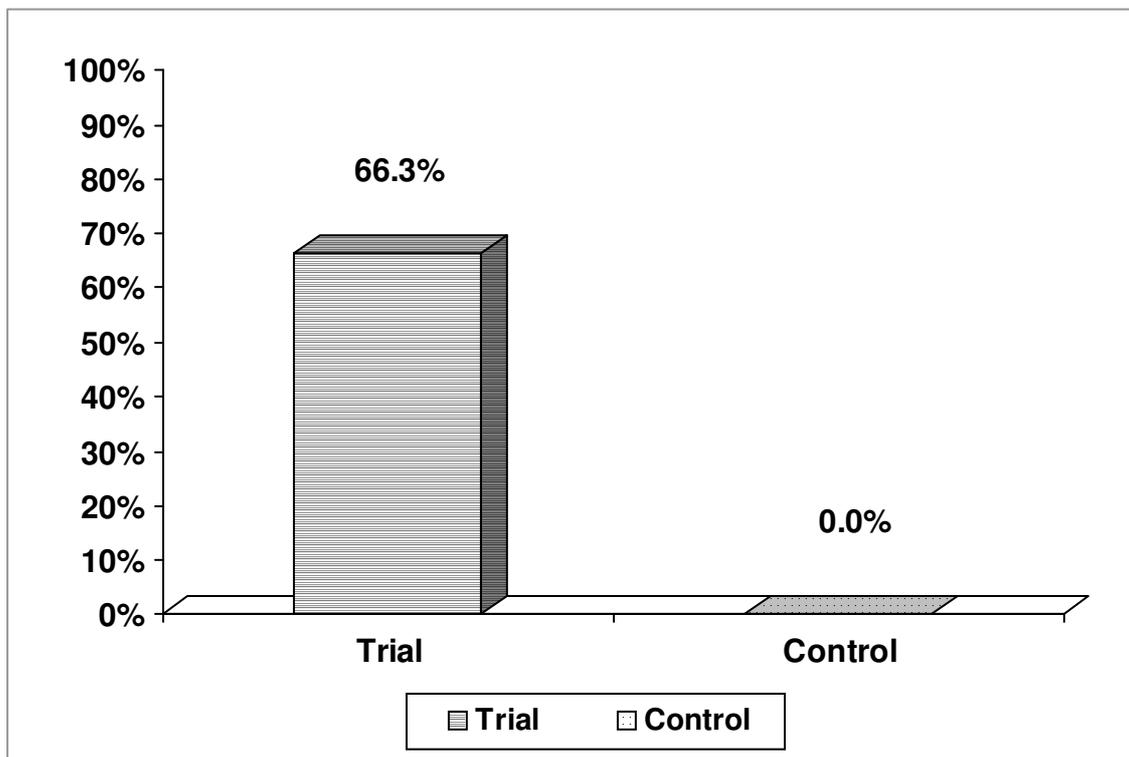


Diagram 4 –

Comparing those eligible for matriculation and those who lack one subject in the trial group and in the control group, in %, and for whom there is matriculation data in 12th grade



B. Distribution of those eligible for matriculation certificates in the trial and control groups vis-à-vis the characteristics of the student population in 9th grade

Table 5-

Comparison of the rate of eligibility for matriculation, trial vs. control, among students who had up to 6 failures in 9th grade, and among students who had 7 or more failures in 9th grade, relative to all students eligible for matriculation

Group	Total eligible for matriculation	Eligible for matriculation among students with 7 or more failing scores in 9 th grade		Eligible for matriculation among students with up to 6 failing scores in 9 th grade		Significance of the differential
		Students	%	Students	%	
Trial	48	32	66.7%	16	33.3%	8.16***
Control	0%	0%	0%	0%	0%	--
Total	48	32	66.7%	16	33.3%	

p<0.001***

Diagram 4

Comparison of eligibility for matriculation, trial vs. control, among students who had up to 6 failures in 9th grade and among those with 7 or more failures in 9th grade, relative to all students eligible for matriculation

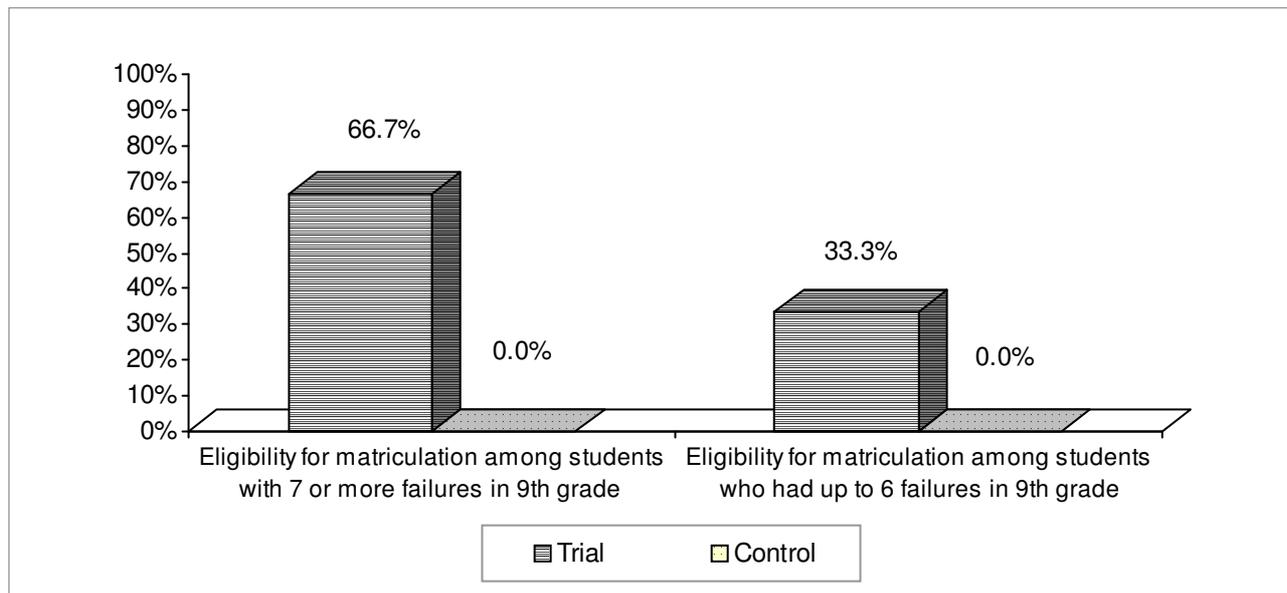
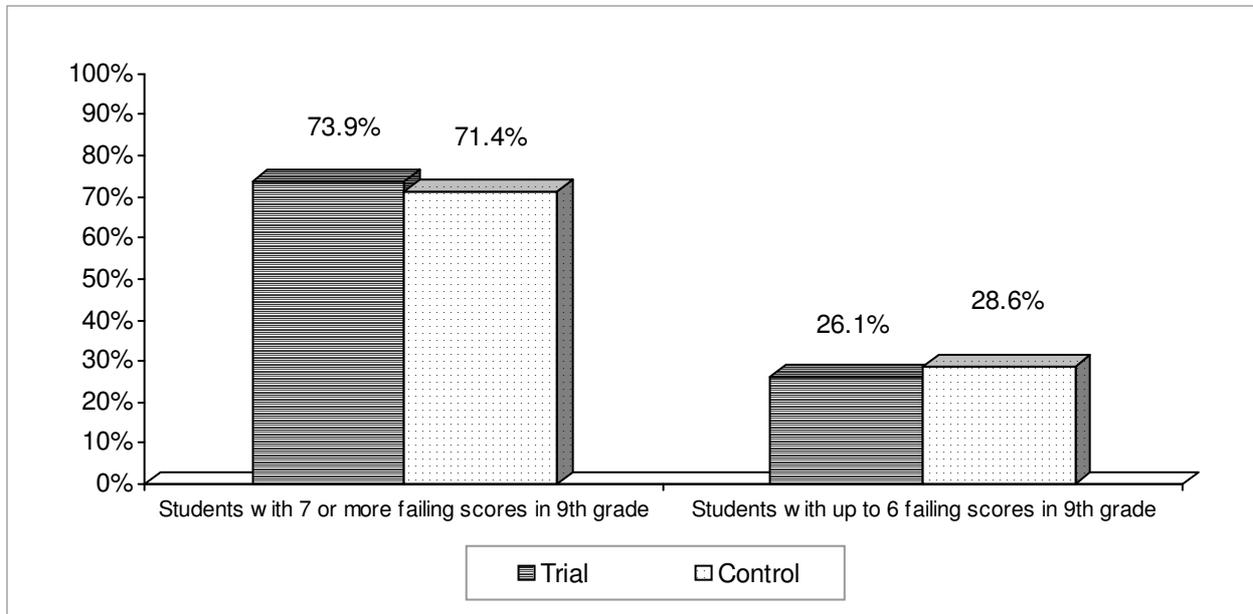


Table 6:
Distribution of students with 7 or more failing scores, and students with up to 6 failing scores in 9th grade

Group	Total no. of students	Students with 7 or more failing scores in 9 th grade		Students with up to 6 failing scores in 9 th grade		Significance of the differential
		Students	%	Students	%	
Trial	92	68	73.9%	24	26.1%	0.109
Control	56	40	71.4%	16	28.6%	
Total	148	108	73.0%	40	27.0%	

p<0.001***

Diagram 5
Distribution of students who had 7 or more failing scores or up to 6 failing scores in 9th grade, trial and control



3. Findings from the interviews

In order to support and validate the findings, interviews were held with the principals of the schools where the research was conducted; with the director of secondary education in the Be'er Sheva Municipality, Ms. Ruti Frankel; and with the Ministry of Education's supervisor of secondary schools in Be'er Sheva, Ms. Varda Levy (hereinafter: "the leaders").

Wherever a quote appears, it refers to one of the interviewees cited in that context. The quotes support the main contentions presented above.

The schools have been implementing the Start program since 2004 (from the end of the 2003-2004 school year). The principals note that they wanted to participate in the program because they believe in its theoretical and practical rationale and in Tafnit's potential for providing a true solution for a real need. Among the comments by the principals: *"I realized that in order to break through the glass ceiling in raising the number of students eligible for matriculation and generating some change in the educational staff's perceptions and work principles, I needed to try something different, not more of the same."* *"The reason for joining was because our school accepts students from the adjacent neighborhoods without any selection. Our motto is that we do not give up on anybody and do not give in to anyone ... We believe that everyone is capable if given the appropriate solutions. The Start program enables us and will enable us to address the most alienated and difficult population."*

The target population for the program according to the interviewees is the "under achieving" population that is at risk of hidden dropout – *"the population that sits with at least one leg, if not two, outside of the system."*

The school principals and the coordinators of the special programs at these schools (who were interviewed at the time the mapping was conducted) note that the control classes are classes designed for students with very similar characteristics to those of Tafnit students. They also note that no significant demographic change has occurred in the population feeding into the schools between the years, and that the target population Tafnit has reached is similar to the population in the control classes.

The interviewees, principals and leaders note that the program has an impact in three main aspects. All of the interviewees emphasized all three aspects, sometimes in a similar way and sometimes differently. All of the interviewees believe that these achievements would not have been accomplished without Tafnit, as explained below.

At the academic level – The interviewees claimed that the program has beneficial affects on the students' adjustment to the education system, has led to a change in study habits (regular attendance), with students engaging in learning and subjects of study even outside of school hours.

It has boosted motivation for learning, enriched knowledge and facilitated the acquisition of study skills and an appropriate emotional approach – deferring gratification. Consequently, they achieve a matriculation certificate, transition from a failing score to a passing score and even to a high score. In addition, some noted a qualitative improvement in the matriculation certificate, with some of the students learning 4 or 5 units instead of sufficing with only 3 units.

From the principals' comments: *"They start to function. They have to; they are in a framework. Then there is no dropout and there is attendance and they begin to experience success and personal advancement ... We see that in the 12th grade exams it is much easier for us with them. During the first year, it is very difficult – they are only beginning to develop study habits. In 12th grade, we already see the fruits – they know how to study, how to prepare. They also learn how to learn ... The student starts to get to know himself. That also leads to an improvement in scores. They simply make strides and take the matriculation exam. For example, there was a composition exam in the winter and the entire 12th grade did the exam. After about 15 minutes, the Tafnit students left the room. I was alarmed, but they told me: 'We wrote and it flowed.' They all passed. Nobody failed and the scores were not bad. They simply acquired the skills." "Children who had never studied for a test now sit from morning to night within a framework and learn. They undergo the experience of learning, perhaps for the first time. The learning experience for these children generates a different discourse with their friends. They talk about the studies and plan for the exams together. They become familiar with works of literature and concepts in history, and they talk about them. The discourse among friends is suddenly not only how they spent the weekend hanging out and how it was at the pub."*

At the social level – As a result of participating in the program, the children acquire self-confidence, social capabilities and different norms of behavior. They leave their troubled friends in the neighborhoods and join new friends, and abandon anti-social behaviors of aggression and alienation. One of the leaders noted that some of the students did not have social problems prior to entering the program but that the program enhanced their self-confidence vis-à-vis "the regular kids," who did not need the program.

One of the leaders: *"In the past, he [one of the Tafnit children] had other ways to compensate that helped him in establishing his status among his peers. Today, he also has the academic field on his side." "Today the school for him is something that brings him success and appreciation for the teachers that invest in him."*

A principal: *"Their behavior changes and, as a result, they become much more involved in school. They participate completely. They used to be the outsiders, the troublemakers, those who created discipline problems in middle school, before the program ... As soon as we begin fighting for their success and they want to belong, then the rest of the school respects this and accord a high very place for this at school. Their self-confidence improves. From behavior of disturbances, vagrancy*

and chutzpah, they begin to behave better. The kids from 12th grade are now stars in the graduation ceremony and do not give up."

One of the leaders: *"More adaptive, less provocative toward society. Accepting, inclusive, less aggressive and alienated, feels that he belongs, smiles more, and more relaxed. A partner and a participant. It's a different world, a different world."* Another principal: *"Before, the child might have said to the teacher – 'Why, who are you to tell me what to do?' Now he knows who the teacher is and there is a relationship of respect, appreciation. They understand and see in authority a source of concern, of caring."*

At the personal level – The students are empowered and their self-image is boosted. They are proud and confident in themselves, more focused on themselves, demonstrating seriousness, responsibility, and persistence, setting challenges and meeting them, and acting in a less provocative way. They make sure to regularly attend school every day and spend many hours in school, bringing their study materials. The principals: *"The student is no longer disconnected and his self-image improves. They speak with pride and their behavior changes. They already have a different set of values. Their involvement, the lack of alienation and the sense of belonging – belonging to the place, loving the place, receiving, appreciating, supporting the system."*

A leader: *"There is a substantial change from what they were in the past to what they are today. They are really serious, responsible for their actions, setting challenges for themselves and meeting these challenges." "There are children whose voices we had never heard and suddenly they have something to say. There is personal empowerment."*

One of the focused contributions on the personal level is preparing the student for the future: The program influences the students' set of values and opens before them the desire and tools for better integrating into society and creating a normative future for themselves. They develop the desire to continue to study. All of this enables them a better start in the army and later in academia. A leader: *"Understand that you are taking a child that had no chance for anything, only perhaps to enter prison or to become a construction worker or the owner of a stall in the market. They probably would also not have enlisted in the IDF. And instead of that, there is person who is emotionally mature, with a certificate that provides entry to academia and, of course, to enlist in the army. You simply take someone and change his life experience and then his future changes. His entire world changes completely. He takes on more responsibility for his life and becomes a person with significant abilities and values that also generates an inner change. And then there are the results – a matriculation certificate, tools for coping, an enhanced self-image. All this facilitates his entry into the world – the army (at a higher level), economically and in academia. This is a 100% improvement."*

Additional spheres of influence: The school principals and leaders note that the program influences wider circles beyond the student himself, extending also **to his family**: *"The parents start to trust the system, cooperate, are more involved and they themselves also begin to believe in their children. At first, they had no faith – after nine years of disappointments and problems at school. They become allies of the school, lead the children to success, and are partners in their success. Instead of frustrated parents who attack and blame the school, they become partners and, most importantly, make efforts for their children's sake. And this is one of the important factors for the children's success – what they see at home."*

The leaders and the principals emphasize the influences of the **teachers' room**. They say that the discourse in the teachers' room is different, with greater faith in the child and the ability to lead him toward success. There are changes in the class schedules, in the work tools for teachers and in the role identity of the teachers. Leaders: *"A new work culture enters the school ... strong efforts, commitment, professionalism, team pride."* *"This goes beyond what happens to the student. Lots of things happen in terms of the school and the principal – faith, increased motivation, a different system of work (semesters), a different way of organizing studies. The change is a systemic one – starting with the professional teacher who today believes more in the student and searches for work methods that lead to success. At the level of the teachers' room, the entire perception of the school changes, with an understanding that more investment is needed and how this investment should be made ... Later, this is also at the level of the administration. The structure of studies at the school changes to a semester system, instructors are added, the teacher also takes on the aspect of a pedagogical leader."* A principal: *"After four years of work, I plan to also build in other classes some type of reference to the same population."*

The **impact at the municipal level** is also noted. The leaders: *"The city of Be'er Sheva has the lowest dropout rate in the country. I have no doubt at all that this is related to Tafnit ... There is a tremendous decline in violence. A Tafnit student is a potentially violent student, both at school and outside of school – and this is completely changing. There is no more vandalism because the children enter the system and they are suddenly appreciated there."* *"We reduced the dropout rate to 0.4%, while the national average is 4%. We have dozens of students who are really disconnected and some have also moved to a different city. The program engendered a revolution. I attribute this mainly to Tafnit, but also to other things. We also drastically increased eligibility for matriculation in every school where Tafnit operates. This is very significant from a municipal perspective. We lowered the violence during the past three years by 60-70% and that is documented by the police. There are other things in addition to Tafnit, but Tafnit has a place of honor in this change. The teaching staff is more sophisticated in addressing struggling populations and sees the student as an individual. We have also learned to conduct mapping and to monitor them."*

In regard to Tafnit's unique contribution and added value for this process: The school principals emphasize that other students at the same level would not attain the achievements and experience

the influences described above: *"It's clear that they can't succeed. We tried. But without resources, an organized and focused plan, support for teachers and parents – then it's impossible."* One of the leaders notes that the special combination of flexibility in allocating resources and very clear demands, close monitoring, etc. creates a special commitment in the schools. Another leader tends to think that Tafnit's impact is greater than that of other programs that can also help students, and for this reason Tafnit is seen as a revolution in the education system. *"There are a great many educators who have generated change among students and there are also other projects. The difference is that in Tafnit, success is mandatory. In Tafnit, the confidence in success is close to 100%. The success is not only on the academic level but also in other spheres that change the child – and that is greater than a program that is only academic or social. Here we try to change the system in its entirety. Another thing is that from our perspective, because so many students have experienced a change, we already see in Tafnit a real revolution within the education system. This is not a minor project, but really generates a revolution within teachers' rooms and in the way of thinking."*

The interviewees attribute the success to Tafnit's work mode (which is focused on the ability to lead the students toward success), to the structural change of the classes and the program of studies, to the role of the teacher and the clear demands that create commitment, and to the integration of different spheres – parents, teachers, administration and students – in the learning process. *"There is no such thing as a teacher saying one thing and a parent saying another thing. The whole enterprise engages in integrating spheres."*

Aspects cited as missing in the program: A few aspects were noted, with each aspect – except for the first – cited by one interviewee: There is a need to find ways to extend the program to additional children. A component of contribution to the community is lacking. It is not clear to what extent the children, who acquire learning skills and motivation to study in a group context, will be able to do this when they are alone.

Appendixes

Appendix 1 – Mapping student groups - Start program

Mapping of the school: School A

The profile of the 9th grade in 2001-2002: 255 students, plus 7 deaf students, divided into heterogeneous classes (with homogeneity between the classes); the number of classes in the grade is not known.

The profile of the 9th grade in 2003-2004: 245 students divided into 6 heterogeneous classes.

		10 th graders in 2003 (potential control group)			10 th graders in 2005 (the trial students)			Graduates of 12 th grade in 2005 (potential control group)			Graduates of 12 th grade in 2007 (the trial students)		
No. of students in the grade		271			259			270			262		
No. of classes in the grade		10			8			10			9		
Category of class	Type of class	Names of classes in the grade	No. of children in each type of class	Type of class	Names of classes in the grade	No. of children in each type of class	Type of class	Names of classes in the grade	No. of children in each type of class	Type of class	Names of classes in the grade	No. of children in each type of class	
	Regular – Academic Mabat	10-1 10-2 10-3 10-4 10-5	37 39 38 39 23	Regular – Academic	10-1 10-2 10-3 10-4 10-5	41 38 40 39 27	Regular – Academic	12-1 12-2 12-3 12-4 12-5	40 39 38 41 27	Regular – Academic	12-1 12-2 12-3 12-4 12-5	37 38 37 39 23	
	Mabar	10-6	26	Etgar	10-6	25	Academic – Mabar	12-6	25	Mabar	12-6	21	
	Low-end classes	10-7	26		10-7	22		12-7	22		12-7	26	
	Special ed	10-8	19	Success (Start)	10-8	27	Mabar	12-8	15	Etgar	12-8	27	
	Deaf	10-9	7					12-9	14		12-9	9	
					Success (Start)			Low-end classes	7	Success (Start)	12-10		
								Special ed					
								Deaf					
	Data collection	Control: 12-7, 12-8 (2004-2005) Trial: 12-5, 12-8 (2006-2007)											
		We were told that the profile of the students from the trial year and the control year was similar from a socio-demographic perspective. The makeup of the trial classes and the control classes were similar in terms of the population they served.											

Mapping of the school: School B

Profile of 9th grade, 2001-2002: 197 students in the grade, divided into 6 heterogeneous classes.

Profile of 9th grade, 2003-2004: 311 students in the grade, divided into 8 heterogeneous classes.

	10 th graders in 2003 (potential control group)			10 th graders in 2005 (the trial students)			Graduates of 12 th grade in 2005 (potential control group)			Graduates of 12 th grade in 2007 (the trial students)		
No. of students in the grade	314			407			313			393		
No. of classes in the grade	10			13			10			13		
Category of class	Type of class	Names of classes in the grade	No. of children in each type of class	Type of class	Names of classes in the grade	No. of children in each type of class	Type of class	Names of classes in the grade	No. of children in each type of class	Type of class	Names of classes in the grade	No. of children in each type of class
	Low-end classes	10-1 10-2	20 16	Etgar Tafnit Mabar	10-1 10-2 10-3	24 24 25	Low-end classes	12-1 12-2	20 20	Etgar Tafnit Mabar	12-1 12-2 12-3	24 13 25
	Mabar – internal pedagogic	10-3 10-4	27 23	Mabar – internal pedagogic	10-4 10-5	25 31	Mabar pedagogic	12-3 12-4	27 23	Mabar pedagogic	12-4 12-5	25 36
	Regular – Academic	10-5 10-6 10-7 10-8 10-9	37 39 37 39 38 38	Tafnit Regular – Academic	10-6 10-7 10-8 10-9 10-10 10-11 10-12	38 38 35 37 38 38 40	Regular – Academic	12-5 12-6 12-7 12-8 12-9 12-10	37 39 37 39 38 38	Regular – Academic	12-6 12-7 12-8 12-9 12-10 12-11 12-12	38 38 35 37 38 38 40
		10-10	38	Special ed	10-13	14				Special ed	12-13	14
Special notes				The 10-1 class is not suitable to be a Start class according to the school's pedagogical diagnostic team								
Data collection	Control: 12-1, 12-2 (2004-2005) Trial: 12-2, 12-5 (2006-2007)											
	We were told that the profile of the students from the trial year and the control year was similar from a socio-demographic perspective. The makeup of the trial classes and the control classes were similar in terms of the population they served.											

Appendix 2 – Criteria for a failing score

Common to both schools:

- A. Score of 0
- B. Score of 54 or below
- C. No score, for non-technical reasons – reflecting a total lack of functioning

School A:

- A. Any score in the grouping for the special education students or any score in the low grouping (C) or any similar grouping under an alternative name such as: a subject in which there is a remark "is learning according to a special curriculum" (generally, in literature and Arabic due to learning/language difficulties), or "exempt or "reinforcement" (an alternative name for grouping C).
- B. The subjects of mathematics and English – when an A1, A2 or A3 level and study unit is noted, these are groupings C. Or, alternatively, when a B level and study unit is noted (a lower level than grouping C).
- C. The subject of Arabic when a B level and study unit is noted (this refers to a low C grouping – like "non-readers" in English)

School B:

- A. Any score in the grouping for the special education students or any score in the low grouping (C) or any similar grouping under an alternative name such as: a subject in which there is a remark "is learning according to a special curriculum" (generally, in literature and Arabic due to learning/language difficulties)
- B. Any score in the grouping for the special education students or any score in the low grouping (C) or any similar grouping under an alternative name such as: any subject for which the remark "reinforcement" or the letter C ("*gimel*") is recorded. In Hebrew language ("*lashon*") – when the letter B ("*bet*") is recorded, which is parallel to "non-readers" (students who have great difficulty were assigned to grouping B in Hebrew language class, with a very low-level program).
- C. Any score in a science subject – constitutes a failing score. The low grouping in the cluster of mandatory subjects in middle school and in 10th grade – chemistry, biology and physics is a subject called "sciences." Students who were not assigned to a cluster of physics, chemistry and biology due to learning difficulties were assigned to "sciences" and a special curriculum was developed for them in the sciences at a very low level. For these students, the lack of scores in the three subjects of the cluster and any score in "sciences" – constitutes one failing score (and not 3 failing scores). Students who have a score in one or two of the three subjects of the cluster but lack a score in the second or third subject – any missing score will be considered as 0 – a failing score.

Appendix 3 – Distribution of failing scores and sampling error

Distribution of the number of failing scores for both groups

School A – trial classes, when in 9 th grade		School A – control classes, when in 9 th grade		School B – trial classes, when in 9 th grade		School B – control classes, when in 9 th grade	
No. of failing scores	No. of students with this level of failing scores	No. of failing scores	No. of students with this level of failing scores	No. of failing scores	No. of students with this level of failing scores	No. of failing scores	No. of students with this level of failing scores
14	3	14	1	14	0	14	0
13	1	13	2	13	1	13	1
12	1	12	4	12	4	12	0
11	3	11	1	11	1	11	1
10	4	10	3	10	8	10	6
9	2	9	1	9	5	9	5
8	9	8	3	8	8	8	6
7	8	7	2	7	11	7	4
6	8	6	3	6	5	6	6
5	4	5	2	5	4	5	0
4	2	4	0	4	0	4	2
3	0	3	0	3	0	3	0
2	0	2	2	2	0	2	0
1	0	1	1	1	0	1	0
No. of failures in the group	45		25		47		31
Average no. of failing scores	8		8.4		8.3		8

Testing the significance of the differentials between the average scores at the end of 9th grade, in the two trial classes and in the two control classes in each school.

School	Group	No. of students with data	Average score at the end of 9 th grade	Standard deviation	T test for checking the significance of the differential
School A	Trial	45	46.1	13.3	-0.266
	Control	25	47.0	12.0	
School B	Trial	47	42.0	8.7	-0.311
	Control	31	42.8	11.4	

ϵ_0^6 test (maximum sampling error) for each group

The sampling error checks the size of the deviation in estimating the percentage / average of data in the entire population, based on the sample. The sample in this case comprises the students for whom scores are available for both 9th grade and 12th grade.

School	Group	Sampling error – eligible	Sampling error – lacking one subject	Sampling error – total of eligible and lacking one subject	Sampling error – not eligible
School A	Trial	14.5%	11.2%	12.9%	14.5%
	Control	--	--	--	--
School B	Trial	14.3%	8.1%	14.4%	14.6%
	Control	--	--	--	--
Total for both schools	Trial	10.2%	9.8%	13.9%	14.6%
	Control	--	--	--	--

⁶ At 95% confidence level

