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National Institute for the Study of Behavioral Science

“Excellence 2000”
Initiated by the Society for Excellence through
Education
III Evaluation Study – Report Summary

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Prologue	3
Study Report Summary	4
Background	4
Study Goals	4
Study Tools	4
Study Participants	5
Study Findings	5
Comparative Analysis of Study Findings.....	8
Discussion and Summation	14
Program Documentation	19

Prologue

Excellence 2000 is a unique educational program for exceptional students in the fields of science, experiment and mathematical thought. The program operates in elementary, middle and high schools throughout the country, and is intended for gifted students who exhibit high learning potential and strong motivation. The program was developed and is operated by the Society for Excellence through Education with the assistance and cooperation of the Pedagogical Authority of the Ministry of Education, foundations and other organizations.

In 2002, following three years of the program operating in its current form, the Szold Institute conducted a study that examined the various components of the program and how it is perceived by teachers and students (Heem Younes and Freedman, 2002). Now, after three more years have passed, the Society for Excellence through Education wishes to conduct a summative evaluation.

The primary aim of this study is to examine the degree to which the goals set by the program designers have been attained: 1) the contribution of the program to its graduates, and 2) its contribution to school excellence. Throughout the study's two phases, these two questions were asked of principals, teachers and the graduates themselves. To this end, during the first phase of the study, in-depth interviews were conducted with a random sample of principals and teachers who teach in the program as well as with selected program graduates. During the second phase, questionnaires were filled out by a random sample of principals and teachers who teach in the program as well as by selected program graduates.

We wish to thank members of the Society for Excellence through Education and in particular all the principals, teachers and students that took the time to fill out the questionnaires. A special thank you is in order to all those principals, teachers and students who shared with us their thoughts and were willing to take part in the in-depth interviews. We also wish to thank Hila Dolev for her assistance with the first phase of the study and the research assistants – Shira Malka and Smadar Somech – for their valuable assistance with the various phases and their contribution to the writing of this report.

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Study Report Summary

Background

Excellence 2000 is a unique educational program intended for talented students who exhibit high learning potential and strong motivation in the fields of science, experiment and mathematical thought. The program was developed by the Society for Excellence through Education with the assistance and cooperation of the Pedagogical Administration of the Ministry of Education and is operated by it.

In 2002, following three years of the program operating in its current form, the Szold Institute conducted a study which examined the various aspects of the program and teachers' and students' feelings towards it (Heem Younes and Freedman, 2002). Three years later, the Society for Excellence through Education wishes to conduct a summative evaluation, the primary aim of which is to examine the degree of the program's success in attaining the goals set at the outset of the program: 1) the contribution of the program to its graduates, and 2) its contribution to school excellence. Throughout the study, these two questions were asked of principals, teachers and the graduates themselves.

Study Goals

The study's primary goal is to examine to what extent the program has succeeded in attaining the goals set by its designers at its initiation. Accordingly, two main questions were asked:

1. To what extent has the program contributed to its graduates?
2. To what extent has the program contributed to school excellence?

Study Tools

During the first phase of the study, conducted throughout the 2005 school year, **semi-structured, in-depth interviews were held with a random sample of principals, teachers and program graduates**, for the purpose of understanding the main study questions and the development of additional research tools, to be used in the second phase of the study.

The second phase of the study included **three questionnaires handed out to principals, teachers and program graduates**. The questionnaires include a series of open and closed questions relating to the participants' positions on the various topics, including the "Excellence 2000" program, the program's curriculum, the program's contribution, enrichment activities and so forth.

Study Participants

Six schools took part in the first phase of the study, where in-depth interviews were held with six principals, 15 teachers and 22 program graduates. In the second phase of the study, questionnaires were answered by 43 principals from 37 schools (in six schools both middle and high school principals answered the questionnaire), 37 teachers who teach the programming in 20 different schools and 244 graduates of the program in 13 different schools.

Study Findings

Reasons for Operating, Taking Part and Studying in the Excellence 2000 Program

Statements widely agreed to by most principals expressed feelings of support and sympathy with the program out of a sense of pride about the operation of the program in their school (average 3.9, 100.0%), out of their perception of its positive role among students (average 3.8, 100.0%), and out of their perception of its positive role among teachers (average 3.8, 100.0%). Teachers stated that the reasons that led them to teach in the program are primarily related to the program's contribution to the students, the broadening of students' minds (average 3.7, 100.0%), and the advancement of motivated students (average 3.6, 97.2%). Teachers also reported reasons that related to the advancement of the teachers themselves, of being proud to teach in the program (average 3.6, 100.0%), that the program encourages teaching using a guided approach (average 3.5, 97.3%) and of teaching being more of an experience (average 3.5, 97.2%). The main reason cited by graduates for their participation in "Excellence 2000" was the expansion of their horizons (average 3.5, 95.1%). Graduates also cited the joy they found in learning (average 3.3, 88.6%) and the challenges it posed to them (average 3.2, 86.3%).

Contribution of the Excellence 2000 Program to Students and Graduates

The findings indicate that, in the eyes of the teachers and principals, the program contributes greatly to the students and graduates compared to a slightly lesser contribution in the eyes of the students themselves. In addition, each of the groups emphasized different aspects of contribution to the participating students. The principals related to a more general contribution of the program, that it contributes to strengthening the students' self esteem (average 3.8, 100.0%), brings students closer to scientific fields (average 3.7, 100.0%) and encourages them to strive for excellence (average 3.7, 100.0%). On the other hand, teachers related to the program's improvement of the students' thought processes and emphasized that it awakens students' curiosity (average 3.6, 100.0%), expands their minds through unique learning methods (average 3.6, 100.0%), motivates the students to understand natural phenomena (average 3.6, 9.4%) and provides them with tools for developing thought processes and skills (average 3.5, 100.0%). The program graduates also emphasized that self reliance and individual work in the program expanded their knowledge in the fields of science (average 3.2, 87.7%), provided the students with tools for thought development (average 3.2, 80.5%) and contributed to enriching knowledge and providing in-depth understanding in the fields of science (average 3.1, 84.4%).

The Excellence 2000 Program's Reputation in the School

Principals, teachers and students were in greater agreement with the statement relating to the program's importance for the school principal (average 4.0, 100.0%; average 3.6, 89.6% and average 3.2, 83.9%, respectively). The groups also agreed on the fact that the program influences the atmosphere and the striving for excellence in the school in general (average 3.3, 81.4%; average 3.0, 80.6% and average 2.8, 64.0%, respectively), that the general school population respects and admires the students in the program (average 3.3, 93.0%; average 3.2, 94.4% and average 2.5, 51.0%, respectively) and did not agree with the statement that the general school population mocks the program students and ridicules them (average 1.2, 2.30%; average 1.5, 2.8% and average 1.8, 18.2%, respectively). In addition, principals and teachers agreed that principals respect the teachers who teach in the program (average 3.9, 100.0% and average 3.4, 94.6%, respectively) and that school principals are interested in the integration of the program's main ideas (average 3.8, 100.0% and average 3.5, 94.3%, respectively).

Characteristics of Students in the Excellence 2000 Program

The findings indicate that, in general, the agreement of the principals with each of the statements is the highest among the three groups and that the agreement expressed by the program graduates is the lowest. Nevertheless, the three groups have expressed the highest agreement with the statement that students who take part in the program are extremely proud of doing so (average 3.7, 100.0%; average 3.4, 100.0% and average 2.9, 72.3%, respectively). The groups have also agreed that, in their school, there are clear criteria for accepting students to the program (average 3.5, 93.0%; average 3.2, 88.9% and average 2.8, 64.7%, respectively) and that students who take part in the program exhibit a willingness to invest efforts and self learning (average 3.1, 83.7%; average 3.0, 77.1% and average 2.7, 63.1%, respectively). The differences between the three groups were found statistically distinct (a multiple variant MANOVA test was held). With respect to most of the statements, the program graduates have expressed less agreement than teachers and principals.

The Relationship with SEE

Both principals and teachers express satisfaction with the quality of their relationship with SEE (average 3.5, 97.6%; average 3.5, 97.3% respectively). The teachers further report that their relationship with the coordinator on behalf of SEE is also a good one (average 3.5, 100.0%). On the other hand, it seems that over half the principals (56.1%) would like to see the relationship with SEE strengthened (average 2.8), compared with only a third of the teachers (average 2.3, 34.3%). This difference was also confirmed as distinct in a *t* test ($p < .05$).

Enrichment

Teachers and program graduates report that the scientific enrichment contributes to the program and the student (average 3.6, 97.2% and average 3.1, 84.8%, respectively), that it includes good activities (average 3.4, 100.0%; average 3.2, 88.2%, respectively), that the number of activities should be increased (average 3.4, 94.3% and average 3.3, 85.1%, respectively) and that it acts as a main attraction to the program for the students (average 3.1, 70.6% and average 2.9, 76.3%, respectively). Both groups feel the enrichment

activities should not be changed (average 2.4, 38.25% and average 2.5, 41.9%, respectively).

Ways in which the Society for Excellence through Education can Contribute to the Integration of Excellence in Schools

The ways illustrated by the teachers' and principals' answers dealing with SEE's contribution in the general school environment ($n=17$, 27.9% and $n=11$, 40.7%, respectively), include social and educational activities for the general school population. They have also added that SEE can contribute to the promotion of school excellence by increasing the number of enrichment activities ($n=15$, 24.6% and $n=2$, 7.4%, respectively), by conducting additional teacher training ($n=11$, 18.0% and $n=7$, 25.9% respectively) and by increasing budget and resource allocation ($n=11$, 18.0% and $n=5$, 18.5% respectively).

Ideas for Change in the Excellence 2000 Program

Few principals, teachers and graduates pointed out the need for change in the program. Nevertheless, the three groups noted the need for a change in the program's enrichment activities. Graduates ($n=69$, 34.0%) principals ($n=10$, 24.4%) and teachers ($n=8$, 25.0%). Principals and graduates only, saw a need for structural changes ($n=9$, 22.0% and $n=30$, 14.8%, respectively), for example, the need for continuation of the program through high school or a change in the student acceptance process.

Summary of Phase I of the Study – Interviews with Principals, Teachers and Program Graduates

The interview summation points to three main aspects that arise out of the interviews, regarding the Excellence 2000 program's contribution to its participants. The first aspect is the contribution of the program to the **students** who take part in it, in terms of enrichment, learning experience, development of thought processes and improvement of self esteem, even though the latter receives less prominence compared to the others. The second aspect is the contribution to the **teachers** in terms of enrichment, teaching diversity, satisfaction and enjoyment. The third aspect is the contribution to the **school** in terms of reputation and public relations and the ability to nurture good students. Additionally, SEE's ability to create a close relationship with the program's operators in the school – the teachers, program coordinators and principals – strengthens their **commitment** to the program and strengthens the program's **position** in the school.

One issue requiring change is the program's influence on "excellence" as a value in the school. The common perception is that "excellence" relates to measurable accomplishments and only the best students. The program, as currently operated in schools, is not perceived as entirely fulfilling these functions: the program does not provide measurable achievements and excelling students are not the only ones who take part (in some cases the main criteria for acceptance to the program are will and motivation). The program must continue to work toward establishing an understanding of a broader definition of excellence, one that will allow the entire school to take part.

Thus it seems that the interviews can teach us about the program's advantages primarily in the program's contribution to the principals, teachers and students and the range of its influence, broad or narrow, as a result of the program's position in the school. It is possible to learn about the points that need to be strengthened and think of ways to change the current situation so that the program's goals can be attained in an improved and more successful manner than that found today.

Comparative Analysis of Study Findings

The Excellence 2000 Program Contribution to Student / Graduate – Comparison among Principals, Teachers and Graduates

The principals, teachers and students were presented with a list of statements relating to the Excellence 2000 contribution to the student/graduate. The participants were asked to rank their agreement with each of the statements. It is important to note that unlike the questionnaires to teachers and principals, statements relating to the program's contribution were presented to program graduates, together with statements relating to their opinion of the program. The number of 'contribution' statements was reduced as they are no longer relevant to most graduates. In this comparison we will relate to statements that are common to the three groups and consider the program's contribution to the student. The principals and teachers generally exhibited a higher degree of consent with the statements compared with the degree expressed by the students. Principals, teachers and graduates emphasized different aspects of the program's contribution to its participants. In this manner, principals related to the overall contribution of the program to the students, its contribution to strengthening student self esteem (average 3.8, 100.0%), brings students closer to sciences (average 3.7, 100.0%) and encourages them to strive for excellence (average 3.7, 100.0%). In comparison, teachers related primarily to the program's contribution to developing thought processes and skills and the students' motivation to study and learn. The teachers also emphasized that the program stimulates student curiosity (average 3.6, 100.0%), expands their knowledge through unique learning methods (average 3.6, 100.0%), increases their motivation to better understand natural phenomena through research and experiment (average 3.6, 94.3%) and provides the students with tools to develop cognitive skills (average 3.5, 100.0%). The graduates' answers were closer to the teachers' answers, as they emphasize that self study in the program has expanded their knowledge in the sciences (average 3.2, 87.7%), provided them with tools to develop thought (average 3.2, 80.5%) and contributed to the in-depth understanding and acquisition of knowledge in the fields of science (average 3.1, 84.4%).

The principals', teachers' and program graduates' responses were compared regarding the degree of their agreement with certain statements that describe the Excellence 2000 program contribution to students and graduates of the program (a multiple variant MANOVA test¹). The test findings indicate a distinct statistical difference between the three groups (principals, teachers and graduates), in the degree of overall agreement with the statements describing the program's contribution to students. A detailed analysis

¹ All the data from the statistical tests appear in full in the full report and have been removed from the summary.

points to the differences between the three groups as they relate to the statements describing the program's contribution to the students.

**The Excellence 2000 Program's Position in the School –
Comparison among Principals, Teachers and Graduates**

Principals, teachers and graduates were presented with a list of statements dealing with the Excellence 2000 program's position in the school. The groups were asked to rank the degree of their agreement with each of the statements. It should be noted that the list of statements presented to graduates is shorter than that presented to principals and teachers and therefore the comparison will relate only to common items. On the face of it, it seems that this comparison shows a strong degree of similarity between the three groups with the statements, as all three groups expressed a strong degree of agreement with the statement that deals with the importance of the program to the principals (average 4.0, 100.0%; average 3.6, 89.2% and average 3.2, 83.9%, respectively). The groups have also agreed with the statement that the program strongly influences the general strive for excellence in the school (average 3.3, 81.4%; average 3.0, 80.6% and average 2.8, 64.0%, respectively) and the groups did not agree with the statement that the general school population mocks and ridicules the program students (average 1.2, 2.3%; average 1.5, 2.8% and average 1.8, 18.2%, respectively). The three groups agreed that the general school population appreciates and respects the program students, and nevertheless, principals and teachers agreed with this statement more than the students (average 3.3, 93.0%; average 3.2, 94.4% and average 2.5, 51.0%, respectively).

In addition, principal and teacher responses were compatible with relation to statements that deal with principals' appreciation of the teachers who teach in the program (average 3.9, 100.0% and average 3.4, 94.6%, respectively) and dealing with the principals' desire to implement the central ideas of the program (average 3.8, 100.0% and average 3.5, 94.3%, respectively). Nevertheless, it should be noted that while principals agreed with the statement that they are highly involved in the program and its ideas (average 3.6, 93.0%), teachers ranked this item slightly lower (average 3.2, 83.3%).

**Characteristics of Students Participating in the Program –
Comparison among Principals, Teachers and Graduates**

Principals, teachers and program graduates were presented with a list of statements relating to the characteristics of the students in the Excellence 2000 program. The participants were asked to rank their agreement with every one of the statements. The findings show that, in general, the level of agreement of the principals with each of the statements is higher while the agreement of the program graduates is the lowest of the three groups. However, the three groups – principals, teachers and graduates – are similar in relation to the ranking of most of the statements, as all three expressed a great degree of agreement with the statement that students taking part in the program are very proud to do so (average 3.7, 100.0%; average 3.4, 100.0% and average 2.9, 72.3%, respectively), agreed with the statement that the school has certain clear criteria for accepting students to the program (average 3.5, 93.0%; average 3.2, 88.9% and average 2.8, 64.7%, respectively) and that the program hosts students who are willing to invest

effort and resources in self learning (average 3.1, 83.7%; average 3.0, 77.1% and average 2.7, 63.1%, respectively) and only talented students (average 3.0, 81.4%; average 3.0, 75.0% and average 2.9, 69.4%, respectively). We will further note that principals and teachers agreed that one of the main characteristics of the program students is their high motivation average (3.4, 93.4% and average 3.2, 86.1% respectively). In addition, principals, teachers and graduates disagree with the statement that claims that in their school, any student that wishes can join the program (average 1.9, 16.30%; average 1.7, 2.7% and average 2.0, 28.2%, respectively).

Although the theoretical comparison does not find differences between the three groups on most of the statements describing the characteristics of the students that take part in the program, due to the finding that shows principal agreement as highest of the three groups, while graduate agreement is the lowest, a multiple variant MANOVA test was conducted. This compared the responses of the three groups – principals, teachers and program graduates – and their agreement with statements common to the three groups. The test findings revealed that principals see the acceptance process as clear, structured and even, with high and strict standards; more so than do the teachers or the students.

Relationship with SEE – Comparison between Principals and Teachers

Principals and teachers were presented with statements relating to the Society for Excellence through Education, which they were requested to rank according to the level of their agreement with each of the statements. The comparison shows that both principals and teachers are satisfied with their relationship with SEE (average 3.5, 97.6% and average 3.5, 97.3%, respectively). Teachers report that their relationship with the coordinator on behalf of SEE is a good one (average 3.5, 100.0%).

Enrichment Activities – Comparison between Teachers and Graduates

Teachers and graduates were presented with statements dealing with their position on enrichment activities which they were asked to rank according to the level of their agreement with each of these statements. The comparison between the teacher and graduate responses show a similarity in their position: both groups agree that the scientific enrichment activities contribute to the program and the students (average 3.6, 97.2% and average 3.1, 84.8%, respectively), that the activities are successful (average 3.4, 100.0% and average 3.2, 88.2%, respectively), that the number of activities should be increased (average 3.4, 94.3% and average 3.3, 85.1%, respectively) and that these activities are a strong attraction point to students joining the program (average 3.1, 70.6% and average 2.9, 76.3%, respectively). Both groups did not agree with the statement that enrichment activities should be changed – 38.5% of the teachers (average 2.4) and only 41.9% of the students (average 2.5) agreed with this statement.

Major Factors Contributing to the Success of the Excellence 2000 Program – Comparison between Principals and Teachers

From a comparison between principals' and teachers' responses as to the three major factors contributing to the success of the Excellence 2000 program, it seems that both groups noted the same factors as major contributors, though these were given different weight. Both groups noted the teachers as one of the contributing factors to the success of

the program ($n=31$, 24.6% and $n=16$, 24.6%, respectively) and in particular, the importance of selecting suitable teachers was noted by the principals, while teachers noted the teachers' commitment to the program. The two groups also noted the students' interest and motivation ($n=25$, 19.8% and $n=12$, 18.5%, respectively) the importance of the school's preparation ($n=17$, 13.5% and $n=11$, 16.9%, respectively), including the principals' commitment and determination to have the program run in their school. Notwithstanding, the factor ranked as highest in contributing to the program, among teachers, relates to the unique character and nature of the program ($n=22$, 33.8%), including reference to the enrichment activities, the different learning methods and the content. This factor was ranked as fourth among the principals and in lower frequency ($n=20$, 15.9%).

Factors that Hinder the Success of the Excellence 2000 Program – Comparison between Principals and Teachers

From a comparison between principals' and teachers' responses as to the three major factors hindering the success of the Excellence 2000 program, it seems that both groups are compatible as to these factors. Both groups reported lack of resources ($n=21$, 24.7% and $n=8$, 14.0%, respectively), poor laboratory facilities ($n=11$, 12.9% and $n=3$, 5.3%, respectively) and also related to teaching hours, too few in the principals' opinion ($n=11$, 12.9%) and at inconvenient hours by the teachers opinion ($n=6$, 10.5%). Other difficulties relating to the teachers ($n=12$, 16.9% and $n=6$, 12.2%, respectively) include the low frequency of teacher training, difficulties relating to the students themselves ($n=11$, 15.5% and $n=9$, 18.4%, respectively) as well as difficulties arising from the lack of school support ($n=6$, 8.5% and $n=5$, 10.2%, respectively).

Influence of the Excellence 2000 Program on its Students and Graduates – Comparison among Principals, Teachers and Graduates

From a comparison between principals' and teachers' responses as to the major influences of the Excellence 2000 program on its students and graduates, it seems that the major influence noted by all three groups as most influential is the development of students' personal skills. 95.1% of the principals and all the teachers (100.0%) noted the program's contribution to the enrichment and expansion of students' horizons, development of excellence and learning motivation, grooming of thinking skills and more. Graduates also noted that the program influenced them in its contribution to their enrichment and the expansion of their horizons ($n=135$, 39.4%), allowed them to express their abilities and strengthened their self confidence ($n=43$, 12.5%). The program's influence on the students' future was noted by all three groups.

Activities Relating to the Promotion of "Excellence" as a Central Value in the School – Comparison among Principals, Teachers and Graduates

All three groups report of different activities in the school on this subject ($n=10$, 14.5%, $n=17$, 34.7% and $n=50$, 29.8%, respectively). One can conclude from the numbers, however, that there is room for improvement relating to the promotion of excellence as a central value in participating schools.

Ways in which SEE can Contribute to the Integration of Excellence in the School – Comparison between Principals and Teachers

From a comparison between principals', teachers' and graduates' responses to activities relating to ways in which the Society for Excellence through Education can contribute to the integration of excellence in the school, both groups note similar ways while attributing different weight to each. Both groups note SEE's contribution in the general school environment as the most frequent ($n=17$, 27.9% and $n=11$, 40.7%, respectively), including social and educational activities for the general population, integration of excellence in other studied subjects and more. Other options that arose from the questions were SEE's promotion of excellence through additional study and additional teacher training ($n=11$, 18.0% and $n=7$, 25.9%, respectively), along with increased budget and resources ($n=11$, 18.0% and $n=5$, 18.5%, respectively). Additionally, principals emphasized the option that SEE contributes to the promotion of excellence in the school by diversifying and changing the program content and activities ($n=15$, 24.6%) and in particular related to increasing the number of enrichment activities. Teachers also related to this option but in lower frequency ($n=2$, 7.4%).

Ideas for Change in the Excellence 2000 Program – Comparison among Principals, Teachers and Graduates

A comparison among principals, teachers and program graduates, as to the changes they feel should take place in the Excellence 2000 program, primarily indicates that only a small percentage of the three groups believes changes should be made, and of these only few changes were detailed and with very low frequency relating to each response. In light of the small numbers, these findings should be treated with caution. From the responses of those who answered the question, we see similarity in the areas that were raised though there is some difference in the emphasis given by each group. The need for change in the content and frequency of the teacher training was mentioned by principals and teachers, while the graduates related to this topic from a different point of view - reflecting the need for improving teacher quality ($n=12$, 5.9%). It is also evident that both principals and graduates see a need for structural changes ($n=9$, 22.0% and $n=30$, 14.8%, respectively), for example, continuation of the program through high school or changing the screening process. These matters were not addressed by the teachers at all. It is worth pointing out that the need for change in school preparation, among these more comfortable hours or changes to the size of the study groups, were mentioned by the teachers ($n=7$, 21.9%), slightly less by graduates ($n=14$, 6.9%) but not at all addressed by principals.

Breakdown of Student Responses by Gender

The research literature relates to the students position towards their studies, teachers, and of differences in attitudes and approach between boys and girls. Nevertheless, the findings of the earlier program evaluation study (Heem – Younes and Freedman, 2002) did not find any differences in the students' positions that were based on gender. It was important to examine whether this trend reoccurs among program graduates, or not. A comparison was conducted using an X^2 test, comparing the answers of male and female graduates, in their agreement with different statements that were presented to them in the questionnaires. The findings show distinct statistical differences on 20 of the 60

statements to which the graduates responded. The different statements describe diverse aspects related to the Excellence 2000 program and its characteristics, and it seems that the level of agreement among male and female graduates differs in its approach to the varying aspects as seen below.

The comparison shows that with respect to the statements that describe **the reasons which motivated the graduates to take part in the program**, there is agreement between the two groups on most items, with the exception of three. On the first (item 27), the boys agreed to a greater extent than the girls, that the low academic level in the ordinary science and mathematics classes is what motivated them to join the program ($p < .01$). On the two other items the girls expressed greater agreement than the boys: the first (item 29), deals with the fact that female graduates enjoyed studying in the program ($p < .05$) and the second (item 35) deals with the guiding approaches used by the teachers on the program and which led the female graduates to take part ($p < .05$).

As for the statements that describe the **graduates' positions toward the program and its contribution to them**, the comparison findings show that on this subject, there is agreement between the two groups on most of the statements with the exception of five, on which the girls expressed higher agreement than the boys. These statements relate to the program's contribution to the female students' abilities to deal with scientific fields (item 53: $p < .01$), to fuel their curiosity in this field (item 44: $p < .01$), and how it combined new theoretical information with practical experience (item 56: $p < .01$), enriched their knowledge and deepened their understanding of the sciences (item 42: $p < .05$) and encouraged them to strive for excellence (item 38: $p < .05$).

The comparison's findings with respect to statements describing **students' characteristics in the Excellence 2000 program** show that there are distinct differences between the two groups in four of the six items presented to them on the questionnaire, at a distinct level of $p < .05$. On three of these, the differences are expressed in greater agreement by the female graduates. The statements relate to the girls being proud about taking part in the program (item 63), that it was difficult to be accepted to the program (item 62) and that their school has clear criteria for acceptance to the program (item 64). In another statement that showed a distinct difference based on gender, more male graduates agreed that every student in their school wanted to join the program (item 66).

As for statements that relate to **the program's position in the school**, the comparison of program graduates' answers by gender showed that there are distinct statistical differences in four of the six statements presented to them on the questionnaire. On three of these, the female graduates expressed greater agreement than the male graduates. The three are that: the program was familiar to teachers and students in the school (item 69: $p < .01$), the program's influence on the general atmosphere in the school striving for excellence (item 68: $p < .01$) and that the general school population appreciates and respects the program's students (item 70: $p < .05$).

A comparison of male graduate responses and female graduate responses, with respect to statements that deal with **the program's enrichment activities**, show differences on

many of the items presented. On most of the items, the differences found are expressed by greater agreement of the female graduates than the male graduates. The statements relate to the importance of the enrichment activities (item 80: $p < .01$), that this was an attraction of the program (item 79: $p < .01$) and that they enjoyed the activities (item 78: $p < .01$), that the enrichment activities contributed and advanced them (item 73: $p < .01$) and that it included successful activities (item 75: $p < .05$).

Discussion and Summation

The findings of the third study point to the continuation of the trends witnessed in the program's earlier evaluations. This study shows broad and positive agreement among the members of the three groups² - principals, teachers and program graduates – on all the parameters that were examined: the reasons for studying or teaching on the program, positions with respect to the curriculum, the program's contribution to its students and graduates, teacher training and program enrichment activities.

On many of the statements that were re-examined, we see a rise in the agreement of the study participants with the different statements presented. The comparison of statement averages, re-examined and tested again, on both studies, show greater agreement with most statements in the third study compared to the second one.

It is important to clarify that the Excellence 2000 program is a dynamic program that develops and changes from year to year: regarding specific goals, the content and the growth rate as well as expansion of the program to additional schools. It is therefore possible to assume that the program to which teachers and students were exposed to four years ago is not the same program as today, and conversely the program to which the program graduates related is not the one that is currently implemented in the schools. Nevertheless, it is important to remember that the guidelines and goals of the program have remained as they were in the early days of the program, 15 years ago: the desire to provide students with high skills and learning abilities, bringing students closer to sciences through the use of creative, experience filled learning methods and grooming the student teacher relationship, striving for personal and school excellence. All these were the cornerstones of the program in its early years and are still so today. If this is so, then how are the changes expressed? These are expressed by the different emphasis that has developed over the years, for example, new ways of attaining the program's goals and expanding the program's operation to a national scale to include 150 schools, 500 teachers and some 8,000 students. Another example is the characteristics of the students that take part in the program today which are very similar to those of students in its early days. On the other hand, the screening process has undergone drastic changes. Other changes include the attempt to integrate excellence as a value in the entire school and not only in program students, but in content, learning materials, teacher training, etc.

² It is important to note that the number of principals and teachers that took part in the study was low and therefore the findings regarding their answers should be treated with caution.

The following summation will discuss the central themes examined by the study compared with previous study findings, all with the aim of examining the existence of trends and their continuation over the years, alongside the existence of changes and shifts that took place in the program and the opinion of those who take part in the program.

The Excellence 2000 Program Contribution to the Student and Graduate

The findings from the interviews held in the first part of the study, revealed three central aspects where the program contributes to the student: the cognitive aspect – development of thought, curiosity and creativity; the intellectual aspect – acquisition of knowledge; the emotional aspect – the joy and experience of students in the program. The program's contribution to the students' self esteem and confidence was raised in the interviews, to a small degree, by principals and teachers only. These trends were generally exhibited in the questionnaires as well. In addition, the three groups emphasized different aspects of the program's contribution to students who take part in it. From their subjective perspective, the principals attributed greater contribution of the program to the students while teachers related primarily to the program's contribution to the thought processes and learning motivation of the students. The program graduates' responses, like those of the teachers, emphasize that self study within the program has improved their knowledge and provided them with tools to deepen their understanding in the sciences, providing them with tools to develop thought processes. The differences between the groups have been found to be statistically distinct. Similar findings arise from the responses of the three groups on **areas where the program influenced the life of students and graduates**. The area that all three groups noted as most influential was the development of the students' personal skills. The influence of the program on the students' future was also addressed by the three groups. Students also added that the program allowed them to express their abilities and strengthened their self confidence. **These findings teach us that most of the program's goals with respect to its contribution to the students were attained, and when compared to earlier evaluations it seems that they are achieved to a greater extent. It is apparent that the three groups agree to a great extent with the achievement of cognitive, intellectual and emotional goals among students and graduates.**

The Position of the Excellence 2000 Program in the School

On the face of it, it seems that the positions of principals, teachers and program graduates, as to the place of the program in the school, are similar. Members of the three groups agree that the program is important to the school principals and influences the school atmosphere of striving for excellence and disagreed with the statement that the general school population mocks and ridicules the program students. However, the degree of agreement with each of the statements is different as principals expressed greater agreement while students expressed the least agreement of all three groups. These differences were found to be distinct with respect to statements common to principals and teachers and with respect to statements common to all three groups. It also seems that in the principals' opinion, the place of the program in the school is a more positive and central one compared with the opinion of the teachers and students. This is supported by the findings in the in-depth interviews that support this leaning. The

principals' interviews show that they grant the program a central and important place in that it can contribute to the school's image and assist in its marketing as well as provide a solution for high potential students with high learning abilities. However, though principals in general, feel that the program is central compared to the reports of teachers and students, this aspect is different between the various schools and can be attributed to the difference in the school's conduct. Various aspects differentiating the schools can be seen: the central aspect is the initiation of general school population science activities, organized by the teachers and students of the program. Other aspects that point to the program's place in the school are its physical visibility in the school, the degree to which it is felt and its significance in school life and to what degree it is known to the entire school population and its teachers.

A gap, between the principals' support of the program on the one hand and its limited place in the school on the other, is also apparent in the answers provided by teachers. We can assume that the program's place in the school is not dependant only upon the principals' involvement and personal contribution to the program's promotion, but also upon other aspects, perhaps financial, that limit the scope of the program, as detailed below, in the teachers' reports relating to factors which hinder the success of the program at school. **A comparison of this study's findings with earlier studies shows a positive and substantial improvement in the teachers' perception of the program's place in the school and the principals' position towards it.**

Characteristics of Participants in the Program

The findings of the current study show, in general, that principals, teachers and graduates that took part in the study, characterize the program students in a similar manner. The three groups expressed the greatest degree of agreement with the statement that students who take part in the program are proud of their participation, with the statement that their school has clear criteria for acceptance to the program, that the program accepts only students with a willingness to invest efforts and self study and is only for talented students. The principals' agreement with these statements is the highest, followed by the teachers while the graduates' agreement is the lowest. These differences were found statistically distinct in all the common statements presented to the three groups. It is possible that the explanation for this is that the students are not yet sufficiently aware of this process, its components and its underlying criteria. It is possible that these findings express the little interest that the students have in the process or even the lack of interest they have in promoting the screening process, compared with the interest of the teachers as those who lead it. It is also important to note that in comparing the findings of this study with the earlier study, a change in the participants' answers is evident, so that we now receive a coherent and homogenous picture as to the program screening and acceptance process. This change is consistent with the change that has taken place in the program's screening and acceptance process over the past few years. While in the past, the acceptance process was based on the teachers selecting the qualified students according to agreed criteria, over the last few years and as a result of the previous evaluation findings, a structured screening and acceptance process was established, featuring two main stages: examination and interview. It should be noted that this study is based on the responses of program graduates that haven't experienced the structured

process as well as the responses of teachers who have. And so it seems that the contribution of the process is felt and expressed in the teachers' responses in two ways: the first is that they report, to a greater extent than before, that "their school has clear criteria for acceptance to the program"; and the other is their disagreement with the statement that claims that "any student in their school can join the program". With respect to the last statement, there was greater agreement in the past. The change in students' answers cannot therefore be attributed to the changes that took place in the screening and acceptance process. These changes may be attributed to a time parameter that tends to color the program graduates' perspective and the way in which they perceive the process. **It seems that the change that took place in the program screening and acceptance process has a positive influence on the running of the program, the principals and the teachers. Nevertheless, it is still too early to conclude this matter as the time parameter is vital on this point and in our understanding it is important to re-examine the participants' position in a year or two, once this process has stabilized.**

Factors in the Success of the Excellence 2000 Program

The study findings point to a similarity in the perception of the principals and teachers as to the factors that contribute to the program. However, each group emphasizes different factors. Thus the two groups mentioned **teachers** as one of the most influential factors in the success of the program: the importance of selecting the right teachers (among principals) and the teachers' strong commitment to the program (among teachers). The two groups mentioned **student motivation** and the importance of **school preparation**, including the principals' commitment and determination in having the program run in the school. On the other hand, the factor that was most frequently mentioned by the teachers as contributing to the success of the program refers to **the unique nature of the program** and its various aspects and components: enrichment activities, learning methods and content. This factor was ranked only fourth by principals and at a much lower frequency.

In addition, the findings show that both groups, principals and teachers, emphasize the same factors as hindering the success of the program. The principals and the teachers noted difficulties such as not enough teacher training, difficulties related to the **students** themselves and difficulties arising from the **lack of school support**.

It is interesting to see that the same factors appear both as contributing to and hindering the success of the program, though not all of them. For this reason it is important that, in the future, the same three factors that both principals and teachers see as contributing to the success of the program – the choice of suitable teachers and their in-depth, thorough training, as well as structured process of screening and acceptance to the program which ensures that suitable, motivated students are emphasized. The issue of a lack of resources must also receive a proper response, whether from municipal authorities or via an allocation of funds from different sources.

Differences due to Gender in Graduate Responses

The research literature that relates to the students' view of their studies shows a difference in approach between boys and girls. Despite this, findings from the program's

previous evaluation (Heem – Younes and Freedman 2002) reveal no gender-based differences between students in the program. It was important to re-examine whether this trend repeats itself among male and female graduates of the program. And indeed, contrary to the findings of the previous evaluation study, the current study findings point to distinct statistical differences in a third of the statements answered by the graduates. The female graduates answered that they felt more proud about taking part in the program, that it enhanced them, advanced them scientifically and enriched their knowledge while developing their thinking skills and that they enjoyed the program and the enrichment activities more. On the other hand, the male graduates agreed, more than the female graduates, that the low academic standards in the regular mathematics and science classes is what motivated them to take part in the program, and with the statements that claim that any student that wishes can join the program. **In addressing these findings it should be noted that of the graduates participating in the study, two thirds were girls and only one third were boys. This may influence the distinctiveness of the differences. Attention should also be paid to the fact that it seems the willingness of girls to take part in the study was greater than the boys. This difference may also be related to basic differences in the girls' perspective compared with the boys, in how they retrospectively view the program. This assumption is based on mere feeling from the interviews with male and female graduates. Due to the changes in this matter, as evident from a comparison of this study with the previous one, it is important to continue and examine the existence of these trends in the future.**

In summation, the study findings show that most program goals relating to the program's contribution to teachers, students – graduates and the school system are attained, though not to the full extent. There is wide agreement that a cognitive, intellectual and emotional contribution to the students and graduates of the program is attained. It is also apparent that the program contributes to teachers who take part in it. Regarding the program's wider influence on the students and its future influence (for example, post- high school studies), the teachers' and students' testimony is not solid enough and at this stage cannot truly provide evidence to the contribution of the program in these areas. **Therefore, it is important that in the future, the areas of influence of the program on the graduates are re-examined. It is important to do so when the graduates reach a stage and age in life where the program's contribution on their choice of high school studies, their accomplishments in these studies and their post high school and academic choices become apparent. At that time it will also be possible to learn their views on the program's contribution to them as adults, views that may differ from their views today while they are still in high school.**

As for the second goal – there has been a positive change in the involvement of some of the school principals, as evident from the principals' answers and the teachers' responses on this matter. Regarding this area, intensive and in-depth treatment are needed among both principals and teachers and it seems that the Teachers' Excellence Advisors course, initiated by the "Society for Excellence through Education", can be a breakthrough in this matter. Defining the role in a clear and ordered manner, the allocation of a teacher to this role by the principals and allocating teaching hours and budget may be a solution to this

matter, while also endorsing it with a stamp of professionalism. This situation may show more clearly the importance of this issue and create an awareness and most important – provide the teachers with tools to accomplish the goals within the school. **Once the trained teachers have had two to three years to experience and work in the school in a structured and orderly manner, it is important to re-examine the matter of excellence integration into the school. We hope that the findings of the study will shed light on the advantages of the program and the various aspects of its contribution to its participants.**

Program Documentation

Excellence 2000 – Program Description

Excellence 2000 is a unique educational program in the fields of science, experiment and mathematical thought. The program is operated and runs in elementary, middle and high schools throughout the country, and is intended for gifted students with high learning potential and strong motivation. The program was developed and is operated by the Society for Excellence through Education with the assistance and cooperation of the Ministry of Education, funds and other organizations.

The program's goals include three central focuses for influence, enhancement and change: the student, the teacher and the school (as part of the local school system). The ways to accomplish the program goals are: (1) grooming excellence, encouraging creativity and educational leadership among students while providing equal opportunity to all segments of the population; (2) grooming the student as a thinking, initiating and creating person; (3) posing challenges to the students and encouraging depth and realization of potential; (4) providing the students with the tools for developing scientific and mathematical thought; (5) enhancing student motivation to understand natural phenomenon through research and experiment; (6) providing the students with professional tools and knowledge in the arts and encouraging and grooming self expression; (7) encouraging the student to strive for excellence and advance to higher academic levels; (8) empowering teachers and assisting in changing teaching patterns so that research, experiment and teacher guided self study are integrated; and (9) strengthening the local school system as a result of strengthening and integrating the strive for excellence in students and teachers participating in the program.

The program has four central components: (1) training of the local school staff by the Society for Excellence through Education; (2) a unique learning program providing literature on various subjects not ordinarily studied in the regular curriculum. This program was developed by the Society for Excellence through Education; (3) an enrichment program that includes a wide variety of activities that are a supplement to the program with the aim of deepening it and diversifying it; and (4) summer camp for eighth grade graduates who participated in the program throughout the year. The summer camp is run as an overnight camp with dormitory facilities and is located at The Israel Arts and Science Academy campus in Jerusalem.

From “The Discovery Program” to “Excellence 2000” – Evolution of the Program

The Excellence 2000 program has operated for eight years in its current form. For the first 10 years of the program it operated in a more limited form in several schools and was called “The Discovery Program”. From early on, the main goal of the program was defined as “expanding knowledge and developing mathematical, scientific and technological thought among youth and discovering able youth with strong potential that do not get a chance to realize their skills and talents”. Within the program, the students were also exposed to culture and arts through encounters with artists from different fields. The program was a three-year program and was intended for gifted students in seventh through ninth grade whose chances for exposure to these fields was low due to their residence in the periphery, minority settlements or their belonging to families from lower socioeconomic classes.

Over the last eight years the program has undergone many changes and has expanded greatly. In 2006 (the year examined in the study) the program was operated and ran in 150 schools throughout the country and included 500 teachers and some 8,000 students. The demand for the program continues to grow. Parallel to this program, over the last two years SEE has been attempting to integrate the program into elementary schools (fifth and sixth grade) and high schools (tenth and eleventh grade) throughout the country.

The Program Goals

The program goals have also developed and been adjusted to keep up with the times and needs of the changing students. The core goals have remained the same though over the years new emphasis has been added. Today the program is much wider and includes first and foremost the desire to influence the teaching and learning culture in the schools while developing and integrating school excellence. Priority is still given to the operation of the program in the periphery though the program is now joined by schools from all over the country, from all sectors and all learning levels.

Characteristics of the Students Participating in the Program

In its current form, the program is intended for seventh, eighth and ninth grade students with the hope that they will participate in it for three years. However, over the past two years, SEE has been operating a pilot program, attempting to integrate the program in fifth and sixth grades in some 20 elementary schools and in tenth and eleventh grades in some 10 high schools. In general, it can be said that the pilot is very successful and it seems that in the future this will be extended to additional elementary and high schools.

In past years, and as part of the program’s and SEE's rationale, the student screening process was conducted without any test. Some two months after the school year began; teachers identified the suitable students among seventh graders, after getting to know them, according to five criteria: (1) high academic achievement; (2) high learning potential and a will to face new challenges; (3) exhibiting curiosity and creativity; (4) determination and a willingness to invest above average efforts; and (5) students commitment to take part in the program from start to finish. The criterion that was held by SEE as most important was personal motivation, i.e. “potential and a will to face new challenges”.

The Program Screening and Acceptance Process

Following the findings of the previous evaluation study (Heem – Younes and Freedman, 2002), where it was found that the teachers require a structured and orderly screening process for acceptance to the program, SEE undertook the challenge of changing the process with the assistance of a Szold Institute team and a screening process was developed including the following stages: the first stage is a mathematical and scientific thought screening test for seventh and eighth grade students. This test is based on basic science and mathematics taught to sixth and seventh graders and tests the students' thinking skills and motivation. The second stage is a personal interview held by one of the program's teachers and the intention is to get personally acquainted with the student and assess his/her suitability for the program with respect to expectations, other interests, etc. The interview is structured and includes two parts: the first is carried out together with the teacher where the students' responses are ranked on an answer sheet. The second part includes a questionnaire filled out by the student himself and where answers are ranked by the teacher at a later stage. The two stage results are then weighted and make up the final score. Experience teaches us that students with scores in the top ten percent are mostly accepted to the program though SEE strongly recommends that an Excellence 2000 classroom includes no less than 15 students and no more than 20.

Program Curriculum

The program curriculum includes two major fields, sciences and mathematics. In general each field is allocated two hours a week and in total four weekly hours. At the start, in the Discovery Program, there was no written uniform curriculum and teachers were requested to improvise as they saw fit. Most teachers actually simply taught the regular school curriculum in a more in-depth fashion, or taught more advanced material intended for higher grades. The aim of the program designers was different and with time they realized that a structured curriculum is needed. This is supported by findings from the program's first evaluation study (Zorman and Heem-Younes, 1996), where teachers reported difficulty in searching, locating, collecting and preparing study materials. As part of the changes the Discovery Program had undergone through in its transition to "Excellence 2000", many diverse booklets were written for teachers on the various subjects that include recommendations on different study units in each subject, including work sheets for the students. Today, these booklets form the backbone of the program and all teachers follow them. The importance of these booklets is expressed in that a teacher cannot receive a booklet unless he/she has been trained in its use by SEE.

Today, the program is operated in the schools in a four hours per week basis. These classes take place twice a week – two hours in the morning, during the regular school day and two more hours after the regular school day has ended. This is compared with previous years when the program was only operated after school. The rationale behind this change is the desire that the program become part of school life and that it will be seen and felt by all the students and teachers in the school – this is not another extra curricular activity but part of the school's curriculum. The program's visibility when operating after school is minor and students and teachers that do not take part in it, hardly feel its presence. When the program is operated during the school day more students and teachers are exposed to it and these aspire to take part in it. Additionally, those who do

take part in it feel a greater sense of pride for doing so than they would in a regular class. The program is no longer secondary or perceived as some forgotten “science nut” class but part of school life. On the other hand, the hours that are taught after school promote the perception that the student must also invest as well as educating for in-depth and wider occupation with the sciences beyond school hours.

In an attempt to promote the integration of the excellence value in the school and not only among program students, SEE encourages the school to hold joint creative and experience-filled activities for the entire school population alongside social, community activities such as:

Scientific fun days – Program students and their parents organize a scientific fun day for the school general student population. On this day the students operate activity stands and booths on different scientific subjects. This way, students and teachers of the school are exposed to enriching, experience filled activities in scientific subjects and come to know the content dealt with by the program students throughout the year.

Personal tutors – The program students tutor other school students that require assistance and support in sciences. The program students are also taught to share the extensive knowledge they acquire in the program while learning values that comprise the program’s primary goals, such as giving, volunteering and the importance of helping others.

One of the central underlying ideas of the program today is that students receive an individual response to their needs within the school system. This is in contrast to other programs that offer such responses and solutions outside the school system. The response is provided by teachers from the school staff and not by external teachers out of a belief and an intention to empower the school’s teaching staff so that this staff can lead the school to a general process of changing teaching methods, striving for excellence, an in-depth study of sciences, self study by the students, etc.

Program Staff

The program staff includes the Society for Excellence through Education director, the program manager, a general academic coordinator, a mathematics coordinator, an enrichment coordinator, seven regional inspectors and a number of scientists with an educational background in writing and approving study programs. The regional inspectors are in close contact with the school staff, observe classes and act as professional support to the curriculum and with regard to any other problem the teachers might encounter.

Teacher Training

Teacher training has been expanded and improved. Today, the national and regional teacher training throughout the year is structured and compulsory. Each teacher must attend 56 training hours annually, as detailed below: three full days at the Israel Arts and Science Academy in Jerusalem held during the summer break, and four single day training sessions held during the Sukkot, Hanuka and Passover breaks.

The teacher training is held separately for experienced and new teachers. The new teachers' training focuses on the special perception of the excellence value. A workshop is held, alongside SEE staff lectures. Additionally, three program units are studied. The experienced teachers' training teaches many, more advanced units in its aim to enrich the teacher and provide him/her with more diverse options in the program. It should be noted that teachers' participation in the training is high and most teachers attend and express their satisfaction.

As part of SEE's efforts to promote excellence in the education system, a new "Excellence in the Teachers' Room" project will begin in 2007 in which SEE teams will conduct annual training (56 annual hours) in schools throughout the country. The aim is that an annual work plan will be drafted initially in coordination with the school's principal and that as a second stage, training for excellence integration will be held in the school for the entire school staff and the excellence value will be implemented with respect to all school subjects. The vision is to integrate excellence as a value in the entire community while influencing as many schools as possible in the various local authorities and in ever-growing circles of influence.

Enrichment Activities – “Science Adventures”

In addition to the annual Science Experience, each school among the schools participating in the program must choose three external activities per year – special activities that "arrive" at the school or activities outside the school. The scientific enrichment activities expose the students to other fascinating aspects of the scientific world and provide a unique experience in addition to the annual curriculum. In the current program all the enrichment activities are scientific as opposed to previous years, in which the enrichment activities were also linked to the fields of the culture and the arts. This change stemmed from the understanding that three activities a year in the arts are not sufficient and in-depth enough, while special, unique, experience-filled activities in the sciences, that are dealt with throughout the year by the students, will contribute much more. The enrichment activities serve another purpose – they also act as a “booster shot” or a “prize” for the students and are eagerly waited for. One activity is regional and allows students to meet with other students from other schools; two other activities take the students out to new locations and bring students from the periphery to central locations, museums, etc.

Over the last few years, new projects and advanced activities have been developed, all aimed at deepening the scientific experience and promoting creativity and excellence in the students. For example:

“The Ilan Ramon Space Team Program”

Veteran schools of the program are invited to join the “Space Team” operated by SEE together with the “Asher Space Research Institute” at the Technion. The leading experts in space research and the prominent researchers from the academy are invited to lecture before the students. There are also tours of the planetarium and star observations, the institute laboratories and more.

Today, 14 schools are members of the “Space Team” and receive 28 annual hours for additional teacher training, beyond the regular teacher training. The students also receive two more weekly hours (a total of six hours rather than four).

Online Activity

SEE runs online activities from a broadcast room it has set up. The broadcasts include puzzles and competitions between schools around the country and abroad, school and regional competitions, virtual enrichment activities and more.

Gildor Family Projects and Inventions

Each year, ninth grade students are invited to take part in a special scientific project that includes the design and building of a scientific-technological product. The project is a highlight of the program and allows students to implement the vast knowledge they have acquired over the two years of the program. The project is part of a national competition between schools and the selected models are awarded valuable prizes by the Gildor fund.

Parent Involvement

An additional aspect of SEE's involvement is its relationship with parents. SEE members view parent involvement as part of the leverage that allows change in the community. Parents' support of their children is important to the children and contributes to strengthening the children's motivation to persist and advance in their studies. Therefore, efforts are constantly made to bring parents closer and strengthen their involvement in the program through introductions to SEE representatives, invitations by the school to the enrichment activities, special workshops, etc. It is important to note that these attempts depend on a local initiative by the schools, while SEE encourages the strengthening of the relationship with parents and their involvement in the program by inviting them to lectures in their field of expertise and more.

Opportunity for Excellence – the Excellence 2000 Program for Immigrants from Underdeveloped Countries

While the program is designed for talented, accomplished students, another goal set by SEE is the promotion of the program among immigrant students. This has been done particularly among immigrants from Ethiopia and lately among students who immigrated from the Muslim republics of the former Soviet Union, as few students from these states manage to be accepted to the program. Schools that have a large concentration of immigrant students have created special study groups for them. In these classes, the students learn according to the principles of the program (even though at a lower academic level). The aim of this activity is to advance these students and help them bridge the educational gap so they can take part in the program in a full and equal manner and even continue to a science and arts high school. In 2006, 11 such groups operated throughout the country and 13 new ones will open in 2007 for immigrant students.

E2K Abroad

Since its foundation, SEE has, together with its activity in Israel, developed and maintained strong ties with educational and academic institutions in the USA that

specialize in education for advanced, high potential students. The program has operated in the State of Illinois since 1999 through the Illinois Mathematics and Science Academy (IMSA). Since then, many more schools have joined the program in three main areas – Illinois, Iowa and New York. In 2006 the program was operated and ran in some 100 schools and included some 2,000 students in the USA.

The Society for Excellence through Education follows this process and operates a support system that includes four components: (1) curriculum – the study units and support materials in sciences and mathematical thought have been translated into English; (2) teacher training which encompasses:

- An E2K teachers' seminar for new teachers that takes place in February in Israel
- An E2K teachers' seminar for veteran teachers held in June in New York.

SEE trains school teams and academic institutions in the USA as program leaders and trainers for local teachers. This training is done through an annual seminar by a SEE team, that takes place in Israel, in the English language and includes training in three main areas: pedagogical administration of the program, science teaching and mathematical thought teaching; (3) professional virtual support – throughout the school year the SEE team supports the program operators via online communication systems; and (4) virtual activities between the students and teachers of the program – throughout the school year joint virtual activities take place between program student in Israel and abroad.

Excellence Advisors Course

The Society for Excellence through Education, together with the Ministry of Education, the Science and Technology Administration and the Davidson Institute for Scientific Education (adjacent to the Weizmann Institute of Science), have initiated a new educational project for the promotion and grooming of excellence in the education system. This enterprise stems from a desire to create a suitable educational infrastructure for excelling students and groom school excellence. For this purpose the schools are asked to designate and name one team member whose role shall be to act as the person responsible for dealing with and grooming exceptional students in the school. This person shall be chosen based on his/her personality and credentials and will be trained for the new role in a two year long course.

The rationale behind the course and the development of this new role in the school is based on the assumption that grooming the excelling students in the school serves two purposes: the first is providing a suitable solution to this special needs' population and the second is positioning excellence as a central value in the school and raising the overall school level as an ongoing process led by a group of excellent students.

The Excellence Advisors Course trains groups of leading teachers from scientific fields. Once they have completed the course, these teachers will provide the proper attention to the excelling students in the school in a professional and organized manner. The course is two years long (comprised of 168 hours) and take place at the Davidson Institute for Scientific Education adjacent to the Weizmann Institute of Science and at the Society for

Excellence through Education in Jerusalem. The first course began in 2005 and included 15 teachers. The second course opened in 2006 and also includes 15 teachers.

The main topics covered by the teacher training are:

strengthening skills: development of leadership skills, development of regional excellence leadership teams, teaching and guiding excelling students, development of teacher excellence guidance skills, new modals for running project in the school and tools for handling difficulties and obstacles.

Professional Strengthening: Each teacher will be exposed by the institute's researchers to the latest innovations in the discipline to which he/she belongs: biology, chemistry and physics. Science teachers will also be exposed to interdisciplinary fields such as astronomy and space, biotechnology, biochemistry and others. In addition, teachers will receive strengthening and enrichment in science and technology. Teachers that belong to a certain scientific discipline will also receive enrichment in other fields using the appropriate study materials of the Society for Excellence through Education and the Weizmann Institute, with an emphasis on the pedagogies and didactics suitable for each target population.